

[Next Meeting](#)

[Inside this Issue...](#)

[WECAFEST](#)

[FCC Delays New RF-
Exposure Rules](#)

[From the Editor](#)

[Mark Your Calendars](#)

[Web Sites of the
Month](#)

[Changes to the 2m
Repeater](#)

[LIMARC Hamfest](#)

[ARES/RACES:
Staying at the
Forefront \(A Ramble\)](#)

[APRS Net](#)

[New York City Maps](#)

[New APRS Book](#)

[License Examinations](#)

[Little LEOs Narrow 2-
Meter Focus to 146-
148 MHz](#)

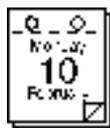
[Southern District Net](#)



THE WECAGRAM



Volume 21, Issue 2 February 1997



Next Meeting

The next WECA meeting will be held on Monday, February 10, 1997 at the Westchester County Center in White Plains, beginning at 7:30 p.m. with a social half-hour followed by the main program at 8 p.m.

At press time, this month's guest speaker had not been determined yet. If you have ideas for future meeting topics or speakers, please contact David Weiss, N2OGK.

Hope you can all make it to the meeting.

Inside this Issue... From the Editor Page 2

Mark Your Calendars, by N2TSE Page 2

Web Sites of the Month Page 2

Changes to the 2m Repeater, by N2DVQ Page 3

LIMARC Hamfest Page 3

ARES/RACES: Staying at the Forefront, by N2YGK Page 3

New York City Maps, by N2ZRC Page 4

New APRS Book Page 4

APRS Net Page 4

Little LEOs Narrow 2-Meter Focus to 146-148 MHz Page 5

License Examinations Page 5

FCC Extends Transition Period For Determining... Page 6

Southern District Net Page 6

Latest Call Signs Page 6

[Latest Call Signs](#)

[Next Board Meeting](#)

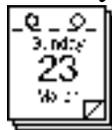
[RF Radiation and
Electromagnetic Field
Safety Part 4](#)

[WECAFEST: March
23](#)

[Colophon](#)

Next Board Meeting Page 6
RF Safety, Part 4 Page 7

March
23
Sunday



WECAFEST

The next WECAFEST will be held at the Yonkers Raceway on Sunday, March 23, 1997. Volunteers who would like to help out at WECAFEST, or the mailing party on Sunday, January 26 (10 a.m., Red Cross in White Plains), should contact Tom, WB2NHC, at 914-769-1486.

FCC Delays New RF-Exposure Rules

From ARRL Bulletin 102, December 24, 1996

Just in time for Christmas, the FCC has postponed the date for hams to comply with the new RF-exposure regulations from January 1, 1997, to January 1, 1998. The ARRL was among those requesting the delay. The League said that the additional time was needed for the FCC to draft implementation guidelines and for amateurs to use them to comply with the regulations (released on August 1, 1996 as ET Docket 93-62).

FCC Report No. DC 96-112 announced the amendment of the rules to extend the transition period

for licensees to determine compliance with the new bioeffects requirements for RF transmitters. The League obtained a copy of the report just before noon on Christmas Eve.

The time extension to January 1, 1998, will allow changes to Amateur Radio operator examinations to be made along with routine revisions between now and July 1, 1998, rather than requiring hurried special revisions. Among the reasons for requesting the extension was the desire to permit licensees to make a more orderly entrance into this new area, to allow time for information to be promulgated to hams to ensure that they have the information at their disposal to comply with the new rules, and to allow time for appropriate questions to be

inserted into the question pools for the various amateur license exams.

In Report No. DC 96-112, the FCC said it disagreed with those petitioners who suggested that the time extension "will have significant adverse effects on public health." See Report DC 96-112 on page 6.

Editor : Fuat Baran, N2YGN

Assistant to the Editor : Melissa Metz, KB2SXB

The WECAGRAM is the official newsletter of the Westchester Emergency Communications Association, Inc., a Special Service Club affiliated with the ARRL, ARES, the Westchester County Office of Disaster and Emergency Services, and RACES, and a member of the Westchester County Emergency Medical Services Council.

Any inquiries, comments, items for Swap and Shop, commercial advertising, suggestions, contributions and letters for inclusion should be sent to the editor at: 3215 Arlington Ave, #4H

Riverdale, NY 10463.

