



the RARA RAG

Published by
ROCHESTER AMATEUR RADIO ASSOCIATION, INC.

VOL. 45

APRIL 1993

No. 8

APRIL RaRa MEETING

3129 East Henrietta Road
(corner Lehigh Station)
Henrietta Fire Co. No. 1
Friday April 2, 1993
8:00 P.M.

JUST THE FAX, MAN!

RaRa Speaker of the Month Dave Schwittek, NW2T, will be our special guest speaker on Friday, April 2, 1993. Dave will be sharing the latest developments in the arena of WeFax and Multi-Fax with us including an live demonstration.

Dave has indicated he's got new software, he'll be officially introducing in Dayton, that will allow the user to read temperatures with a mouse. (I must admit, I am reluctant to believe that my pet mouse will talk to me if I promise to let him play with my computer!) I'm certain you will all be as anxious to see this technology at work.

Dave is looking forward to sharing his knowledge with you at the next meeting. I'm ready to learn more about this timely mode of amateur radio. This is the season of spring thaws, lake shore erosion and flooding. Learn how you can be ahead of the local weather person in predicting what will happen in your neighborhood.

See you there!

de Keith Freeberg, N2BEL

OLD-TIMER'S NIGHT

Mark your calendars! Old-Timer's Night is May 7, 1993 with another spectacular presentation by Bruce Kelley, W2ICE. Bruce has indicated that there could be an operational, old time, transmitter operating from the meeting place. Some logistics still need to be worked out. So, there are no absolute promises, but if I know Bruce, he'll do his darnedest to make it happen.

Watch this space for details direct from W2ICE's pen (or is it PC). And whatever you do, don't let Bruce know I let the cat out of the bag on his surprise.

de N2BEL

LICENSE EXAM TESTING

by Barbara, AA2CX, and, George, AA2FO
CONGRATULATIONS . . . to five members of the amateur radio community who either got their licenses, upgraded, or passed exam elements at the recent RaRa testing session of February 20. They are: Earl Walker, Larry Greene, Harold Kohl, Steven Oberhafer, and Derwood James.

Enjoy your new privileges.

Our next session will be on April 17th, at 111 Westfall Road starting at 9:00 a.m. Registration begins at 8:30 a.m.

See you there.

CALENDAR OF EVENTS — 1993

Parkinsons Walk	Sunday, May 16
Genesee Valley Park	noon - 3:00 p.m.
Tour de Cure	Saturday, June 5
American Diabetes	
Hamlin Beach Triathlon	Sunday, July 18
Walnut Hills Driving Competition	August 17-22
RE Ginna Pre-Drill	Wednesday, October 13
RE Ginna Drill	Wednesday, November 17
Stuart Horse Trials	Sunday, August 1

the **RaRa Rag**

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PRESIDENT'S CORNER

by Lloyd R. Caves, WB2EFU

The RaRa Winter Funfest was held this past February with about 45 people attending. It was great weather for a winter picnic as there was a lot of snow and yet it was mild and clear that day. Everyone had a good time and plenty to eat with the chili, chicken soup, hots, hamburgs and snacks. There were many prizes for the kids to win as they participated in the games that were played. This with all the sledding should have tired them all out for that evening. I hope that even more of you will be able to make the summer picnic in June and will join in the fun. Bring your whole family so that they can enjoy it also. The date to keep open for this is June 12.

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Amateur Radio News Service

During the past month the nominating committee has been busy putting together a list of names of fellow club members to run for the Officers and Board of Directors of RaRa for the 1993-94 season. Be sure to make the meeting to learn who will be running for office. Then you can spend the month of April thinking about anyone you would like to see run so that you can nominate them from the floor at the May meeting. Just be sure to contact that person in advance to see if they want to take on the job.

