

Conneaut Radio Club Net	147.390 FM	Sunday	7:30 PM
Radio Amateurs of Corry	147.090 FM	Thursday	8:00 PM
Ashtabula County ARC Net	146.715 FM	Wednesday	8:00 PM
Tri-State RACES Emergency Net	146.610 FM	Sunday	6:30 PM
ARES/Skywarn Net	146.610 FM	Sunday	9:00 PM
International Simplex Net	146.550 FM	Saturday	8:00 PM
The Aluminum Net	146.550 FM	Saturday	10:00 PM
2 Meter AM	144.450 AM	Monday	7:00 PM
6 Meter AM	50.5200 AM	Wednesday	7:00 PM
6 Meter SSB Net	50.1900 SSB	Sunday	7:00 PM
Lake Erie Emergency Net	29.0000 SSB	Sunday	8:00 PM
Novice-Tech Net	28.4000 SSB	Wednesday	8:30 PM
Radio Amateurs of Corry (HF)	28.3300 SSB	Tuesday	8:00 PM
Flintstone RTTY Net	28.280 RTTY	Saturday	8:30 PM
QCWA National Net	14.3470 SSB	Sunday	2000 UTC
Erie - Fort Pierce Connection	14.3400 SSB	Daily	8:00 AM
County Hunters Net	14.3360 SSB	Daily	Anytime
Mid CARS Net	7.2580 SSB	Daily	Anytime
East CARS Net	7.2560 SSB	Daily	Anytime
South CARS Net	7.2610 SSB	Daily	Anytime
Old Old Timers Club	7.2300 SSB	Thursday	2:00 PM
Rooster Net	3.9900 SSB	Daily	6:00 AM
QCWA Chapter 122 Net	3.9150 SSB	Sunday	9:30 AM
PA Emergency Management Net	3.9050 SSB	Sunday	9:00 AM
160 Meter Net	1.8930 SSB	Daily	7:00 PM

1995 RAE Christmas Party

When? Friday, December 1st.
Where? A Little Bit Of Country
What? Buffet -- Chicken, Pork Chops, Cod, ...
What else? BYOB
How Much? \$13.00 per person
Who? N3LPO, Sue (456-0500)



NAME _____ CALLSIGN _____
HOW MANY? _____ AMOUNT \$ _____

Money must be received by November 20.



THE OFFICIAL JOURNAL OF THE RADIO ASSOCIATION OF ERIE

QWA-RAE

IN THIS ISSUE...

The President's Corner
ARRL/VEC Report
Minutes from Sept. Meeting
Contesting
Public Service
ARES/Skywarn
Classifieds
and more....

OCTOBER 1995

PA QSO PARTY

Participate and help the RAE WIN!

October 14-15

Radio Association of Erie

Post Office Box 844
Erie, PA 16512
ADDRESS CORRECTION REQUESTED



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Robert L. Schwimmer N3PAW
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Erie, PA 16509-3603

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Presidents Corner

Well I hope everyone is all rested up from our long and enjoyable Hamfest weekend. I would like to say thank you to all the fine people who came out to help setup and to work the Hamfest as well as to clean up after. Also a big THANK YOU to Debbie and Chris for the great dinner at the Best Western.

Now I would like to let you know about the Christmas Party. It will be held on Friday, December 1st at A Little Bit Of Country. It will be BYOB. Pop will be on hand. It will be a

VE Report

Submitted by W3CG, Norma Vanderhoff, ARRL VE Liaison

FCC Form 610-B is the application form presently available for use by groups of individuals who apply for a new club license, or for modifying an existing club, military recreation or RACES station license. The color of this form is white.

FCC Form 610-R (color unknown) will be a computer generated short form variant of the 610 form and will only be used for license renewals.

Beginning in September, this form is expected to be automatically generated by the FCC and mailed directly to licensees whose amateur operator primary station license are due to expire in 90 days.

As yet, this has not happened, so if your license is due to expire in 60 days or less, renewals will continue to be accepted by the FCC, using the standard 610 form.

The 610-V (color unknown) will be the form for applying to the FCC for a vanity call sign and as yet, this has not been released. Cost will be \$30 for a 10 year period when it does become available.



At the September 2nd test session, Debra Robson N3TIL upgraded to General Class, and two who passed Technician Class and by now will have received their first license, are Ted Quirk of Conneaut, Ohio and Donald Van Atten of Lake City. A number also gained partial upgrades.

At the September 9th RAE Hamfest test session, 19 tested and many partial

buffet which will include Baked Chicken, Stuffed Pork Chops, Baked Cod, Salad, Mashed Potatoes, Vegetables, Dinner Rolls, and Sherbet, Coffee, Tea, and Pop. The cost will be \$13.00 a person. Money due by November 20th.