Submissions via electronic mail to wecagram@weca.org are especially welcome. You can also fax them to 212-662-6442 (ATTN: Fuat Baran). Submissions may be edited for clarity, style and space. The deadline for acceptance of material for each newsletter is the twentieth of the preceding month.

All materials are the opinions of their authors, and do not necessarily reflect the official position of WECA, its officers, directors, or the editor.

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The WECAGRAM would like to exchange newsletters with other clubs. If you are interested in receiving the WECAGRAM through such an exchange or know someone who would, please contact the editor.

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Awards Committee Chair: Richard Benda, WB2QJA
President Emeritus: Thomas R. Raffaelli, WB2NHC

WECA gladly accepts donations of equipment, new or used (such as from estates). Please write to WECA at the Sleepy Hollow address on the cover.

WB2ZII/R WECA operates the following repeaters:

147.060(+) MHz PL 2A (114.8 Hz)
447.475(-) MHz PL 2A (114.8 Hz)
224.400(-) MHz PL 2A (114.8 Hz)

WECAGRAM Online: <http://www.weca.org/wecagram>

From the Editor

In this issue, Arte, N2ZRC, recounts his experiences generating APRS maps of New York City. Bob, N2DVQ, is back with a report on recent work done on the 2-meter repeater. We continue with the fourth installment of the RF Safety series as well as information on the recent FCC announcement of the deadline extension for compliance with the new RF requirements. No antenna projects this month, but I have several in the works from Stew Tannahill, KB2VVB.

During these cold winter months consider cuddling up with a warm laptop and

dashing off an article or two for the WECAGRAM. Or if you prefer to warm yourself by the glow of a soldering iron, how about describing a recent project you worked on? No prior writing experience or drafting skills are necessary.

73,

Mark Your Calendars

by Robert Kantor, N2TSE, Public Service Director

For those of you who plan way in advance, here are some dates for upcoming public service events that WECA will be participating in:

Sunday, April 20: 1997 Walk for Multiple Sclerosis at Rye Playland.

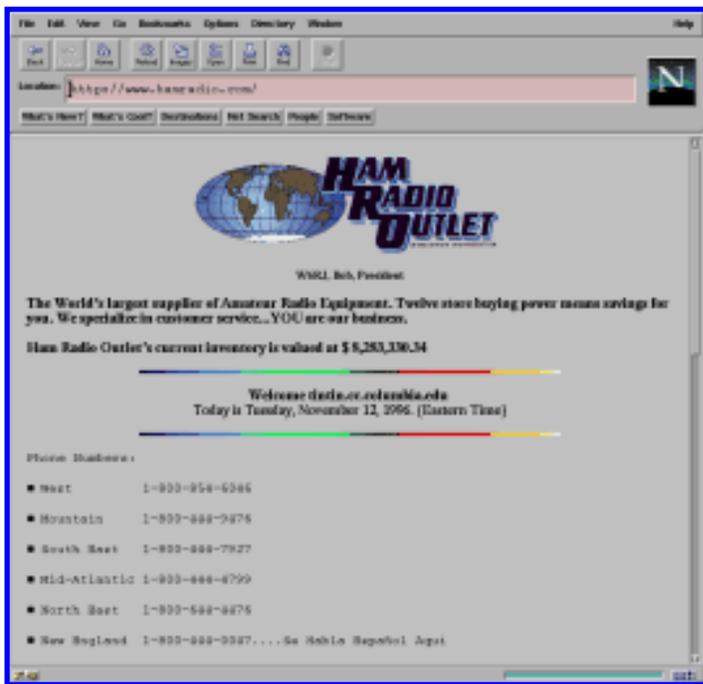
Sunday, April 27: March of Dimes WalkAmerica, in Mt. Kisco.

Sunday, June 8: Burke Rehab. Wheels and Heels 5K Race.

Sunday, June 8: American Diabetes Association Tour de Cure bike tour at SUNY Purchase.

If you would like further information or would like to put your name on the volunteers list, give me a call on the 2m repeater, or call me at 914-949-4231.

Web Sites of the Month



www.hamradio.com



www.co.westchester.ny.us

Changes to the 2m Repeater

by Bob Wilson, N2DVQ

A few weeks ago some changes were made to the 2 meter repeater at the jail.

