

WEARC WIRELESS

West Essex Amateur Radio Club

An ARRL Special Service Club

Home of W2EF

Volume III

April 1997

Message From the President

Greetings to all. The winter is now over, the sun spot cycle has passed its low point, and Field Day is approaching. WEARC continues to meet every Wednesday evening and is conducting VE sessions on the third Tuesdays of every month. I want to thank Ken Rosen, old WA2VCI, now W2KR, for his efforts in seeing that there are enough VEs to conduct these sessions each month. There has always been hams and prospective hams who come to these sessions to take the exams. Providing these VE sessions on a monthly schedule provides support to the ham community.

The club is now in the process of selecting candidates for next year's officers. WEARC is now completing its third full year of operations and we continue to hold our nucleus together as well as having new members join us. This year we are again going to conduct the Field Day operations at the Trotter Tract which is behind the Essex Fells Service Building. Our Chopper Brian Keegan, KF2HC, has started the preparations, and I expect we will have another successful weekend this June.

This past December we held our third annual holiday party at the club. Each year, it gets better. Everyone had a great time with excellent food and family camaraderie. I want to thank Joe Valley, WO2X, and Ann Keegan, KB2YTL, for coordinating the efforts and everyone who helped with the food and work contributed thus assuring another successful party.

This Spring the club is again supporting the Cherry Blossom Run and the March of Dimes Walkathon by providing the necessary communications. These events are both fun and provide a community service which hams are noted for. Volunteers for each of these events should contact Ray Linke, WA2JBZ, for details as to the dates and times.

Our Business Meeting in May will be attended by Frank Fallon, N2FF, the Director of the Hudson Division of the ARRL. Frank is interested in visiting all the clubs in the area and I am sure will provide us with insights into what is going on at the ARRL. Please make an effort to come out and attend this important meeting.

It's Not Just a Hobby.....

by Bob Marsh - KB2SGM

Amateur radio is a great hobby. I get to talk to people all over the world, tinker with my equipment, and generally have a good time. If you ask my wife, she'll probably tell you it's too much of a good thing. (I do spend a lot of time in the shack!) After a while, though, I felt like I wanted to use the skills I've learned for something a little more productive. Then I got involved with MARS.

For those of you who don't know, MARS is the "Military Affiliate Radio System". MARS is like a communications auxiliary that is attached to the Department of Defense. The Army, Air Force and Navy/Marine Corps all have their own MARS. I joined the Navy.

There is some misconception about what MARS does and the type of equipment you need. I have heard everything from MARS being a glorified mailman to requiring kilowatt amplifiers and phone patch equipment. We do handle personal messages and some stations provide phone patch service, but with the Internet, calling cards and such these kinds of activities are on the decline. The one exception is supporting ships at sea.

Inside:

Running the legal Limit	2
Fuses: not sexy, but don't ignore them ...	2
Field Day 1996	3
DX advantage	5
CS beacon in Alaska	5
Congratulations Brian	5

Reminder5

Because these technology changes, the MARS mission has changed quite a bit in the last few years. A major turning point was in 1996; the MARS "mission" shifted its focus from traffic handling to Emergency Communications. This shift was what got me involved.

Emergency Communications (ECOM) can be anything from sitting in the shack and checking into a net to being a member of an Auxiliary Radio Team (ART) in the field. The ART is a bit like a "mini field day", since the object is to go to an emergency site and setup HF/VHF Voice and Digital communications. This is done by a small group of hams who use all their technical and operating skills to get communications up and operational in the shortest possible time.

Once established, an ECOM net handles a variety of messages. Situation reports and updated information goes to the appropriate authorities. Personal "Health and Welfare" messages like "We're OK and will call as soon as possible" are also handled. These messages do a lot to alleviate the concerns of people who have family members in emergency areas.