If any questions please call 456-0500 Sue N3LPO. Once again THANK YOU for all of your help.

73's

Sue

upgrades were obtained. Passing Amateur Extra was Russell Webster N8MGG of Chardon, Ohio and new Technician licensees were Patricia DiPetta of Cochranton, PA. Evan Howe of Jefferson, Ohio and Raymond Kuzmich of Titusville, and Diana Miller of Fairview.

A total of 32 exams were given at the Hamfest test session. VEs who helped with this session were Dave Wellman WX3E, Tom Plotrowski AA3GJ, John Duda K3ED, Dick Waldinger N13Q, Dick Blasco KY3D, Bert Van Houten W3TPW, and your truly W3CG.

PUBLISHED MONTHLY BY THE RADIO ASSOCIATION OF ERIE

THE RADIO ASSOCIATION OF ERIE IS A NON-PROFIT CLUB SERVING THE TRI-STATE AREA BY PROVIDING EMERGENCY COMMUNICATIONS DURING A CIVIL DISASTER, AS WELL AS PROVIDING COMMUNICATION SUPPORT FOR PUBLIC SERVICE EVENTS. THE CLUB MEETS AT 7:00 THE FIRST THURSDAY OF EVERY MONTH AT THE RED CROSS CHAPTER HOUSE, 4961 PITTSBURGH AVENUE, ERIE, PA. FOR MEMBERSHIP INFORMATION CONTACT BOB SCHWIMMER, N3FAW AT 866-3027.

THIS NEWSLETTER IS EDITED BY DAVE ROSS, N3PYH. SUBMISSIONS ARE ACCEPTED AND ENCOURAGED. PLEASE MAKE ALL SUBMISSIONS VIA A 5 1/4" OR 3 1/2" PC COMPATIBLE FLOPPY, IF POSSIBLE. TYPEWRITTEN SUBMISSIONS WILL BE ACCEPTED IF PC DISKS ARE NOT AVAILABLE. FOR INFORMATION CALL 454-5407 EVENINGS OR WRITE TO:

DAVE ROSS
N3PYH
639 EAST 29TH ST.
ERIE, PA 16504-1208

OR N3PYH@AOL.COM

THIS IS YOUR NEWSLETTER. PLEASE CONTRIBUTE!

CLASSIFIEDS

PACKET STATION

TNC, MFJ 1270C TNC-2 Controller with MFJ software and interface cable
DUAL BAND HT, Yaesu FT470 with PA-6 mobile adapter and 12 volt gel cell

COMPUTER, Packard-Bell 8088-XT Clone, with 5 1/4" floppy, 30 meg hard drive, Ad-Lib compatible sound card, 640k ram, CGA monitor (switchable between green and color)

QUAD ANTENNA, 5 element home brew (QST Jan 95) \$400 for all, WILL SELL SEPARATELY
Jerry Seidl, AA3II, 454-5619

Tower - tapered - 40 feet
Base section for above - 3 feet
Good Condition - \$50.00
Frank N3RVC 838-3207

Power Supply - 12 Amp
Re-Conditioned - \$40.00
Frank N3RVC 838-3207

Hardline - 60' - 75 ohm - New
with ZD Engineering Transformers
for 2 meters and up - New - \$60.00
Frank N3RVC 838-3207

QUA-RAE

ADVERTISING RATES

ONE-EIGHTH PAGE - \$25.00/YEAR

ONE-QTR PAGE - \$50.00/YEAR

ONE-HALF PAGE - \$85.00/YEAR

WANTED: Used Speaker Mike
for Allinco, Midland, etc. for 2 Meter HT.
Cathy Bergkessel N3TUE 871-7778 (leave message)

Now accepting your classified advertisement.
Free to RAE member, \$2.00 per month to non-members.