What was done was to reduce some of the filtering on the transmitter output. These filters keep the transmitter noise out of the receiver when both transmitter and receiver share the same antenna. This filter is called a duplexer which allows a transmitter and receiver on the same band to operate on the same antenna. A similar filter called a diplexer is used to combine the VHF and UHF signals from your dual band radio to one antenna. A diplexer combines signals in different bands, or frequencies very far apart. A duplexer combines signals close together in the same band. When combining, a rule of thumb is that the closer the frequencies are to each other the more loss will be experienced in the combiner. This reduces the amount of output power getting to the antenna.

With our system of remote receivers, it is not uncommon to hear a mobile station very far from the county complain that he can barely hear the repeater, yet he is full quieting into a remote. In other words, the system is not balanced. It hears much better than it is heard. To minimize this imbalance we need the most power we can squeeze out of the repeater without burning it up. Remember though that it is on the air for an average of eight hours a day, sometimes transmitting continuously for four or five hours.

One way to get the efficiency up is to reduce the filtering and therefore the loss to the transmitted signal. Since the transmitter and receiver have their own antennas, we are trying to reduce the loss by removing some of the filtering. However, this may have the undesired effect of reducing the jail receiver's sensitivity. This happens because some transmitter noise will get into the receiver and interfere with a weaker signal from a user.

We will study the balance between talk-in and talk-out of the repeater and receiver sensitivity and see if this helps the balance without killing the receiver. If you are now suddenly having difficulty getting into the repeater receiver at the jail please let me know. You guys know first when something isn't right, so let me know.

LIMARC Hamfest

The Long Island Mobile Amateur Radio Club, Inc. will be holding a hamfest at the New York State Armory in Freeport, NY on February 16, 1997, at 9:00 a.m. till 2:00 p.m.

For additional information, contact Mark Nadel, W2OT at 516-796-2366.

ARES/RACES: Staying at the Forefront

(A Ramble)

by Alan Crosswell, N2YGK

During the slow winter months, in between storm activations, is a good time to work on sharpening those all-important technical skills that make us invaluable resources to assist emergency services providers such as the local government, hospitals, and the Red Cross.

What distinguishes hams from other communicators? Besides a long history and tradition of service, and our many technical toys that we bring along with us, is the ability to think on our feet and adapt to changing needs in the field. Our radios are not limited to two or three preset frequencies, nor is our equipment necessarily limited to one band or mode. We can build antennas in the field and repair our radios (right? :-). OK, so maybe this is a little too much hyperbole, but you get the idea.

Another thing that distinguishes us from other communicators is that we are not professionally trained as such. We mostly speak plain English, don't use 10-codes, and have not been extensively trained the way a police dispatcher has been, for example. It is important to recognize the variability in skills and interests among our group and first and foremost understand and appreciate these differences ourselves, and secondly, be able to represent these differences to our served agency representatives. We are, after all, part-time volunteer communicators, hopefully providing auxiliary communications to offload non-critical work from the front-line public safety pros. Of course, as bad luck would have it, hams have, and will continue to have to provide primary communications from time to time when those professional systems are damaged, or overloaded.

So, back to the interesting stuff: staying at the forefront. Consider, if you haven't already, some of the "new technologies" out there for ham radio and how your becoming skilled at them could be a boon. For example, I am typing this article on my new laptop (which cost me a promise to not buy any more radios for two years!) Many of you who own computers probably have a laptop. Have you set it up for portable packet? Did you know that these days you can do 1200 and 9600 packet without a TNC, by using your Soundblaster? How about that Internet, which is based on TCP/IP? Did you know that Phil Karn, KA9Q, was one of the pioneers of Amateur TCP/IP years ago with his NOS? (Did you know that I used KA9Q software for a wired

TCP/IP network 15 years before I got my ham ticket?;-)

Have you bought the techno-geek gadget of the year yet (a GPS receiver)? Plug it in to your radio through an APRS MIC Encoder and voila, you are now riding shotgun in an emergency vehicle providing position reports back to the EOC which are displayed on a map. Or maybe you're in the head or trail vehicle of an 'athon... Did you know there is now an experiment going on to do 115 kbps spread spectrum radio, open to any member of TAPR? Hmmm...