As the month of March comes to a close and April gets underway we start to see signs of spring (at least I hope that is the case as I am getting tired of the winter). One of the signs that I like and look forward to every year is that of the hamfests starting up. The first one of the season in this area is the Newark Hamfest held by the Drumblins Amateur Radio Club. This has always been a nice friendly hamfest that gives us a chance to get out and see our old friends from the neighboring Wayne County. If you attended Newark it should also get you in the right frame of mind to start thinking about the Rochester Hamfest in May. This is the largest hamfest around unless you call Dayton near by. I don't myself. This year Rochester should be larger and better than ever so keep May 21, 22, and 23 marked on your calendar. Don't only mark down the days of the Hamfest, but mark down the evenings also, and join us at the VIP dinner on Friday evening and the Banquet on Saturday evening. Remember that Grand Ole Ham and the Amateur of The Year will be receiving their award at the banquet. The VIP dinner as well as the banquet will give you a chance to talk to many of the ARRL officers that will be attending the Hamfest.

Regardless of whether you made the Newark Hamfest or not, I don't want to wait until the Rochester Hamfest to see everyone. So make it a point to come to the April RaRa meeting and I will see you there.

NATIONAL WEATHER SERVICE TRAINING SESSION

by Ed Holdsworth, N2EH

The National Weather Service will be conducting a class in severe weather watching on Saturday, April 17, 1993 at 111 Westfall Road from 9:00 a.m. to 12:00 noon. This class will present the training necessary to act as a Skywarn spotter during severe weather. If you have an interest in acting as a spotter during severe weather and are interested in becoming active in Skywarn, this training will present the necessary information. This training will be presented by Mr. Gerald English, KB2DVV, Meteorologist in Charge, National Weather Service Office, Rochester, NY.

I will also be presenting some information about the latest updates to equipment and services at 111 Westfall Road. This will be a very short informational part of the meeting with the Weather Spotter presentation being the main topic. If you would like more information on this program, refer to the article in the March 93 issue of the RaRa Rag. There is no need to sign up in advance, but come early, the capacity of the auditorium is limited.

Rochester HAMFEST

MAY 21, 22, 23, 1993

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APRIL CALENDAR

- 2 - RaRa Meeting - 8:00 p.m.
3129 East Henrietta Road
- 17 - RaRa VE Testing - 8:30 a.m.
111 Westfall Road
- 17 - Skywarn Training Session
111 Westfall Road - 9:00 a.m.

GROUNDING TECHNIQUES FOR RADIO INSTALLATIONS

There are three main reasons to ground radio equipment.

1. Safety grounding to protect operators from accidental electrical shock.
2. RF grounding to prevent spurious and harmonic radiation and to enhance antenna efficiency.
3. Lightning protection. Each of these require different grounding technique. A careful analysis of the ground methods used is required to determine if all three objectives are met. Safety grounding is in many ways the easiest criteria to meet. Simply bonding all equipment cabinets to the power company ground with conductors of low resistance and adequate current carrying capacity to blow the circuit breakers will meet safety requirements. Effective RF grounding is often much harder to achieve. The ground path must not offer any significant impedance at the frequencies of interest. Since the frequencies of interest are often octaves apart, this is challenging. The frequencies of interest are the fundamental frequency of the transmitter, the harmonic frequencies of the transmitter, and any spurious frequencies the transmitter may generate. The latter is usually the toughest. Grounding for lightning protection is difficult due both to the magnitudes of the voltages and currents involved and to the fact that the lightning waveform is a step function and has considerable RF energy. Probably the WORST problem one faces in designing an effective grounding system is the prevention of GROUND LOOPS. Ground loops will cause unintended currents to flow in circuitry, often with disastrous effects. Either damage or degraded operation will inevitably be the result of a ground loop. The best method of securing a good ground for a radio installation is to use a GROUND WINDOW. The ground window technique requires that every cable that enters or leaves the radio room pass through one small area where all ground connections are made. The power company ground must be bonded to the ground window and surge suppressors such as those mar-