During the blizzard last winter, ECOM nets were operating in 5 or 6 states, reporting on snowfall, electrical outages and anything else that was affected. Many stations stayed on the air for the entire time, providing detailed information on the progress of the storm. This was an actual "real world" application of MARS ECOM.

We're also trying to get more actively involved with local emergency organizations. Last year, one of our drills involved an "incident" at a local hospital. Navy MARS provided communications support for the local OEM, Police and Fire Departments. The drill was very successful and showed how various organizations can work together to provide a much higher level of support for the local community.

On top of all the "Community Support" and "Public Service", there's an often overlooked element of MARS activities. They're also lot's of fun! And, since you operate on military frequencies using established communications procedures, there's none of the "Good Buddy" syndrome so prevalent on SSB these days. Everyone there is working towards keeping MARS on a "Professional" level.

To find out more about MARS and how you can get involved, Email me at <bmarsh@hicom.net> or via packet at "KB2SGM@WA2JVM".

73 de Bob/KB2SGM (NNN0HHM)

Running the legal limit

by "Hick" Huckabee, AA5BU

Most of us Amateur Radio operators have at some time wished for a "full-powered rig." -- especially when we hear stations that don't hear us. Recently worked a station on the West Coast who had a four-element beam on an eighty-

foot tower, running legal-limit power. I was running 50 watts to a whip antenna on the roof of my RV. Afterward I thought, "We each receive good signal reports, yet he ran thirty times more power." I wondered if his investment was in the same proportion. And I wondered, "Is he having proportionally more fun?" Still, most of us would like to "fire a big gun."

Not long after W.W.II, when military surplus radio parts were cheap, I built a kilowatt CW transmitter for 40 and 20 meters. It was great! It blanked out all the radios and TVs for blocks, and neighbor's fluorescent lights blinked my Morse -- with their switches off!

My home required a new circuit to supply the rig. The input stage of my receiver burned up, and the odor of hot transformer varnish permeated the house. I even had to warn my small children, "Don't touch the window screens when Dad is on the radio." What fun!

But that old equipment wasn't efficient; it drew 700 watts on standby, and nearly 3,000 watts key-down! That wasn't bad in the winter, but in the summer's sweltering heat, my attitude quickly shifted to, "Who wants to nursemaid 3000 watts of heat through a hot Texas night?"

So I gave that rig to a young ham, and built a new one that ran 200 watts. Unfortunately, it and the receiver together consumed -- and dumped into my shack -- 200 watts key-up and 550 key-down. That's still far too much for a Texas summer.

Today I'm down to 50 watts, and seriously considering going QRP.

From the April 1996 issue of ARNS which printed from the February '96 Austin (Texan) ARC "AARC-Over" Mickey McInnis, KB5YAC, Editor.

Fuses: not sexy, but don't ignore them

by Ludwell Sibley, KB2BVN

In any radio, but especially an antique radio, the humble fuse demands your attention. Small fuse holders came on the market in the 1920s, when you could instantly send a 201A to Tube Heaven by hooking the battery to the A-battery terminals. RCA offered its UV-877 "protective tube," a light bulb that worked as a combination ballast and fuse.

A few early AC sets -- Freed-Eisemanns come to mind -- had 3-amp Edison screwbase fuses, to prevent damage from shorted capacitors and the like. Miniature fuses of the kind still used today -- 1-1/4 long, by 1/4 inch diameter -- appeared in the '30s and became common in the '40s.

Fuses come in not-so-obvious forms. In an AC-DC radio of 1939 vintage, the "pilot" section of the heater in the 35Z5 or 35W4 rectifier provides fuse action. Some TV sets had the 6-volt heater circuit wired via a "fuse link" of 28-gauge wire. The British 1941 field radio (Wireless Set No. 12) used 36-gauge copper wire as a 5-amp fuse, and included a quarter-pound roll of spare wire!