Did you see the "Anthony TV" show at the Airport drill? Pretty neat stuff too. It's not all digital modes.

Just don't forget to charge up those HT batteries (and spares) and make sure the generator is gassed up, 'cuz the primary mode is still VHF voice.

APRS Net

An APRS net has been formed which meets on the W2CMA repeater (145.23, 114.8 PL) on Wednesdays at 8:30 p.m.

New York City Maps

by Arte Booten, N2ZRC

Posted on aprssig@tapr.org, January 5, 1997

After many false starts and a few setbacks I am proud to announce the delivery of a healthy set of New York City maps. They should be available on the TAPR FTP site [[ftp.tapr.org](ftp://ftp.tapr.org)] sometime this week.

NYNYC01.ZIP is a series of maps for APRSDos for New York City and the immediate surrounding area. They are, by and large, street level and were made using the USGS 1:100,000 DLG CD for Area 1, dated June 1993, Joe Cavanagh's Mk100k3.exe, and cleaned up with Mapfix28. They were made on a Toshiba Satellite T105CS laptop which has a 75MHz Pentium processor and 8Mb of EdoRAM. There are nine four-mile, 84 one-mile and 64 half-mile maps making 157 in all. The NYWCxx.MAPs referred to in the maplist were made by Alan Crosswell, N2YGK, and cover Westchester County. They are available from his website, which is at:

<http://www.cloud9.net/~alan/ham/aprs/>

His maps (for both APRSDos and a humongous DOS-style map for Win/MacAPRS) are also street-level for that area. I made the New York City

series to complement and continue map coverage at that detail for here in The Big Apple. If you don't have them (and don't want them), simply put an asterisk (*) in front of their entries in MAPLIST.NYC using any text editor. The remainder of the maps that aren't mine are available via the TAPR FTP site.

Caveats : Due to the sheer density of many of these maps and the quantity of them that were necessary for street-level coverage, I had to make them at a scale of 4.2, 1.05 and .525 (actual) for the 4, 1 and 1/2 mile maps respectively. Because of this you must be *very* near the map center in order to be able to see them at all. Also, many of you mapmakers (and others, no doubt) will notice there's an inordinate number of maps that just, coincidentally, happen to have *exactly* 3000 points! If you'd like to believe that it's okay with me. But if you're looking for your favorite curve in a street and are wondering where it went... many of these maps, as they came out of Mk100k3, and a subsequent Task-Skrunch of 1.5, were *way* over 3000. Quite a few were over 4000. And Jack and I are still shuddering from the "Map-From-Hell" which came to 5387 points! I merely refer you to the old story about the Dancing Bear: "It's not how graceful the bear dances, it's that it dances at all." Besides, like The Bob'ser says on the LOGO screen, they're "not to be used as an aid to navigation!"

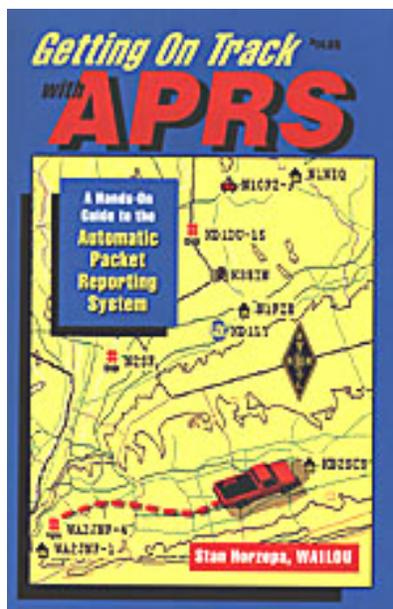
There *are* missing maps. I know! This is still a work-in-progress, and I am winnowing these missing maps down to size (a point at a time). All of those who have produced maps know how much fun it is to sit there and hit the +, -, go and delete keys hour after hour after hour. But I had originally promised myself that I'd get these out by Christmas, when I sat at the kitchen table ruthlessly killing points on the maps. I then said to myself, "Okay, make them a New Year's present of it." I think you've all guessed what I was doing in the kitchen on *that* day. So I decided, what the hey ... keep this up and you'll be done with 'em by the Fourth of July. Why not let 'em see what you've got *now* and send two files later. A full version (we can call it NYNYC02) and an upgrade (NYC01TO2) will contain the "missing" maps and a new maplist.

