



SIGNAL

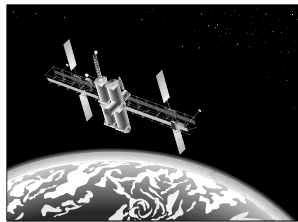
August 1994 Volume 3 Number 08

The President's Column

I hope everyone's having a good summer. It has been a great one. This newsletter and the next meeting will wrap up the summer activities. I hope to see some of you who have been away. Maybe you have some Ham stories to tell? As for myself I've been active on the Bands, and though conditions haven't been the greatest, I have now crossed the DXL in confirmed countries. That doesn't mean anything till I get the other 50. Then I'll have DXCC. I've also been pursuing the WAS award. I thought I had it made, but when I checked my cards I found I had not received one from Hawaii. If your interested in wallpaper (awards) there is a lot of it out there. And you don't have to work hundreds of stations to qualify. For example, WAC (worked all continents) takes only six contacts. Granted they need to be six widely spread out contacts. The WAS (worked all states) takes just 50. So if you need something on the walls to remind you of your accomplishments don't hesitate to apply for them. Many are free.
Stan KD1LE

At The Last Meeting

Miles Mann, WF1T came to our last meeting. He spoke about working The Russian MIR space station and the US space shuttles (SAREX). He showed a video of one of the "school to MIR" Q&A sessions he has organized. Having had numerous QSO's with the MIR cosmonauts over the years he had many stories to tell. He discussed the equipment used and the do's and don't's of making these contacts. Stan



This Months Speaker & Beyond

This month's speaker will be Shawn O'Donnell, K3HI. Shawn will talk about how your letters can make a difference when your State Rep votes on bills that effect Amateur Radio. He will talk about bills currently being proposed. Find out about the Do's and Don't's of getting your Congressmans or Senators attention.



Our own Bob Reif, W1XP, will be speaking at the RSGB (Radio Society of Great Britain) HF convention later this year about high frequency antennas. Bob has kindly volunteered to be the guest speaker at our September meeting and give us a sneak preview.

For October we're looking at Tom LaCoure, WV1T, Tom's presentation is "The Myths and Fallacies of SWR" Study up, he might give a test!

The Treasurer's Report

New Member:

We had 1 new member join us this past month; welcome to Don, W1FDW. Don comes from Townsend.

Treasurer's Report:

Four members renewed their memberships this month plus one new membership and a new ARRL membership processed through the club came close to offsetting the printing costs (no pun intended; they're



photocopied these days!) for the new advertising/membership flyer and for a disc of clip art for the newsletter editor to spruce up the monthly tome. (Now you all noticed the difference last month, didn't you!?)

As of the August Board meeting the fund balances were:

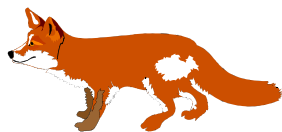
General Fund:	848.75
Education Fund:	240.00

Many thanks to the new ARRL member who processed his application through this office. Remember; the ARRL gives us a small rebate for every ARRL membership renewal sent via the club. New ARRL memberships sent through us result in a larger rebate. This is just one of the many ways the ARRL helps support the local clubs. I bring a supply of ARRL renewal forms to every meeting for anyone who might need one, so check and see if yours is due soon. 73 de Ralph KD1SM

Fox Hunting

July 17 We had our first NVARC fox hunt. The fox was well hidden in a pine grove. This was an on foot hunt. We had four hunters and all found the fox. We plan to participate in some of the other club hunts (see below), so we could use a few more people. For the auto hunts you need at least two per car to have a navigator and driver.

July 31 Fox Hunt Results
A grand time was had by all who joined in the fox hunt in Leominster on



July 31 sponsored by the Montachusett Amateur Radio Association. Five teams and twelve people participated.

The five teams represented three area clubs. Andy N1BHI and Ed N1NOM joined the hunt from the Minute Man Repeater Association. Stan KD1LE and Clint KD1OL represented NVARC. MARA had three teams; Charlie WN1E, Paul N1QDX with Erin, Craig, and Dennis; and Jeanine N1QIT and Ralph KD1SM.