Overhead telephone cables that might contact high-voltage power lines are traditionally spliced through a short section of 26-gauge "fuse cable" before entering a building. Many radio restorers add a fuse to every set that they service. That fuse can prevent a shorted filter capacitor from burning out the power transformer that today costs \$65. You can add a fuse holder under the chassis of an antique set. Wire it in series with one side of the line cord.

You'll need a fuse rated between 1/2 and 3 amps. The standard quarter-inch-diameter fuse was the "3AG"; one maker still calls it that. It is also known as "AGC" (fast-blow) and "MDL" (slow blow). The slow-blow type withstands large surges without blowing. If the equipment manufacturer specifies a fuse type and rating, follow it. But old gear may have whatever size and type the repairman had on hand.

In a mixed box of fuses at the flea market, you will find styles that are useless today. Some relics of '50s TV sets have leads welded to their end caps, making them clumsy to replace. Some have odd diameters, like the 4AB and 5AG anti-vibration aircraft styles. If you find the SFE style -- automobile parts whose length varies with the current rating -- give them to your friend who restores old cars.

A small glass style, 5mm in diameter and 20mm long, is common in foreign made stereos. Those are worth keeping. Fuses in the 1/16 to 1 amp range are common in solid-state equipment. Transmitters and appliances may use fuses with higher ratings.

A fuse is also rated for the voltage it can clear upon blowing. The usual figure is 250 volts, but many glass fuses of 10 amps and up carry only a 32 volt rating. But all the ceramic bodied fuses through 20 amps are good for 250 volts.

To protect a variable autotransformer (Variac) you must prevent overcurrent in the wiper arm. So put a fast-blow fuse rated slightly above the current rating of the transformer in series with the wiper.

You can safely test a fuse with a digital multimeter. But some analog meters can blow a 1/32 amp fuse on the Rx1 range.

Always inspect fuses in newly acquired equipment. My Navy RAS receiver had been "up-fused" from 1 amp to 15 amps. I once inspected a newly bought Navy RBO before plugging it in -- fortunately. The fuseholder held a piece of brass rod! Not only that, some fool had wired one side of the AC line directly to the chassis!! Death, anyone?

Some equipment contains a fuse on each side of the line. If both have the same rating, they may blow together in an overload. To save money, make one fuse larger. You'll still protect the power transformer from an overload, and you'll still protect against line-to-ground shorts.

With an extractor-type fuse holder, the suave technician inserts the fuse with the amp rating visible outside the extractor -- to ease checking the fuse size later.

A slow-blow fuse will carry twice its rating for several seconds. A fast-blow fuse will carry 110 percent of its nominal current indefinitely, but open in one hour at 135 percent. But fuses can be sloppy. I tested five old 1-amp fuses from five different manufacturers by wiring them in series to a current source. One opened after several hours at 1.1 amps.

The next three passed 1.2 amps for two days before blowing. The last one handled 1.35 amps for a day, and took 1.8 amps for half an hour. It finally blew at 1.9 amps! Fuses aren't precision-calibrated devices.

On top of this, the transformer in that old radio you're trying to protect draws a large "magnetizing surge" at turn-on. The Radiotron Designer's Handbook says this surge can be 20 times the normal current, and last 8 milliseconds. That's more than a fast-blow fuse may be able to handle. So use a slow-blow fuse rated just above the normal current.

An open fuse may give hints. A melted link means a moderate overload. A black or silvery deposit inside the glass may indicate a severe overload or short circuit, though not always; of the five 1-amp fuses mildly blown in my test, one showed the blackened deposit.

Corrosion under the end caps can make old fuses weak, even if the link wire appears intact. And you don't need the mystery of a piece of gear remaining dead after you replace its fuse. So if corrosion is visible, test that old fuse before putting it in stock. Also, fuses handling heavy start-up loads can fail by metal fatigue.

The extractor in an old radio's fuse holder may be missing or broken. So always salvage the extractor from any piece of gear you junk, and keep those extractors in stock.

