



The RRRA "Intermod"



March 2010

Alan Beadle (KC2TND) has volunteered to produce and edit the RRRA Newsletter. It will usually be issued on a monthly basis from this point on, depending on whether Alan has time to produce it. The "Intermod" concerns all news related to the RRRA, as well as other local Rochester ham radio news.

The Sunday night routine is changing on the K2RRA 146.88 repeater. Starting March 7th, the AR Newline will be suspended on a temporary basis. Dwight (K2KWK) will continue the "Hilltop Bulletin" with the additional time, if needed.

The "Ray Pickens & Leon Ingrick Jr. Memorial Newbie Net" will start at 7:30PM and will continue until 8:45PM every Sunday night starting March 7th.

Also, net control station K2FX (Paul) is stepping down from his position starting March 7th. We are looking for a new NCS for the "Newbie Net". The NCS will be cycled every 6 months or so to avoid burnout and provide constant change. Brad (KB2CHY) will be acting as NCS until a replacement is found.

If you are listening to the "Newbie Net" on a scanner, you can participate in the net by sending questions, comments, etc to:
newbienet@frontier.com

If you are interested in just trying out as a net control (Newbies included!) You can volunteer by sending an email to our Net Manager (Brad, KB2CHY) at:
kb2chy@frontiernet.net

RRRA



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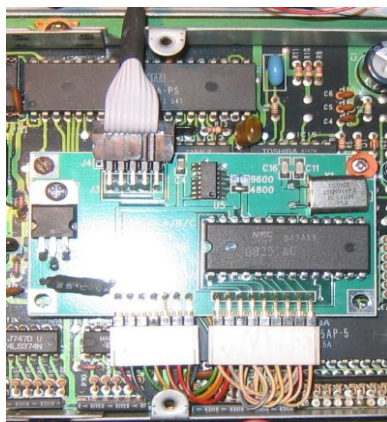
The next RRRA meeting will be on March 19th, the third Friday of the month. The meeting will be the **annual RRRA auction**. Ed Gable (K2MP) and Dick Goslee (KG2I) will be master of ceremonies and auctioneers/comedy team. In order to attend, you must have a valid RRRA membership. One guest is also allowed per each registered member. Membership fees are only \$10 plus a \$5 expense. As usual, the meeting will be at the Pittsford Town Hall, in the basement meeting room at 8:00 PM.



Kenwood TS-680s



If-232 C Interface



Kenwood IF-10B interface board (This may be a Piexx board But they look very similar)

Vintage radios of yesterday:



Kenwood TS-940SAT



Kenwood TS-440S



Kenwood TS-930



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Make that Kenwood Vintage Radio talk with your computer for a whole new experience. By Brad KB2CHY

So you think your old radio won't do the things some of the new ones do. Well it is a known fact that the older radios above and others are short on fancy menus and bells and whistles, but since when do you need them to be a Ham and make contacts.

I recently embarked upon a project to make my Kenwood's talk to my computer. After a small learning curve, I came across the proper combination of what was needed.

For the Kenwood 940SAT: This is a superb receiver easily repaired with tons of info on the web as well as a Yahoo group dedicated to keeping them on the air. One of these in real good shape can go for \$650 or more, but they can be had for less.

First thing for my project I needed was a IF-232C unit to make the computer understand "Kenwood Talk". This is just a converter needed to take the TTL level from the Kenwood and converts it to RS-232.

Second item is the IC-10B unit that was needed is a daughter board for the PLL board. The PLL board is real easy to get to.

The third thing was that I found the code for the EPROM needed for this venture. I needed to get an EPROM burner and a M2732-45 chip which I found two on an old circuit board. I borrowed a UV eraser from a local ham and cleared the EPROMS. I then purchased the latest Willem EPROM burner. I was finally able to figure out what to do and successfully burned 2 EPROMS and they worked!! Now I could have bought the chip for \$25.00 with the code, but then my blood pressure would drop from not getting upset at

the burner. The upset factor keeps the blood flowing. Just kidding, it was fairly easy and once I understood it and had it programmed properly, it was done in a flash.

Now here is the issue, the IF-10B board and the IF-232C are fairly rare. You can build an IF-10B board and if you want the instructions just email me and I will get them for you. The IF-232C is also rare to find and can be replaced with some of the newer items from manufactures like Piexx.

I like things natural and original so I searched and it only took an hour or so and I found both units. Once the EPROM and the IF-10B is placed in the 940, the IF-232C has a connector that fits in accessory jack 1 on the back of the radio. The other cable goes to a 9 pin serial port on your PC. Even the IF-232 can be built to replace looking for the Kenwood unit. Open up programs like Ham Radio Deluxe and you will see how neat it is to have this feature. HRD and others have a spotting program that tells you the call and frequency a spotter found. Click on that station and the radio takes you right to them. Along with other features, this is the one I use the most. It saves a lot of tuning the dial. The only thing you have to do is know the mode you will be operating in.