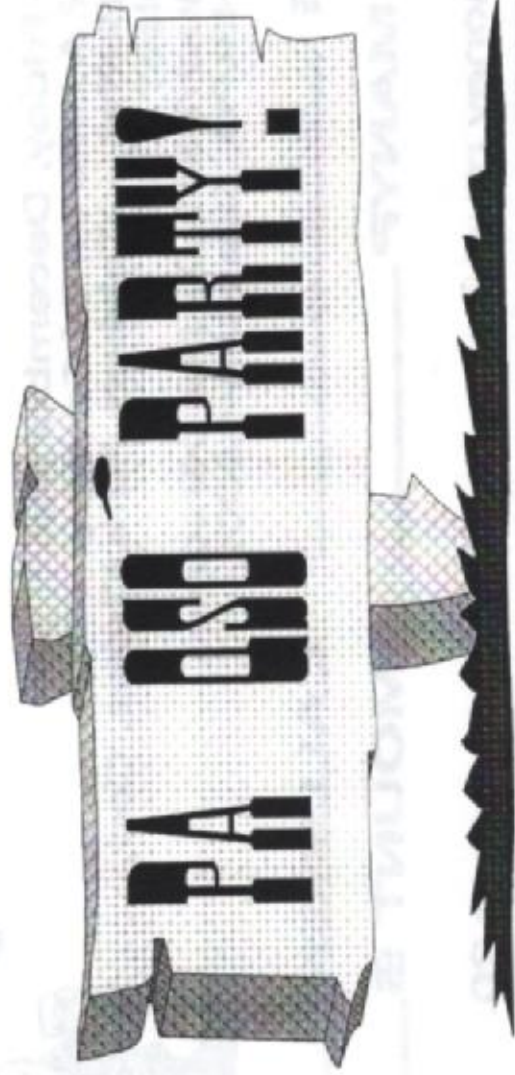
Drop a card with your classified to

Dave Ross N3PYH
639 East 29th Street
Erie, PA 16504-1208

Announcing:

The Annual ARES meeting will be Thursday, October 19 at 7:00. Location will be at the Hamot Auditorium. An updated telephone tree will be available, and ARES Photo IDs will be taken for those ARES members who do not yet have one.

An exciting program is planned, so all ARES members and potential ARES members mark you calendar now for this important meeting.



OCTOBER 1995 Notes: SE = Special Event, HF = Hamfest, TST = Contest, QP = QSO Party

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1 RSCB 21/28 MHz TST	2	3	4	5 RAE MEETING	6	7 Native American Day, Custer SD SE California QP Tennessee QP ARRL EME TST
8 California QP Tennessee QP ARRL EME TST	9	10	11 YL Annet, Party CW	12 YL Annet, Party CW	13 YL Annet, Party CW	14 PA OSO PARTY
15 PA OSO PARTY	16	17	18	19	20	21 Nowhere, KS SE Kinky England SE SET (Simulated Emergency Test) Illinois QP Texas QP Seneca (PA) Auction/Hamfest
22 Venezuela SE Kinky England SE	23	24	25 YL Annet, Party PHONE	26 YL Annet, Party PHONE	27 Belgium SE YL Annet, Party PHONE	28 Media, PA SE CQ WW DX TST
29 CQ WW DX TST	30	31 Transylvania SE				



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Art Paavola, D.V.M.

Tom McClain, D.V.M.

Jeff Paavola, D.V.M.

Minutes

Radio Association of Erie

Membership Meeting

September 7, 1995

N3LPO Sue, President, Called the meeting to order at 7:30 p.m. Visitors welcomed were N3WAH Aaron Robson, 13 year old student at Fairview, KB3NR Bud Wilson, past president of the R.A.E., now of Ocala, Florida, and K3QJE Frank Bogacki, Gannon University Professor in Electrical Engineering.

N3TTL Debi received a hardy applause for recently upgrading to General.

WB3EZY Red made a motion to accept the minutes of the July meeting as printed in the QUA-RAE and was seconded by KB3AAW Rich.

KB3ALT Karen, Treasurer, itemized the treasury inflow/outflow for August.

N3BZL Cliff, Chairman of the Board, gave a quick reminder that the deadline for submitting nominations is September 15th. W3JOV Evelyn and W3FIQ Sam distributed sign-up sheets for anyone considering an office for 1996.

N3FAW Bob, Membership Committee Chairman, submitted a written report of 191 Full members, 35 associate members, and 26 lifetime members, for a grand total of 252.

N3PYH Dave, Editor, thanked W3BBO Bob and KB3A Chris for submitting excellent educational reports in the QUA-RAE. Due to computer gremlins, not everyone received a July newsletter, but extra copies were available to hand out.

N3NTJ Matt, Special Events Chairman, listed Sunday, October 1st for the Crop Walk and Sunday, October 7th for the Memory Walk. Help is needed and would be genuinely appreciated.

KB3A Chris kicked off the PA QSO Party with 45 attending the dinner/symposium. The October meeting will be the big push to bring together the club spirit and instruction on how to contest in the QSO Party to be held the second Saturday and Sunday in October. Entry sheets and logs furnished by Sponsor, Doug Maddox. W3HDDH will be distributed at the October meeting.

W3GZO Dick Educational Chairman, announced that classes are now set for every Monday and Wednesday beginning September 25th through November 22. Thanks to N3LPO Sue and N3LKW Sandy for distributing flyers to schools. An instructors meeting is scheduled for Wednesday, September 20th at Central School at 7 p.m. A stack of flyers at the entrance was available for any of the club members to distribute.