The wily fox Tom K1JHC turned out to be better hidden than several of the teams were prepared for. Only two of the teams were able to locate Tom within the allotted time (either the hunt's allotted time or their own personal allotments—whichever came first!).

The first team to find the fox was N1BHI/N1NOM who brought a computer-connected Doppler system. With this system and a considerable dose of good luck for the day, Andy and Ed found Tom on his fourth transmission!

WN1E, using a homemade "broomstick beam" and an HT, found the fox midway through the hunt.

The hunters (those that didn't have to run off to other commitments) enjoyed dessert at Friendly's to conclude the day. Of particular interest was the demonstration of the Doppler system given by Andy and Ed.

The other hunters are already feverishly making modifications and improvements to their equipment to be ready for the next hunt!

MARA thanks everyone who came and hopes that you all had fun and learned a little something in the process. Everyone who participated will get a special MARA certificate. Please come again next time!

MARA will hold another fox hunt on Sunday, August 28. Meet at 1:00 at Water Tower Plaza in Leominster. Water Tower Plaza is on Route 12 just south of the intersection with route 2. The hunters should gather at the base of the water tower where the instructions for the event will be distributed. A potluck picnic is under consideration following this next hunt. Contact the MARA Fox Hunt Chairman Phil WA1DWS on 145.45 for further details. Ralph KD1SM

Board Meeting Notes

The August meeting covered quite a few subjects. More details on most can be found elsewhere in the newsletter. I'll mention the topics here; Septemberfest, Novice/Tech classes, General classes, speakers, and Hosstraders. There was also some discussion on the banking situation. The bank that has our club account was purchased by Shawmut. This affects the locations available to us and charges for doing business. Something you really cared about, right? Stan KD1LE



Tech Talk

What's so magic about 50 ohms?--- 75 ohms? How did those particular values happen to be chosen. Why not say 60 ohms? Well, it turns out that there really was a reason for choosing these values.

If we take the mathematical expression for loss in a transmission line and do some fancy math called differentiation we can arrive at a value of impedance where the loss is the lowest. Differentiation just finds the slope of the expression and we solve for the value that makes the slope zero. This would have to be the minimum or the maximum value. It's

either the lowest point on the curve or the highest. It enough to know that it is possible to do this, don't worry about the calculus.

Now we do the same operation but this time we find values of impedance for the highest power handling, the highest breakdown voltage, and the impedance that makes the highest impedance in a resonant transmission line circuit. Let's see what those impedance's are.

Highest power handling	30 ohms
Highest breakdown voltage	60 ohms
Minimum attenuation	77 ohms
Highest resonant impedance	133 ohms

To decide on a cable impedance for general use, we would choose some value between 30 ohms and 60 ohms. A mean value between the two is 42 ohms, but we realize that breakdown voltage also determines power handling. Leaning slightly in the direction of optimum breakdown voltage we choose 53 ohms which is what our fifty ohm RG-8 cable really is.

It's pretty obvious where the 75 ohm figure came from and why it was so widely used in receiver front ends. Your television set uses 75 ohms at the input to the front end, transformed from 300 by a balun just inside the antenna connection. Actually, RG-59 is 73 ohms but all cable varies slightly in manufacturing. We use nominal values of 50, 75, and 90.

For our video stuff, we would like a high value to cut down on the effects of capacity to ground. Practically, a co-ax of reasonable dimensions cannot be made much over 90 ohms. The center conductor becomes so small that it is mechanically unacceptable. We can get much higher values of impedance by using twin lead, but leakage and susceptibility to outside interference increases.

73, RUSS

Classes

We will be hosting another Novice/Tech license class this fall. Septemberfest has been where we get most of our students, but if you know of anyone looking for a class let them know. The location

for the class is not yet known. But it will most likely be at one of the two previous locations in Groton. There's no charge for the class, but

students will have to get the text (on their own or purchased through the club). Older versions of the



text have out-dated question pools since they were changed the end of last year.

Because of the large number of Novice/Techs in the club we were wondering if there was interest in a General License class or a study group? Let us know what would be helpful to you.