As far as the 440S and the 680S along with other vintage Kenwood radios, these units only need two chips to get the radio to talk to the IF-232C unit. These chips are cheap and cost maybe \$5.00 for the pair. This pair of chips is known as IF-10C. There is also an IF-10A which may be for a TS-930. The IF-10D is for the TS-50 and TS-2000.

So there ya go, nice vintage radios can and will work in the 21st century computer world. With a little digging on the internet, you can find one way or another to make them work. Not only did I complete my goal of a CAT operated Radio; I learned about and programmed an EPROM and



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found that I can build both units that are rare to find today. These vintage radios are well worth saving as they cost a lot less than today's latest radios, they are solid and 99% of any issues are easily repaired by yourself or a Ham like me. If that is not possible, there is a guy in Texas that is the GOD of these radios and his prices are reasonable. You won't be sorry if you buy one and have to fix it. There is nothing wrong with these vintage units at all and they will match or outdo any radio of today in its class. The biggest issues you will run into are capacitors that have gone bad on the AVR power board or a PLL out of lock. Not a problem, for \$40.00 a gentleman in Canada has a rebuild kit for just that purpose and the PLL out of lock issue has a solid fix available on the web. Bradley E Allen.

Bob (N2HJD) has offered to do an "Ask Bob" column for the newsletter. So I guess any question suitable for "Bob the Builder" will do. Questions can be sent to: newbienet@frontier.com and I will forward them along. Brad

NOTICE: Please refer to the webpage <http://www.rrra.us>. We need all members to click on the link in the box to sign up for the intermod. We are going to go forward with an electronic copy as our main way of delivering the newsletter. We need your support to sign up so we have your email address on file. We have some email addresses, but some are out dated and such. Help us get the mailing list up to date so we can move forward with this. You will be added to the base within a few days once we check the records to verify your membership. You will then get an email with a system generated password. Once you sign in with that password, you should be able to change to a different password of your own. We do not track passwords. If you forget your password, contact Brad Allen at KB2CHY@frontiernet.net and he will reset your account for you. Brad

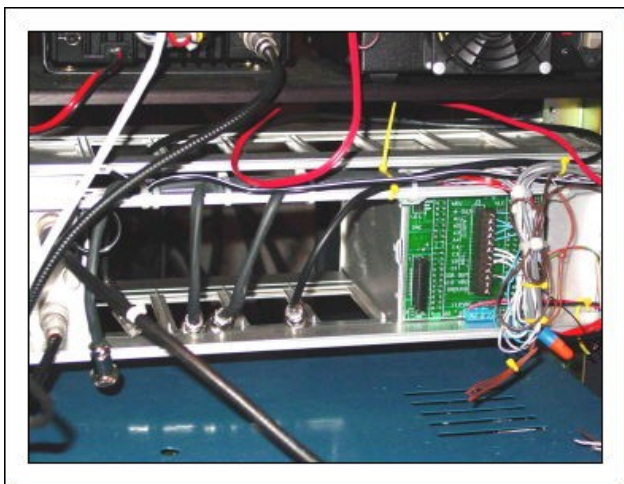


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K2RRA/R Pictures (146.88)



These are original pictures from 2002.

Picture 1 is of the controllers the Vertex, power supply and voter shelf missing the receiver cards. What is in place is a blank box to use as a test fixture, the voter card and the line card. Over at the far right is a crystal filter designed for the 146.28 frequency prior to the duplexers.

Picture 2 shows a shot of the duplexers as they were at the time. Two of those cans closest to the front corner have been replaced with larger better cans from Frontier.

Picture 3 is of the rear of the voter card shelf showing the Motherboard purchased and the harness I built. Remember this system was under construction when these pictures were taken. The receiver boxes were being wired and tuned at the time.

Picture 4 is of the repeater on top, the remote base rejects frequency cans and the power amplifier.

At the present time, we have one of the controllers here and one at Cobbs Hill. The power supply shown failed within a month of purchase. It was mine, so I have the supply. A different supply is in it's place. -Brad Allen



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Any readers with knowledge of news relevant to the Rochester Ham community or the RRRA should contact Alan Beadle (KC2TND) via email at:

ab.beadle@gmail.com

(It will be considered for inclusion in the next "Intermod" by the RRRA.)