As always, I'm open to criticism, advice and flaming because of these maps. The former I will accept in the spirit intended, the middle for the sincere effort it shows and the latter... well, what's the *delete* button for, anyway!

One last thing: If *any* of you are contemplating some kind of similar project, making a set of street-level maps of a *major* metropolitan area, I suggest you make an appointment with a Doctor of Psychiatry first, and follow it up with a daily visit while the project is underway? Looking back on it, I must have been crazy to think a neophyte mapmaker could do this.

73 de Arte.

PS: There are *two* easter eggs in these maps. The first one that finds *both* will get the explanation for the second one. It's a doozie!



New APRS Book

The ARRL has published a new book on APRS called *Getting On Track with APRS*, by Stan Horzempa, WA1LOU. WA1LOU is the "Digital Dimensions" columnist for QST.

WECA members may notice Sandy, N2SF's digipeater on the cover. (You will not see Alan, N2YBK's station, which is obscured by the box...)



License Examinations

The next WECA sponsored ARRL VE session will be on Thursday, February 13, 1997 at 7 p.m. at the EOC (Emergency Operations Center) in the County Office Building, sub-basement EOC/ODES office (Office of Disaster and Emergency Services), 148 Martine Avenue, in White Plains, NY (across from The Galleria). For information contact Sandy Fried, N2SF, during regular business hours at 914-285-3029.

Little LEOs Narrow 2-Meter Focus to 146-148 MHz

From the *ARRL Letter* , January 17, 1997 (Vol. 16, No. 3)

In their effort to secure spectrum space that includes the 2-meter and 70-cm ham bands, the Little LEOs have narrowed their focus on 2 meters to the 146 to 148-MHz segment. The industry also appears to be attempting to reposition itself as a potential emergency communication adjunct to ham radio.

The little LEOs will use low-Earth-orbiting satellites to provide position-location and two-way data-messaging services to potential customers around the world. Customers would use small, inexpensive transceivers to communicate with satellites. According to the FCC, potential uses of this service include emergency location in remote areas, environmental data collection, vehicle tracking, and time-sensitive business and personal data communication.

For Region 1, a draft little LEO frequency allocation table has proposed adding a primary mobile-satellite allocation of 146 to 148 MHz to the existing allocations for fixed and mobile (except aeronautical mobile [R] services). The table was contained in a working paper--Document IWG-2A/86 Rev. 3, entitled "New Allocations for the Mobile-Satellite Services Operating Below 1 GHz"--submitted by representatives of the Little LEOs industry to Informal Working Group-2A (IWG-2A) January 7.

The 146 to 148-MHz segment is not a ham band in Region 1, but in Regions 2 and 3, a footnote would be added to state: "Additional allocation: the bands 146-148 and 430-440 MHz are also allocated to the mobile-satellite service, limited to non-geostationary satellite systems, for use only during emergency communication situations as a complement to the amateur service in accordance with Resolution No. 640."

The little LEO proposal also calls for a new primary allocation for the mobile-satellite (space-to-Earth) service for 430-440 MHz in Regions 2 and 3 (ham radio is primary in Region 1), and offers this rationale. "The allocation for the mobile-satellite service within the bands allocated to the amateur service is intended to be a complement to that latter service in situations involving emergency communications as provided for the [sic] Resolution No. 640."

As currently drawn, Resolution 640 covers only the 144 to 146-MHz segment of 2 meters and does not apply at all to 70 cm.

In the 440 to 450-MHz band, where the Amateur Service is not listed in the international table of frequency allocations except by footnote (ham radio is secondary in Australia, the US, Jamaica, the Philippines, and Canada), the little LEOs proposed a

new worldwide primary mobile-satellite (space-to-Earth) allocation.

Calling their service "inherently global" the little LEO group said the industry needs "frequency allocations that can be used anywhere in the world," for nongeostationary, nonvoice mobile satellite service through the year 2002. "ITU-R studies indicate sharing is possible," the industry said.

"If the demand for Little LEO spectrum cannot be satisfied by allocations that could be used on a worldwide basis, one solution is to assign different frequencies for use in the various regions of the world from within the allocations to the mobile satellite service," the working paper's preamble said.