K3GYD Don, Elmer Chairman, would like some of the QCWA members to assist in ham classes this fall. Give Don a call at 456-3042.

W3CG Norma, V.E., announced Saturday, October 7 exams at the Villa at 9 a.m. N3NTJ Matt also announced exams on Saturday, October 21 at Zurr's Science Center at 12:30 p.m. You are welcome to contact both Norma and Matt for details.

N3LPO Sue reminded everyone that the quilt raffle will be held at the Christmas Party on December 1st. There were only 75 tickets printed and many were sold at the Hamfest at \$2 each. The quilt is handmade by our Cookie Gal, Barb, and was on display at the Hamfest. (I'd sure like to win this one!)

N3HPR Tom, ARES Coordinator, has scheduled the annual meeting at Hamot Hospital Auditorium on October 19th at 7 p.m. prompt. An updated telephone tree will be distributed. Photo IDs number over 100 and are deemed mandatory by EMS for passage into any disaster area. Beaver County EMS director is a dynamic speaker and will present a slide program of the 427 crash, followed by other EMS speakers from Erie County, the Red Cross, and the Western PA Section Emergency Manager, N3LLR. Tom stated that it will be a fast moving program ending about 9:30 p.m.

N3HPR Tom announced this year's simulated emergency test is scheduled for November 11th in conjunction with western PA and NY, utilizing HF, Packet, 2 meters, etc. Of the 12 western PA counties participating last year, Erie County ranked #1. Fayette County came in a distant second. Of the 54 sections in the U.S., Erie County placed 10th.

N3HPR Tom presented an in depth study of Hamfest activities, personnel, and projections. Hourly printed schedules were distributed to everyone. A few interesting highlights were: a 3:30 a.m. breakfast; prizes awarded every 15 minutes; parking for up to 2,000 vehicles; and Hamfest '96 is already underway on September 7th, 1996. KB3A Chris was presented with the '96 Hamfest Chairman credentials. N3HPR Tom merited sincere applause for his exceptional dedication as Hamfest Chairman on behalf of the R.A.E over the past five years.

N3LPO Sue genuinely thanked Tom and Sandy, and all those who gave their time and efforts to make the '95 Hamfest a success.

W3U Hank presented a paper regarding the By-Laws Section A. 3 amendment deleting the word "operational" to read: Associate members shall have only social privileges. President N3LPO responded that the Board of Directors will include his paper on their agenda on September 26th.

KB2OUA Tom won the 50/50.

KB3AOL Mike made the motion to adjourn, seconded by N3NTJ at 8:30 p.m.

Respectfully submitted, Evelyn Baker, W3JOV, Secretary

Contests

CONTESTING - PA QSO PARTY STYLE Part 4

by Chris Robson KB3A

For the final installment for the Pa QSO Party contest column, I would like to discuss the paper work end of the contest and the most enjoyable time of the contest the last contact at 22:00Z on Sunday. This is the time when you kick back and grab a "cold one" or call your ham friends and compare scores and war stories. This is also the time to pat yourself on the back for doing better than last year or beating yourself up for doing worse than last year, but that is up to you!!!

For most of the operators that are using computer logging, this is the time when you make sure your printer is plugged in to the computer and start the post logging programs to start printing the log sheets and the summary sheets to total up your score. One of the common mistakes in logging on computer is mistyped call signs. The computer doesn't care what the call is, and will consider whatever you type is a call and you could possibly have a dupe and not realize it. A good example is working mobile stations and adding "fm" to the call and working the same station in the same location only without the suffix. This is a common error and leads to duplicate contacts which the computer doesn't catch. It's always a good idea to scan your "Printed" log, because sometimes things look different in printed form and errors can be caught before a log is submitted and saving the embarrassment of having your score lowered by the log checkers.

Another common mistake is entering the wrong section/county. This is common with Delaware county and the state of Delaware, since both are 3-land call signs. Most computer programs have a unique entry for this condition, but under contesting pressures, an operator can forget to get this straight. Another section problem is Louisiana and Los Angeles both are abbreviated as La, and with call that can be anywhere now, you must know your propagation or ask to confirm.

Doing Summary Sheets are the best part of the contest. This is where you find out how you ended up for the effort and also see how many counties and sections you worked during the contest. No one has yet had a clean sweep of all the sections and counties even though some have come close. This is where you also find out which counties are the "rare" ones, because it is the ones you didn't work! Anyone that has worked from a "rare" Pa county can understand the excitement heard on the other end when you give them the one they didn't get last year. This is a good

time to see when you worked the more rare counties, did you get them late or did you pick them up early in the contest, your log can reveal this info. When calculating your score, did you remember to add WPa and EPa sections in your multiplier list? This is one of the most common mistakes in calculating a score and it's great to find out how much your score goes up just by adding two additional multipliers. Your Class that you mark will determine the area and the competition level you are competing in, be careful you are entering the right class or you might be disappointed when the results come in February. Another thing to remember in the summary sheet is the special event call of W3YA (Nittany A.R.C. station) bonus points. These 200 points per QSO add up and can put your score into an higher category.