keted by Lightning Protection Associates should be installed in series with the hot wire. Note that simple shunt protectors will not be sufficient to protect the equipment in the event of a direct lightning strike. Series protectors are designed to open the circuit under severe overload. All coaxial cables must have their shields attached to the ground window and have their inner conductors clamped with an arc cartridge designed to fail shorted. In addition the inner conductor should be fused in a manner that will open the line when the arc cartridge fails. Telephone cables must enter through the ground window and have their leads clamped with MOVs and arc cartridges that are designed to fail shorted. In addition all leads must be fused in a manner that will open the line when the arc cartridge fails. Each piece of equipment in the radio room must be attached to the ground window by a wide heavy strap installed so as to be as short and straight as possible. Neatness definitely does not count here. Don't "dress" the ground cable, make it short and direct. Do not "daisy chain" grounds. Make sure that the only path from one piece of equipment to another is via the ground window. This means that interconnecting shielded cables should go from the equipment out to the ground window, have the shield bonded to the ground window, then return to the next piece of equipment. This is the only sure way to prevent circulating groundcurrents. Now that every piece of equipment in the radio room is at the same potential as the ground window, the ground window must be brought to true earth ground. This is fairly easy for DC and low frequency AC, just make sure the cable is heavy enough to have the smallest possible voltage drop across it. For RF, inductance and resonance effects must be considered as well as skin effect. A wide flat copper strap that is routed as straight as possible to earth ground is preferred. For maximum lightning protection, the ground strap must never travel upward because the space charge will resist the current flow. Sharp bends will act as single turn inductances and should be avoided. Since a single ground cable will exhibit resonance at certain frequencies due to its length, several ground cables should be used with each a different length. The lengths should be chosen – such that a cable that is near a quarter wavelength at a given frequency will be paralleled by a cable that is near a half wavelength. In practice, several cables varying from the shortest possible length to twice the shortest length should be paralleled so that at least one will present a low impedance at any frequency. Do not coil the longer cables, instead fan them at the center point. The method used to route cables down the tower will effect the degree

of lightning protection achieved. If possible use a plumber's delight type of antenna that is dc grounded to the tower. Route the coax down the inside of the tower, and ground the shield of the coax to the tower at 6 points. This last will short out the single turn transformer formed by the tower and the shield of the cable. Unless this transformer is shorted, currents flowing in the tower to ground will induce currents in the shield of the coax. The true ground must be more than a single stake driven into the earth. If the tower is ground mounted, use the base of the tower as the center of the ground field, otherwise drive an eight foot ground rod to form the center point of the ground field. Run radials out from the center of the ground field to a buried loop connecting a series of ground rods separated from each other by no less than eight feet. A minimum of eight rods should be used. If possible, the radials should continue outward for one quarter wavelength at the lowest frequency of operation. If your tower is not ground mounted, bring its base ground back to the ground window using multiple lengths of cable as discussed above. Do not run a ground cable directly from the isolated tower to the true ground or a ground loop will surely be created that can allow damaging circulating currents to develop. This all sounds like a lot of work and expense, but field experience has proven that a system like the one described will withstand direct lightning hits without loss of equipment, air time, or lives.

by Gary Coffman, KE4ZV
via Ham News Outlet

WANTED: GOOD WOMAN. Must own a complete KW station and 100 foot tower with five band beam. Needs to cook, log and do 25 WPM. Send photo of tower. I.M. Solonely, WB2LFS, 555-1212.

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SPECIAL BULLETIN:

From The International Amateur Radio
Q-Signal Society Bulletin 0000.126
February 1993 Subject: NEW AMATEUR
RADIO DX Q-SIGNAL ADOPTED

Most DXers know the standard Q signals such as QSL, QSY and QRZ by rote. However, over the past several years, there has been an emergence of new definitions in use by the international DX community which have been causing considerable confusion, the IARQSS has adopted new definitions for some of these old Q-signals. You might want to keep this list handy to use during the next DX pile-up you're in.

QRP - RADIO POLICE – The meaning of this Q-signal has been changed to indicate a newly self-appointed license class called 'Radio Police'. QRPers believe they have a sacred duty to enforce law and order on the bands, especially in DX pile-ups.

QRZ - RE-TUNE ZERO BEAT – Precise frequency control is required of QRPers. When a DX station sends QRZ, all QRPers should immediately re-tune their transmitters Zero-beat on top of the DX station, and continue tuning as long as the DX station keeps sending QRZ.