Little LEO firms CTA, E-Sat, Final Analysis, GE Starsys, and LEO One submitted the third revision of the lengthy paper--which drew criticism from the ARRL as well as from military and land-mobile interests and the National Telecommunications and Information Administration--at the January 7 session. The ARRL continued its objection to the inclusion of amateur bands and to the misapplication of Resolution 640. For now, Document IWG-2A/86 Rev. 3 is tabled, but it's expected to come up again at future meetings. IWG-2A meets on January 21 and February 4.

Overall, the little LEOs proposed the following bands for additional allocation to nongeostationary data-only mobile satellite service systems: 138-144, 146-148, 149.9-150.05, 150.05-156.7625, 380-387, 387-390, 390-399.9, 399.9-400.05, 400.15-401, 430-440, 440-450, 470-608 and 614-806 MHz. The paper notes there are proposals concerning 401-406 and 450-470 MHz and for feeder links at 1390-1400 and 1427-1432 MHz in other papers, and that "additional allocation proposals are under construction for the 174-230 MHz band."

For additional information on the little LEOs situation, read the editorial "It Seems to Us..." by ARRL Executive Vice President David Sumner, K1ZZ, in February 1997 QST.

FCC Extends Transition Period For Determining Compliance with New Requirements for Evaluating the Environmental Effects of RF Electromagnetic Fields From FCC-Regulated Transmitters (ET Docket No.

93-62)

The Commission has amended its rules to extend the transition period for applicants and station licensees to determine compliance with the new requirements for evaluating the environmental effects of radiofrequency (RF) electromagnetic fields from FCC-regulated transmitters.

In 1985, the Commission adopted rules for evaluating the environmental effects of RF electromagnetic fields produced by FCC-regulated transmitters. In August 1996, the Commission amended those rules by providing for the use of new guidelines and methods, and established a transition period, until January 1, 1997, for applicants and stations to come into compliance with the new requirements.

The American Radio Relay League, Inc., Ameritech Mobile Communications, Inc., AT&T Wireless Services, Inc., BellSouth Corporation, Paging Network, Inc., the Personal Communications Industry Association and U S West filed petitions asking the Commission to extend the transition period beyond January 1, 1997, arguing that the existing transition period failed to provide adequate time for affected parties to achieve compliance with the new rules.

The Commission stated that, based on the petitions and comments, it is clear that most station applicants will need additional time to determine that they comply with the new requirements. The Commission noted that an extension of the transition period would: 1) eliminate the need for the filing and granting of individual waiver requests; 2) allow time for applicants and licensees to review the results of the decisions that will be taken in the near future addressing other issues raised in petitions; and 3) permit applicants to review a revised information bulletin and make the necessary measurements or calculations to determine that they are in compliance.

The Commission indicated that it did not concur with petitioners who suggest that granting any extension of the transition period will have significant adverse effects on public health.

Therefore, the Commission has extended the transition period to September 1, 1997, for most radio services. For the Amateur Radio Service, the transi

tion period has been extended to January 1, 1998. Additionally, the Commission will allow changes to amateur radio operator license examinations to be made as the examinations are routinely revised between now and July 1, 1998. The Commission believes that these extensions are necessary so that applicants and licensees will have adequate time to understand the new requirements and to

ensure that their facilities are in compliance with them.

Action by the Commission December 23, 1996, by First Memorandum Opinion and Order (FCC 96-487). Chairman Hundt, Commissioners Quello, Ness, and Chong.

-FCC-

News Media contact: Patricia A. Chew at (202) 418-0500. Office of Engineering and Technology contact: Rick Engelman at (202) 418- 2445 and Robert Cleveland (202) 418-2422.



Southern District Net

Darlana Mayo, N2DB, net manager of the Southern District Net, reports December SDN stats as follows:

Sessions 31

Total checkins 462

Traffic brought to the net 134

Traffic passed on the net 127

Percent passed 95

Total time 711 minutes

Darlana also announced the appointment of Sandro Sicilia, N2TWN, as Assistant Net Manager of SDN.

Latest Call Signs

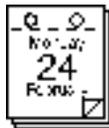
As of January 20, 1997, the following call signs have been allocated in the "2" call district:

Group A (Extra) AB2DA

Group B (Advanced) KG2JX

Group C (none left)

Group D (General/Tech/Novice) KC2AQR



Next Board Meeting

The next WECA board meeting will be on Monday, February 24, at 8 p.m. at the EOC (148 Martine Avenue) in White Plains, NY. Meetings are open to all WECA members.