It is recommended that all entries use the "Official Summary and Score Sheet" supplied by the N.A.R.C. and there will be copies at the October meeting of the R.A.E.

Mailing your log is the single most important effort next to the contest itself. The deadline for entries is November 15, 1995. With the computerized logs this is normally no problem, but if you are doing your logs long hand (yes, they're accepted too!!) it takes time to dupe out calls and clean up the coffee stains on the log sheets. With the

Summary Sheet packet there are log sheets that can be copied and used for the guys logging manually. Also a few of the computer types can give you a hand with duping out your log also since most operators that are computer logging had their logs and summary sheet done an hour after the contest, so they have all kinds of free time to enter your manual logs for you.

Well, that about does it for the Contest Column- Pa QSO Party Style (if I don't stop I will have nothing to talk about for the October Meeting!). Just remember to schedule October 14 & 15 for the Pa QSO Party and nothing else, cancel all other activities and plans. And as we have said in the past, even Death is no excuse to miss the Pa QSO Party. We will prop you up in the corner and let you be the Control Op for someone else! So I hope to see the R.A.E. Wave sweep the QSO Party and show them Tom Ridge isn't the only one coming out of Northwestern PA!!

See you at the Party!!

The SR III is a bulky (4" x 10" x 12") portable radio which can be run off 120V AC or 6 "D" batteries, providing over 400 hours of battery life. This radio has become popular among the DX community for its exceptional performance.

It costs between thirty and sixty dollars in the US, and may be found at many discount outlets. It can be obtained from Bennett Brothers (Order #R3116) at 1-800-621-2626 or 1-800-631-3838, or from Best Products (Order # 140457) at 1-800-950-2398.

If you don't have a Superadio, some important things to seek out in a receiver are:

- External antenna connections. These make it easier to use a better antenna than the one supplied with the radio.
- High selectivity. This refers to the receiver's ability to reject strong signals on adjacent frequencies, and is more important to good reception than is sensitivity, since a good antenna will provide more-than-adequate signal strengths.
- Digital frequency display. While the circuitry involved can add to the level of internal electronic noise in the radio, digital display makes it possible to more easily determine what station is being heard.

IV. ANTENNAS

For mediumwave reception, most receivers have a short internal ferrite rod. This will provide acceptable signals for high-powered distant stations. Ferrite rods are quite directional, and the radio can thus be turned to null out strong interfering signals, or to improve reception of the desired signal.

For more advanced DX'ing, external antennas offer certain advantages. The most common external antenna is a simple random wire, 15m (50 feet) or more run out the window and then as high as possible (up in a tree, for example). The wire can be connected to the external antenna terminal. If none exists, you can open up the radio and wrap the wire a few turns around the ferrite rod inside. It is also possible, although less desirable, to simply wrap the wire around the entire radio. If the radio has a terminal marked "ground" or "GND," another wire can be run from this terminal to a copper rod driven a meter/a few feet into the earth.

One problem with a random wire antenna for mediumwave work is it's inability to reject strong local signals. Most receivers today lack the dynamic range to effectively deal with the extremely strong signals from a local mediumwave broadcaster as picked up by a random wire antenna. Thus, some sort of tuned antenna is best for all but the most isolated, rural locations.

The most popular antenna for mediumwave DX today is called a 'loop' antenna, and can be either of two types: ferrite rod or air-core wound wire loop. These antennas are small, 25-100 cm (1-3 feet) in diameter, and sit on the DXers desk or shack table where they can be easily turned by hand for optimum peak or null of a signal. Each design works with a tuned circuit before feeding the signal into your receiver, and usually this circuit includes a small powered amplifier. Generally speaking, the longer the ferrite rod, or the larger the diameter of the aircore loop, (to a point), the sharper the null of the antenna. 45 to 55 cm (18 to 22 inches) would be optimum for a ferrite rod antenna.

Air-core loops need to be made by hand, as there are none on the market. Ferrite loops, however, are available commercially from at least two manufacturers: Palomar Engineers and Radio West. Unfortunately, these two antennas do not have very long ferrite elements; and reviews of their performance in the mediumwave press tends to be mixed. Ideally, one would build their own antenna, or try to find either a used, older Radio West loop or Space Magnet antenna, both pre-1980. Plans for building all sorts of mediumwave loop antennas are available through National Radio Club publications. The address is found later in this FAQ.