QSL - SHOUT LOUDER – This instructs QRPers to increase modulation level to maximum and call again. DX stations often send QSL QRZ

sequence together, which means to Shout louder while Zero-beating on the DX frequency. Note: Not to be confused with PSE QSL, which means to QUICKLY SEND LOTS of money if you want a card back.

QRM - RADIO MASTER – Reserved for those QRP stations who have demonstrated the highest levels of QRZ and QSL proficiency (see QRZ, QSL above). These elite operators are elevated to Radio Master status, and are often referred to by the distinguished title of QRMers. QRMers tend to concentrate their efforts on major DXpeditions, but have also been known to frequent 75 meter phone on Saturday nights.

QSY - STILL YOUR – frequency acknowledges that it is still your frequency, and that you should continue to transmit. Sometimes used more formally as PSE QSY, indicating that the requesting station is very polite.

QFU - FREQUENCY UP – (sometimes shortened to just FU in pile-ups) Although is has been speculated that there are alternate meanings for this Q-signal, the most generally accepted definition is that the DX station is operating split, listening 'Frequency Up'. It is the standard response sent by a QRMers when asked to QSY. Can be emphasized by sending several FUs in a row in really big pile-ups.

So ... the next time you hear a QRMers on the DX frequency, don't bother asking him to QSY, because he will most likely just QSL, QRZ and tell you to QFU.

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THE RaRa RAG YEARS AGO —

by Ed Gable, K2MP

20 YEARS AGO – APRIL 1973:

This issue abounds with news of a terrible winter storm that hit on March 17th. It was a real test for the new RACES organization as well as just installed 28/88 repeater improvements at Kodak Office. Over 25 hams assisted with lakeshore evacuation and coordination efforts. From what was learned by this true to life exercise the 28/88 repeater went forward with plans for a single site with a duplexer. Jim Collinsworth, WB2EDT, reports that the auto-start RTTY network on 146.70 MHz, is working well. Active were WB2EDT, WA2SSU, W2EMX, K2YAH, WB2ZEA, K2LZG and K2QIV.

40 YEARS AGO – APRIL 1953:

Page one featured a flyer for the RaRa Western New York Hamfest. Programs featured films of the Gatti-Hallicrafters Expedition, a High Fidelity demonstration, DX Roundup and a code speed champion contest conducted by Pat,

W2CYG. Van, W2CR, just got a Collins Kw xmtr and Hamk, W2UTH, sports a shiney new NC-183D. The April meeting is Gadget night as well as election night where Bob Wetherald, W2CZT, is nominated for Prez. The Rochester Emergency Net (REN) under Linc Cundall, W2QY, will participate in a County exercise where the scenerio is a 40 kiloton atomic blast!!! (Who wants those good old days – Ed) You could buy a 1 Kw AM rig, 304TH's and 100TH's, for \$250 from W2BLP.

FCC EXAMS 2001?

Considering the general direction that Amateur Radio seems to be heading and the climate that exists at the ARRL and FCC, I propose the following to be used as the official examination form by the year 2001

FCC Examination Form For All Classes of Amateur??? Radio Operation

January 1, 2001

Pick one or more of the answers as appropriate.

- 1.) A "Ham" is:
 - A. A delectible dish served for Christmas or with eggs for breakfast.
 - B. An uplifting phrase found in Operations Manuals for Japanese Amateur equipment, meaning, "H*onorable*AM*erican", usually applied to the operators of said equipment.

- 2.) A "Rig" is:
 - A. A device used to dig wells, usually for water, but if you are lucky, perhaps for Oil.
 - B. A device used to send electrical signals around the world. Archaic definition "used to communicate with CW, RTTY, AM, or SSB". (See Glossary at bottom of page for more help.)

Note: Since communication has long since ceased to be an objective of Amateur Radio, we at the FCC will not consider either answer to be incorrect. This is a freebie, not a trick question.

3. An "Antenna" is:
 - A. A wire strung between the rafters in your attic.
 - B. A "flagpole" with a strange black box attached to the base.
 - C. A Large Array of tubing, wire and insulating material held from 50 to 200 feet in the air by a device called a "tower". Due to widespread ordinances, these are extremely rare, and found only in the remote corners of the desert Southwest.