Stan

Trivia

We use callsigns in our Ham communications without thinking much about it. But there are callsigns issued for all ships and planes (Navy and otherwise) and many other facilities using the internationally allocated callsign groups assigned to the United States. Since the USS Constitution IX-21 is an active vessel it has a callsign. Anyone know it? The answer is NAPJ

Club Badges

How's your NVARC badge? Have you upgraded and changed your call? Just to update everyone, We decided at the Board Meeting that badges to new members should be free. Also, if you upgrade and get a new call we're happy for you. So a new badge then is also free. We're still going to be charging \$2 for replacement of lost badges.

Stan

ARRL NOTES

Representatives of the ARRL, DARC, JARL, and the IARU met to discuss the development of amateur radio in developing countries. They also covered the recent World Telecommunication Development Conference.

The ARRL Board held its 2nd meeting of 1994. At that meeting League awards were announced. N1MJM of Plymouth Ma. received the Hiram Percy Maxin Memorial Award.

Follow Up

The end of July I participated in the Joshua James Day at the Hull Life Saving Museum. It was very interesting that they actually put small boats out into the ocean there to save the lives of shipwrecked persons. The station is a lot like a fire house. Garage doors allow the boat to be rolled to the water. They had sleeping and eating facilities, the garage, and an observation point in the top of the building. As far as the Ham Radio Event went, there were start up problems. We did make some contacts...but there was a contest running and people were not in a chatty mood. It also pointed out that you should try a set up before the big public day and to keep it simple. Some of the simplest things (i.e. code prac-

tice oscillators) attracted most of the attention.
Stan

NVARC QSL Bureau

The "Buro" sent out a half pound of cards last month. With the contest this month I've piled up almost 100 already, so if enough people bring them in I'll send out another batch. Don't forget the QST mailing label.

Spent a few hours sorting incoming cards at the "W1QSL BUREAU". We sorted many boxes and mail bags. Hope it results in a few for each of you Dxers. While I was sorting one of the other sorters found only one card for me. That was a little disappointing and I had to leave before they finished. I was pleasantly surprised when a few days later I received an envelope from the W1QSL Bureau with 50 cards in it. Stan

Hosstraders

We're planning to have a club table for Hosstraders. Clint is making up the plan/procedures for it's operation. Save your "junk" and maybe you can trade it for \$\$\$.

Mark Your Calendar

-
- The Eastern States Exposition Sept. 16 - Oct. 2
- Framingham Flea Market Sept. 25
- Groton Septemberfest Sept. 10th.
- Boxboro Convention -- Oct. 1,2
- Hosstraders Oct. 9,10

Public Service Log



Not much activity here, we needed a rest after July anyway. In the Fall there will be JOTA for the Scouts and other opportunities for public service.

Field Trip

We're still planning to make a trip to the League. I have heard from a few people and if that's all that are interested we can go ahead and set a date that will be best for us. If your interested and haven't told us, speak up at the meeting or call me so the schedule date won't exclude you. Stan

From the Video Library

The Video Library now has six titles available to loan.

The Last Voice From Kuwait

The all China DF Competition

Your League at Work

Signal to Noise Story

Gonzaga Prep HS Radio Club Satellite communications

The New World of Amateur Radio

You can get them anytime you can catch me at home, and I will bring the available tapes to each meeting.
Stan

Resource List

Construction Earl Russell	448-5822
DX Bruce Blain	448-9438
NTS, MARS Stan Pozerski	433-5090
Races Ben Akins	433-9227



**Nashoba Valley
Amateur Radio Club**

PO Box # 900
Pepperell Mass 01463-0900

Pres.: Stan Pozerski, KD1LE
V Pres.: Scott Pyles, WX1J
Secretary: Duane Long, KD1JY
Treasurer: Ralph Swick, KD1SM
Editor: Stan Pozerski KD1LE
PIO: Earl Russell WR1Y

Meetings are held on the 3rd Thursday of the month - 7:30 p.m. - Pepperell VFW hall. Talk-in 146.490 simplex

This newsletter is published monthly. Submissions, corrections and inquiries should be directed to the newsletter editor. Articles and graphics in most IBM-PC formats are acceptable.

Packet address: PEPMBX (145.09 MHz)