A more advanced antenna is the "beverage" antenna. This is a length of wire 300 m (1000 feet) or more, with extremely high gain and narrow-beam directional characteristics. It is usually, but not always, terminated at the far end with a 450 ohm resistor connected to a metal stake driven into the ground. It should be pointed in the direction of the desired station. The beverage antenna can, under good conditions, be used for transatlantic and transpacific DX.

For VHF-FM, the important factor is height. The higher one can place an antenna, the better reception will be. A multielement Yagi antenna, which can be found in Radio Shack or similar stores, will often produce excellent reception. Since a yagi is quite directional, the use of a rotor is essential for reception of stations in different directions.

NEXT MONTH:
What's out there to listen to?



By Scott Fybush and Earl Higgins

One of the easiest parts of the radio spectrum to explore are the broadcastbands. This posting will attempt to offer some hints to make your exploration of the mediumwave and VHF-FM bands more enjoyable.

1. WHAT ARE THE AM/FM BROADCAST BANDS?

The mediumwave (commonly referred to as AM) broadcast band currently extends from 525 to 1605 kilohertz. Channels are spaced in even 10 kHz increments,i.e.: 530, 540, 550, ... , 1600 kHz in the United States and Canada.Elsewhere, channels are spaced in 9 kHz increments, i.e.: 531, 540, 549, etc.

In the United States, the band is being expanded to 1700 kHz. Stations which are currently experiencing high levels of interference will begin appearing on the 1610-1700 kHz frequencies sometime in late 1993 or 1994. They will simulcast the new frequencies with the old for a period of a few years,eventually dropping the 'old' frequency. This opening up of new channels presents some once-in a lifetime opportunities for the alert mediumwave DXer.

The VHF-FM broadcast band in the United States extends from 88 to 108 megahertz. Channels are assigned at 200 kHz increments, i.e.: 88.1, 88.3,88.5, ... , 107.9. The channels from 88.1 to 91.9 are reserved for noncommercial educational stations. Outside the United States and Canada,the boundaries and channel spacing vary. In Japan, the band starts at 76MHz. In Western Europe, the band generally runs from 88-108 MHz, but channels can be irregularly spaced, i.e.: 101.25 MHz.

II. SIGNAL PROPAGATION

The distant stations you are able to receive will depend largely upon signal propagation. This varies depending upon the time of day, the season, and other factors. For mediumwave, the single most important factor for good DX is the time of day. Medium wave signals almost always get absorbed by the D Layer of the ionosphere during daylight hours. As a result, all mediumwave signals received during midday hours will arrive by ground wave, making reception of signals over a few hundred km/miles away unusual in daylight.At night, however, the ionosphere reflects mediumwave signals, making it possible for signals to be heard at much greater distances, up to a few thousand km/miles, via 'skywave'. To a lesser extent, the period up to two hours after local sunrise, and two hours before local sunset, called "Critical Hours", have varying levels of skywave, and also can provide some very unusual reception opportunities for the mediumwave DXer. Reception also tends to be better in winter than in summer, due to lower levels of atmospheric noise and longer hours of darkness. In the United States, due to the large number of stations, many smaller mediumwave stations are required to sign off or

reduce power sharply at sunset so as to reduce interference to distant stations.

Whereas the mediumwave band can be counted on to provide distant reception with much dependability, this is not the case at all on the VHF-FM band.Under 'normal' conditions, VHF-FM signals generally carry no more than 150-250 km (100-150 miles), or 'line of sight', since the ionosphere generally does not reflect VHF-FM signals. VHF-FM transmitting antennas are thus usually located as high as possible. Tall towers, high buildings, and mountaintops are common VHF-FM transmitter sites.

However, under certain rare conditions, the atmosphere will even reflect VHF-FM signals, thus making it possible to receive these stations at quite long distances. There are two major forms this distant reception can take,the most common is Tropospheric Ducting, or tropo for short. Typically, this occurs when a warm air mass forms on top of a cooler mass closer to the ground. The area between these masses acts like a pipe, 'bending' the signals back to the earth well beyond the horizon. This reception is most common in local late spring and summer months, in the post-sunrise hours. It will enable the alert VHF-FM DXer to log stations up to 800 km (500 miles) away in optimum conditions.

The other relatively widespread form of VHF-FM DX is called Sporadic E, or E-skip, because it is the E Layer of the ionosphere which reflects the signals. Like the name implies, this form of propagation is very sporadic,yet very intense. When it's in, it is VERY strong. Stations from a relatively limited geographic area 1300-2000 km (800 to 1200 miles) away will suddenly boom in, strong, often in stereo but quite fadey, even overpowering semilocals in many cases. It will start at the bottom of the VHF-FM Band (actually TV channels 2-6 first) and work its way up in frequency. The highest frequency at which signals are reflected by the ionosphere is called the Maximum Usable Frequency (MUF), just as it is in shortwave, and it can occasionally surpass the top of the VHF-FM dial in an unusually good opening.