- 4.) "TVI" is:
 - A. Any form of interference whatsoever that is blamed on the operation of an Amateur Radio station. This can occur whether the station is on-the-air or not.
 - B. An abbreviation for the Tennessee Valley Inquisition, a fierce battle for Tower rights that took place in the late 1990s.

- 5.) "Guy" is:
 - A. A person you meet on the street and ask about the time, as in "Hey Guy, what time is it"?
 - B. A wire used to hold up a tower in winds of 25 mph or more. Its use is considered to be optional by most Amateur Operators.

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6.) "Ground" is:

A. What a tower crases into when the winds reach 30 mph or more.

B. What keeps Japan from being Line of Sight from here in the good ole U.S. of A.!

7.) "Packet" is:

A. A grand experiment in digital communications that started in the early 1980s, but ground to a halt because of too much infighting among SYSOPS.

B. Something you put your letters into when you really want the message to get where it is supposed to go. Stamps are applied to the outside of this packet and in a few days it arrives at its destination. Just like Magic!

8.) A "computer" is:

A. A device that has lured potential Amateur Radio Operators away from the hobby by the thousands.

B. An enormous waste of time and energy, but, like women, "You can't live with them, ya can't live without them!"

9.) A "printer" is:

A. Someone who works for the newspaper.

B. A device attached to a computer to accurately translate the tones received from the sender into all the typos, mis-spellings and grammatical errors as they were originally entered by the operator.

10.) "Electronics" is:

A. A mystical art that no one understands anyway, so why try to define it?

B. All of the above

C. None of the above

Congratulations! If you gave any answer at all to 70% of the questions above, you are worthy to become an Amateur Radio Operator. Just fill out the form on the other side of this exam and send it in to the FCC offices shown at the bottom of the form.

Glossary:

Oh heck, it is too much trouble to define SSB, AM, CW, RTTY, etc. since these modes are absolutely obsolete anyway, and no one really cares.

Prepared for Amateur Radio by Jim Stanicek on New Years Eve, 1990, in the hopes that * C. None of the above * will be true by the year 2001! Happy New Year and best 73 from AG3Y, Jim - Hagerstown, Md. 21740

via Nittany Amateur Radio Club

PENETROX AND ANTENNA CORROSION

This corrosion inhibiting medium is used, or should be, when assembling beam antennas or making electrical connections that could corrode. It can be purchased at any Electrical Wholesaler and some Building Supply Houses. It comes in a plastic bottle and is enough to do one person a lifetime, so get together with your buddy and share. It is manufactured by: Ideal, Burndy, etc. and may have a name other than 'Penetrox'.

The old saying that 'some is good, so more must be better' is NOT true in this case. Penetrox is a moist paste and with time DOES dry out. If too much is initially applied, it now become a white/gray powdery layer, as it dries out, with VERY POOR electrical conducting qualities and hence a sudden change in antenna performance. Rain will moisten this white/gray cake and things may seem to be OK for a while only to wreak havoc at a crucial moment.

Now, for the proper application! Most of us use this medium when assembling beam antenna elements to prevent corrosion at the element joints. Clean the tubing, at the joint, inside the larger tube and outside the smaller tube, with coarse steel wool. Now apply a thin layer of Penetrox to both surfaces (a dowel is useful for both inside cleaning and Penetrox application).

Work this thin layer into the metal by use of steel wool and a bit of elbow grease. When done, use your finger to smooth the whole thing out and remove excess. Slide the tubes together and use a small sheet metal screw to lock the joint into place and make a good electrical connection.

This medium can also be used on coax connectors but again sparingly and work it in with an old toothbrush.

*VE7ECE & Burnaby Connection
in the TCA Magazine via The Groundwave*

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These fine folks turned out to enjoy a day of fellowship, fine food, activities for young and old and almost no talk about radios. Yeah, it is hard to get Hams to leave their favorite subject for even a few minutes. We all had fun. Keep the second Saturday in February free next year and join the family fun for young and old.

Let us know what you'd like too. Your comments are always appreciated. Call them in now, before that great idea slips away!

de N2BEL

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