From the September 1996 issue of ARNS which printed the article from the May 1996 issue of "The Old Timer's Bulletin", the official journal of the Antique Wireless Association. Submitted to the ARNS Bulletin, by Steve, N2TKX, who also obtained permission for reuse in amateur Radio newsletters.

Field Day 1996

The 1996 Field Day was another WEARC success. Field Day is considered the most popular amateur radio event of the year. This event is an ARRL sponsored exercise which is known nationally as an emergency preparedness exercise. Although this event is considered an exercise, it is a lot of fun and provides hams of all ages to participate in a fun event. Field Day is as much fun as you can make it, and last year, the WEARC operation provided camaraderie and a fun time for all.

The organizer and leader of the WEARC Field Day event is the club Chief Operator, better know as Chopper. The Chopper is a yearly elected post in the club and last year we reelected Brian Keegan, KF2HC. Brian showed his excellent organization abilities and conducted another outstanding event. The planning started early in the year in the preparations for all the equipment and the definition of the various committees to make sure that all aspects of this event are properly planned and executed. There were committee chairpersons assigned and equipment responsibilities given to everyone. We were all involved in this event.

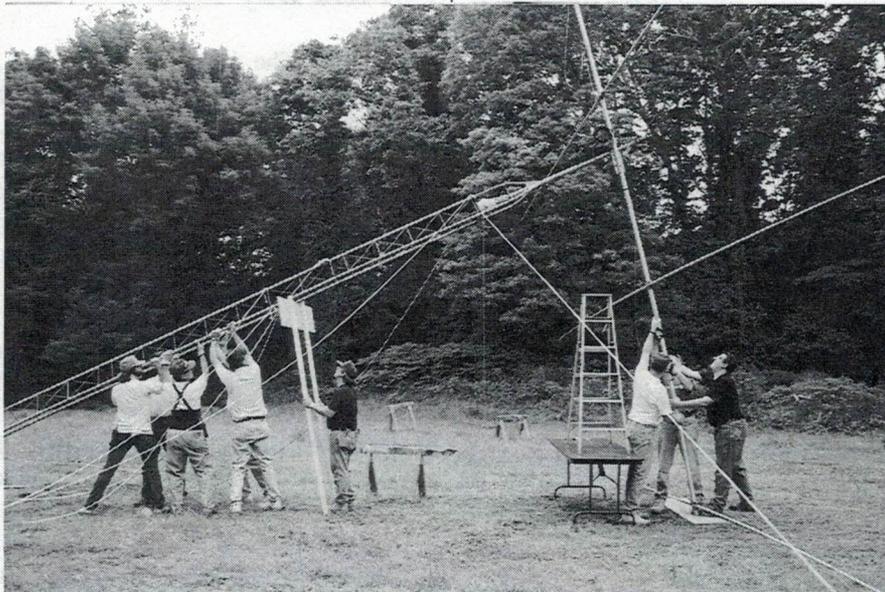
The actual Field Day event started Friday night with a family pot luck dinner at the club. Everyone brought a dish of food with the club supplying the refreshments. There was

plenty of food to go around for all to have several helpings and enough left over for supplying the operating teams with food for the rest of the weekend. I was assigned to supply the hot-dogs and hamburgers for the weekend, and even with all the leftovers from Friday night, we ran out of dogs and burgers. Ann Keegan, KB2YTL, was nice enough to run out and replenish the group with dogs and burgers. I doubt that I will be entrusted with the job of buying the hot-dogs and hamburgers for this years event.



The equipment for operations was well provided. We operated as class 2A, which is two HF radio stations and one VHF station all of which were powered by a gas driven generator. The HF antennas included two 80 meter dipoles and a 20 meter 4 element beam up about 30 feet on a tower. The VHF station antennas included both 2 meter and 6 meter beams up about 20 feet. We had a tent for each station and a kitchen fly setup for the food table. Some operators brought and set up their tents for sleeping while others used there vehicles for sleeping and shelter from the rain. Yes it rained this again year and we were forced to shut down operations while the thunder storms came through.