III. RECEIVERS

Almost any radio is capable of some broadcast-band DXing, especially long-distance mediumwave reception. However, most recent radios, even those designed for quality shortwave reception, do not have outstanding broadcast band reception. One exception is the General Electric Superadio III (Model7-2887.) The SR III is designed for optimum AM/FM broadcast performance, incorporating:

- * RF amplifiers on both bands
- * Ceramic filters and Automatic Frequency Control on FM
- * No PLLs or digital displays for less electronic noise
- * A 2-way speaker system with 1 watt of audio power

CONTEST ENTRIES BY ELECTRONIC MEANS

By Billy Lunt, KR1R The Wave of the Future
Contest Manager, ARRL

Are you using a computer and an online contest-logging program? If not, you surely should be! Not only do they make logging, duping and finding multipliers easier and faster, but they make it a snap to get your contest entry ready to submit! All you have to do is print out a summary sheet and copy the log file to a floppy diskette and mail them to the League. It can't get much simpler.

Not only does using computers make things easier for you, a large majority of the top-scoring stations are using some sort of on-line logging program. To finish in one of the top-ten spots in a contest you need all the allowable help you can get. Most of the readily available on-line contest logging software will interface your computer with your rig, digital-voice keyer and PacketCluster.

The ARRL has been accepting contest entries on disk for about two years. We accept disk entries in all ARRL contests, including VHF QSO Parties, the DX Contest, Field Day and even the 10-GHz Contest. In lieu of sending your disk files to HQ in the mail, you can upload your log file and summary sheet to the ARRL telephone bulletin board (203-665-0090). To make things easier and save on your phone bill, you can ARC, ZIP or PAK your files before uploading them. In addition to serving as a place for uploading your contest entries, the BBS has all kinds of interesting tidbits that you can download. The Contest Branch from time to time uploads high-claimed scores, top-ten boxes, contest schedules, etc. to the BBS. Check it regularly for up-to-date news.

When submitting your contest entry on diskette, there is no need to send printed log or dupe sheets. Just an official summary sheet (or reasonable facsimile) with a signed contest participation statement, along with the log file on disk, is required. The floppy disk must be IBM compatible, MS-DOS formatted, either 5.25 (360 k or 1.2 M) or 3.5 inch (720 k or 1.44 M). The log information must be in an ASCII file, follow the ARRL Suggested Standard File Format, and contain all log information (band, date, UTC time, call of station worked, complete exchanges sent and received, multipliers marked the first time worked) and QSO points). Check with HQ if you're not sure of the correct file format. Please put only one entry on a diskette; this minimizes the chances of files being overlooked or lost in the shuffle.

The 1991 ARRL International DX Contest

The Contest Branch took a look at WNE entries in this year's DX Contest (full results appear in October QST) and found some surprising facts about "computer contesting" and disk entries. We created a table from our databases showing the number of disk entries, number of entrants who used computer software to generate their logs, and the total number of entries from all entry categories. Table 1 shows

these figures.

Surprisingly, these figures show that over half of all entries in the CW contest used some sort of computer help in logging. Of the 922 CW entrants, 53% (487) of them used logging programs (such as CT, NA, etc). Of the 487 entrants who used computers for logging, 54% (265) of them sent disk files for entry in the CW contest. Especially in the multioperator classes, this really shows that computers have become essential in today's well-equipped contest station.

We took the analysis a bit farther and looked at the more serious operators in the contest. We figured that if someone scored over a half-million points in the contest, they were pretty serious about it. So we filtered out those who scored under 500 k points- and boy, did the numbers change! See Table 2.

Of the 224 entrants who scored more than 500 k points in the CW contest, 86% (192) of them used logging software. Of those, 80% (154) of them sent disk files for entry in the CW contest. (Note that the singleband entries zeroed out when the filter was applied; 500 k points is a big score for a single-band entry!)

We did the same analyses for the phone contest (Tables 3 and 4) and found very similar results. The total number of entries increased slightly but the percentages stayed about the same. The figures show that slightly over half of all entries in the phone contest used some sort of computer help in logging. Of the 1055 phone entries, 53% (554) used on-line logging software. Of those, 45% (247) sent in disk files.

Once again, we filtered out those who scored under 500 k points, and again, the numbers changed drastically. Of the 223 entrants who scored more than 500 k points in the phone contest, 86% (192) used on-line logging software. Of those, 72% (139) sent in disk files.