RF Radiation and Electromagnetic Field Safety Part 4

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Cardiac Pacemakers and RF Safety

It is a widely held belief that cardiac pacemakers may be adversely affected in their function by exposure to electromagnetic fields. Amateurs with pacemakers may ask whether their operating might endanger themselves or visitors to their shacks who have a pacemaker. Because of this and similar concerns regarding other sources of electromagnetic fields, pacemaker manufacturers apply design methods that for the most part shield the pacemaker circuitry from even relatively high EM field strengths.

It is recommended that any amateur who has a pacemaker or is being considered for one discuss this matter with his or her physician. The physician will probably put the amateur into contact with the technical representative of the pacemaker manufacturer. These representatives are generally excellent resources and may have data from laboratory or "in the field" studies with pacemaker units of the type the amateur needs to know about.

One study examined the function of a modern (dual chamber) pacemaker in and around an Amateur Radio station. The pacemaker generator has circuits that receive and process electrical signals produced by the heart and also generate electrical signals that stimulate (pace) the heart. In one series of experiments the pacemaker was connected to a heart simulator. The system was placed on top of the cabinet of a 1-kW HF linear amplifier during SSB and CW operation. In addition, the system was placed in close proximity to several 1 to 5-W 2-meter

hand-held transceivers. The test pacemaker connected to the heart simulator was also placed on the ground 9 meters below and 5 meters in front of a three-element Yagi HF antenna. No interference with pacemaker function was observed in this experimental system.

Although the possibility of interference cannot be entirely ruled out by these few observations, these tests represent more severe exposure to EM fields than would ordinarily be encountered by an amateur with an average amount of common sense. Of course prudence dictates that amateurs with pacemakers using hand-held VHF transceivers keep the antenna as far from the site of the implanted pacemaker generator as possible and use the lowest transmitter output required for adequate communication. For high power HF transmission, the antenna should be as far from the

operating position as possible and all equipment should be properly grounded.

Low-Frequency Fields

Recently, much concern about EMR has focused on low-frequency energy rather than RF. Amateur Radio equipment can be a significant source of low-frequency magnetic fields, although there are many other sources of this kind of energy in the typical home. Magnetic fields can be measured relatively accurately with inexpensive 60-Hz dosimeters that are made by several manufacturers.

Table 9.1 shows typical magnetic field intensities of Amateur Radio equipment and various household items. Because these fields dissipate rapidly with distance, "prudent avoidance" would mean staying perhaps 12 to 18 inches away from most Amateur Radio equipment (and 24 inches from power supplies with 1-kW RF amplifiers) whenever the ac power is turned on. The old custom of leaning over a linear amplifier on a cold winter night to keep warm may not be the best idea!

There are currently no non-occupational US standards for exposure to low-frequency fields. However, some epidemiological evidence suggests that when the general level of 60-Hz fields exceeds 2 milligauss, there is an increased cancer risk in both domestic environments and industrial environments. Typical home environments (not close to appliances or power lines) are in the range of 0.1-0.5 milligauss.

Next Month: Determining RF Power Density

Table 9.1 --Typical 60-Hz Magnetic Fields Near Amateur Radio Equipment and AC-Powered Household Appliances.

Values are in milligauss.

Item	Field	Distance
Electric blanket	30-90	Surface
Microwave oven	10-100	Surface
	1-10	12 inches
IBM PC	5-10	Atop monitor
	0-1	15 inches from screen
Electric drill	500-2000	At handle
Hair Dryer	200-2000	At handle
HF transceiver	10-100	Atop cabinet
	1-15	15 inches from front
1-kW RF amplifier	80-1000	Atop cabinet
	1-25	15 inches from front

(Source: measurements made by members of the ARRL RF Safety Committee)

WECAFEST: March 23

Westchester Emergency
 Communications Association, Inc.
 P.O. Box 831
 Sleepy Hollow, NY 10591-0831
 RUSH DATED MATERIAL
 PLEASE DO NOT DELAY
 Reminder: Next meeting February 10

Colophon

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