Set up of the antennas and equipment went smooth last year. The large tower and 20 meter beam were assembled and erected without a hitch. It was Brian's planning with the help of all who arrived early to get this task done efficiently. After the tower and beam and dipoles went up, the operating tents and radio equipment were set up. Everything was checked out and ready on time for the start of the actual Field Day exercise. We actually had time to cook up and eat some hot-dogs and hamburgers before the start of the exercise.



We operated the two HF stations with one being designated a CW station and the other a SSB station. The CW station, which utilized Mike Hartman's new rig, did very well.

The 20 meter beam allowed them to be "king of the hill" when ever they wanted. The SSB station did not do as well this time as it has in the past. We are still having a debate as to whether it was the conditions, the antenna, the mike, or the operator. The VHF tent was staffed pretty much by Drew Scelba, N2RFA. He held the fort down real good and brought in a lot of points for us. We need to work on getting more operators into the VHF tent this coming year. We were able to get all the bonus points with the

exception of the satellite contact. John Weinfeldt, now N2NO, set up the station to make the contact, but even though we were able to hear the satellite, we were unable to make the contact. We will try again this coming year. We were able to operate the stations for almost the total 24 hour period with the exception when we had to shut down due to the thunder storms and when the generator stopped due to low oil. The generator was a new one and burnt some oil. Fortunately it had a oil level switch which shut down the generator when a low oil level is detected. Once we realized this, we would make sure that the oil level was OK each time we refueled the generator.

All in all last years Field Day went very well. Our score ranked us up in the top quarter of all the participants which numbered 572 in the 2A category and in the top third of the NNJ Section. This coming year we have expectations of doing even better utilizing lessons learned from last year. Break down of the equipment and clean up activities is always a chore, but when we get enough to

help it goes fast. We were able to break down the setup, clean up the area and get home in record time last year. Ray Linke, WB2JGZ, had his son bring his Block and Tackle which was a great aid in gently lowering the tower and enabling us to dismantle the 20 meter beam.

I am looking forward to this years Field Day Event. Each year we learn more, and implement new techniques and procedures which will yield a better operating score and provide the club with more enjoyment. I only hope the weather will cooperate.

DX advantage

by Don Pearson,
W8IDM

I remember the late Orrie Baumgardner, W8BF, for the story he told me a few years ago about his six element twenty meter beam.

It seems one of Orrie's DX competitors wanted to know why DX stations in Asia always seemed to give Orrie a better signal report, despite Orrie's poorer DX location. When he paid Orrie a surprise visit one summer evening, he found freshly spread horse manure in the back yard. And he noticed that the beam, pointed at Asia, also pointed right over that part of the yard.

Face straight, Orrie told him he had been experimenting with ways to improve ground conductivity, and that the manure had improved his signal reports from Asia.