Of the 447 entrants who scored more than 500 k points in the contest (both modes combined), 86% (384) of them used on-line logging software. Of the 384 entrants who used computers for logging, 76% (293) sent disk files for entry in the contest.

Conclusions

This is the second year that the ARRL has been accepting disk entries in this contest and we have made great progress in implementing the disk-entry program. We have gone from zero disk entries to 76% of those scoring more than 500 k points using computer logging programs in only two years.

The Contest Branch received a total of 629 disk entries in the 1991 APRIL International DX Contest (WNE, 512 entries; DX, 117 entries).

Log Checking

Don't be fooled by those who say that disk entries get checked more thoroughly than paper entries. If you are lucky enough to finish in one of the top spots in the contest, your log is going to be checked! The Contest Branch uses two computer programs in our log-checking procedures: one is for checking paper logs and the other is for checking the disk entries. Both of these programs perform the same functions. The only difference is the way the data is handled in the programs. In one of our programs, the data is entered manually; the other uses data files stored on disk. The end result is that errors are more easily found than by the old hand-checking method. The major benefit is time savings. The computer is quicker than the manual method, giving us more time to check logs of both types.

Summary

The time has come when computers and on-line contest-logging programs are a reality. Those not using these high-tech contest aids are going to be left in the dust by giant leaps and bounds. This new technology is here today; why not utilize it? If you are worried about your typing skills, don't worry. You will be surprised at the rate at which you can work stations and log them, even if you are a "hunt and peck" typist, not to mention how easy it is to get the

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Public Service

Volunteers Needed...

A very special thanks to the following hams who devoted a Sunday to help with the Eriesistible Marathon, held September 10. Every participant listed provided a valuable service, and contributed to furthering the reputation of the RAE as premier providers of emergency and public service communications.

Crop Walk

October 1, 1-3 PM, Presque Isle

Alzheimers Memory Walk/Run

October 7 9:30 - 12:00, Presque Isle

First Night Erie

December 31 (New Years Eve) 4 p.m - Midnight
Downtown Erie

To volunteer contact **Matt, N3NTJ**, at 864-3809, or after the Sunday 2 Meter Nets, or sign up at a RAE Club Meeting.
Or E-Mail **Matt** at **N3NTJ.MATT@AOL.COM** or **WB3DWL@KNIGHT.GANNON.EDU**

Matthew Steger, N3NTJ
Dave Ross, N3PYH
Dick Bainbridge, W3GZO
Robson, KB3A
Debi Robson, N3TIL
Aaron Robson, N3WAH
Dick Shreve, W3PIX
Dick Blasco, KY3D
Dick Waldinger, N13Q
Cathy Bergkessel, N3TUE
Ott Rinnongrua, N3PTA
Mike Mancuso, KB3AOL
Bert Van Houten, W3TPW
Don Volland, N3KEH
Cliff Craft, N3BZL
Dan Zimmerman, N3UMH
Clarence Moser, W3RLJ
Roger Filius, K8JEO
Don Kelly, KA3QDM Chris
Dan Miller, K3UFG
Bill Longstreth, KA3WDK
John Stager, W3ZBF
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Jim Green, N3MHP
Ian Enterline, N3UVV
Mat Rea, KD3XJ
Joe McLain, KB3ALU
Karen McLain, KB3ALT
Nick Cooling, N3TOZ
Tom Strike, KE3OE
Tom Goodman, N3TQT
Bob Schwimmer, N3FAW

ROGUE SUNSPOT MAY SIGNAL START OF CYCLE

(from The Arrl Letter, September 7, 1995)

Astronomers at the California Institute of Technology say they have identified the first new sunspot in the next sunspot cycle.

Scientists at Caltech's Big Bear Solar Observatory in Big Bear City, California, photographed the spot on August 12.

"This makes us happy," said Hal Zirin, professor of astrophysics at Caltech and director of the Big Bear facility. "The sun is a lot more interesting to study when things are going on."

Early in the 11-year sunspot cycle, sunspots appear rarely and at relatively high solar latitudes around 30 to 35 degrees then increase in frequency and appear at lower latitudes until they reach sunspot maximum, Caltech said. After this peak in activity, the number of sunspots slowly declines, and they appear even closer to the sun's equator until they reach a relatively quiet phase called sunspot minimum.

The sun has been in a quiet period through much of 1994 and this year, with a few spots showing up near the equator. The new sunspot found on August 12 appeared at a solar latitude of 21 degrees and its magnetic polarity is opposite to that seen over the last decade, a key to identifying it as "the manifestation" of the start of a new cycle, Caltech said.

Scientists at Caltech said they expected an early beginning to Cycle 23, but no this early. "Sunspots in the new cycle should rapidly become more common and reach a high level of activity in 1998 or 1999," Caltech said.