This Newsletter can be found monthly in the members section of:

www.rrra.us

RRRA Officers:

President: Bob Shewell, N2HJD

Vice/past president: Brad Allen, KB2CHY

Secretary: Mary Reminiki

Treasurer/Membership/Intermod Publisher:
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Intermod Editor: Alan Beadle, KC2TND

RRRA Control Operator: Brad Allen,
KB2CHY

Repeaters and Trustees:

K2RRR/R: 146.88, 442.7
Joel Rossbach

N2HJD/R: "Megaplex"
Bob Shewell

W1YX/R: 147.18
Brad Armstrong

KB2CHY/R: 443.9
Brad Allen

Technical Chairman:
Bob Shewell, N2HJD

Net Managers:

Monroe County FM Net: Lynn Rosenberg,
N2IZX

*Ray Pickens & Leon Ingrick Jr. Memorial
Newbie net:* Brad Allen, KB2CHY

K2RRA/R System Topography

North West Remote Receiver
Dewey – Stone Area
146.28MHz

Located in the Dewey – Stone area.
Provides receive coverage for Greece
And the lake shore.

Provides coverage for Ginna
Plant emergencies.

Webster Site
Plank Rd at NY250
442.7MHz + Repeater

Normally operates as stand-alone
Repeater.
It can be linked to main site by 70cm Remote base.

RF Link

Main Site
111 Westfall Rd
Voting Receiver
Main Transmitter 148.88MHz
70cm Remote Base

Fiber Link

Aux. Site
Cobbs Hill
Receiver 146.28MHz
Aux. Transmitter 146.88MHz

Normally operates as a remote receiver for the main site.
It can function as a stand-alone repeater w/o
Remote receive capability.

Voting selector selects the best input from
Receivers at main site, Northwest remote,
or Cobbs Hill. This is seamless to the user.

Above is a diagram of the 146.880 repeater system as it was rebuilt in 2001-2002. The system at Westfall was placed on the air in February 2002. Equipment purchased at that time included two RI-300e controllers, a Vertex remote base radio for frequency agility, a Doug Hall Voting card and Line card for fiber operation, four 440 receivers from Hamtronics in Hilton, NY with PL cards and a shelf for it all to go into. The voter card came in a box and plugged into a mother board for connection to the system. A custom harness made by Brad KB2CHY was made for connectivity to the remote receiver boxes which slide into a shelf. The receivers were adjusted and built into a box each and there are four units. This work was done by N2HJD and KB2VGF. All are identical and easy to adjust for the most part. Connections are done with an eight pin din plug and a BNC for the antenna. At the time, the fiber connection was not part of the plan. We had planned on a RF link to Cobbs Hill. The Line card was purchased along with an audio card for the Cobbs Hill Site. These were afterthoughts due to the fact that the rebuild of the Cobbs Hill tower did not include an antenna for the RF link. Being familiar with this kind of circuit, I acquired the equipment to make it work. The existing radio and the power amp were gone over and checked by N2HJD. The existing duplexers were also taken apart, cleaned and retuned. Not too long after this, we were given all the radio gear at Frontier from their radio systems and the paging transmitters they had, along with duplexer cans, two of which were placed on the site with the old ones. This helped the receiver at the Westfall site tremendously. The Cobbs hill site was built with a RC85 controller. This was located at the Plank Rd site, but was overkill for what was really needed. A basic controller, an SCOM unit was placed at the Plank Rd site. The RC85 was then integrated into the Cobbs hill site. Just after Empire State games, the second controller was to be used. It was originally used to control the remote Base, but again was overkill for us, so the man from Pacific Research traded us the interface to the controller for a card that would

fit into the vertex and is addressable from the controller from the main radio. Each controller can take eight devices and be addressed on the buss. The vertex became device #8. The goal here was to place an exact controller at Cobbs hill as the one at Westfall Rd. This would be integrated so that it could remain a receiver, but also be able to turn off Westfall in a failure situation and turn on the transmitter from Cobbs Hill, thus the "HOT" standby repeater that can be activated in a heartbeat. Now this all seems very simple, but remember, it is in use as a receiver and any codes going to one controller also go to the standby unit. Codes have to be carefully utilized between the two units to make them seamless. For the most part they are. The difference is that there are no voting selectors involved. It is a true standalone repeater when activated so things like Smartsquelch and encode can be utilized if needed. We do use the Smartsquelch normally as this is a very high site and we take advantage of the mods done by N2HJD. When the Empire State games came a few years back, we designed a "Portable" voting receiver. This unit is used where a little help is needed to get back to the Westfall site via handheld, such as in RF holes around the area. It is setup on an inverter to run the 12 volt supply, and using a homemade dual band antenna, it becomes another receiver on the system. The unit is made up of parts from the Frontier gear and consists of a GE master II VHF receiver on 146.28 and a 440 transmitter of about 25 watts. This should give you some understanding of the radio system and what it takes to make it one of the best in the area. The repeater transmitter puts out 100 Watts into the duplexers and we get about 60+ watts out into a Omni-directional antenna. We do not beam much of the signal to the north because of the 146.880 in Canada. Brad KB2CHY