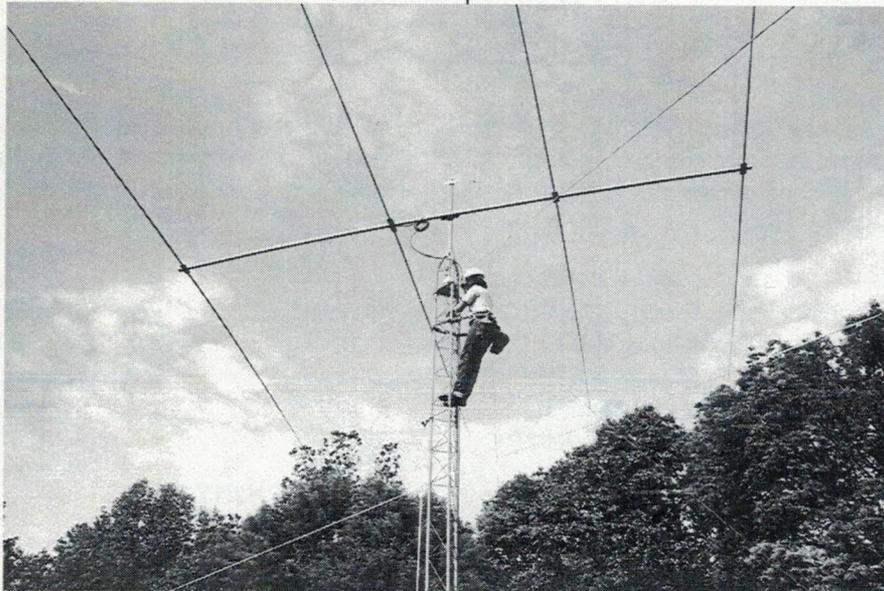
This apparently impressed the visitor. Although his lawn was in excellent condition, he called a landscaper in the next day to order horse manure.

From the April 1996 ARNS Newsletter which took an article from the Feb.-Mar. '96 West Park Radiops "W8VM Log" AF8C, Editor.

CS beacon in Alaska

Wondering if there's 80-meter propagation to Alaska? Just listen for the South Central Radio Club of Anchorage beacon on 3.575 Mhz CW. The beacon, whose callsign is KL7CC, runs 100 watts, but the club plans to QRO soon to 400 watts. The beacon transmits daily at 0100, 0400, 0700, 1600, and 1900 UTC. And please send your signal reports to Jim Wiley, KL7CC, 8023 East 11th Court, Anchorage, AK 99504.

From the April 1996 ARNS article from the December '95 West Park Radiops (Cleveland) "W8VM Log" Glen Williams, AF8C, Editor.



Congratulations Brian

Every year the ARRL conducts a contest in November called Sweepstakes. There are two different Sweepstakes run, one being CW only and the other being SSB only. These contests are among the most popular amongst the Ham community. The ARRL promotes these contests by providing pins for all those who make at least

100 contacts. I received a pin in the SSB contest for the past two years.

This past November, Brian Keegan, KF2HC, entered the CW contest under the QRP class and operated for a total of 17 hours over the weekend and was able to achieve a score of 31,200 points with 240 QSOs and contacting 65 ARRL sections. With this score, Brian was the highest score in the NNJ section and also was the highest QRP score in the Hudson Division. Brian won a ARRL November Sweepstakes Plaque as a result of his efforts. **Congratulations Brian.**

Reminder

Please make an effort to attend the May Business Meeting scheduled for 21 May 1997. Frank Fallon, N2FF, will be a guest at WEARC. Frank is the ARRL Hudson Division Director and is interested in coming to visit all the clubs in his area. It should be an interesting meeting.

West Essex Amateur Radio Club
An ARRL Special Service Club
WEARC Home of W2EF

WEARC meets on the second floor of the Essex Fells Service Building every Wednesday night at 7:30 PM September through June. Business meetings are conducted on the third Wednesday of each month starting at 8:00 PM. The Essex Fells Service Building is located across the street from the Essex County Grover Cleveland Park and next door to the Essex Fells Post Office. All hams and prospective hams are welcome.

CLUB OFFICERS

President	Bob Lange, N2NYR	Trustees:	Dave Whithead, N2JJK
Vice President	Ray Linke, WB2JGZ		Jim Plant, KB2LJG
Treasurer	Bob Marsh, KB2SGM		Ken Springarn, W2OI
Secretary	Stan Przybylski, KB2NQI		
Chopper	Brian Keegan, KF2HC		

Newsletter Editor Bob Lange, N2NYR

The West Essex Amateur Radio Club (WEARC) is a new club which supports all the amateur radio interests as well as supporting the local communities. All hams or would be hams are welcome.

WEARC WIRELESS

PO Box 54
Essex Fells, NJ
07021-0054