



Western Tidewater Radio Association

"HAMTOWN WAVE"

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PO Box 323 Smithfield, VA 23431-0323 <http://www.wt4ra.org>



Happy 4th of July



NEXT CLUB MEETING AUGUST 11, 2008

Officers and Committee Reports

Vice President (w4pro)

LINEAR AMPLIFIERS

Because the maximum legal power output of an amateur station is fifteen-hundred watts and the average HF transceiver puts out only one-hundred watts, most serious hams eventually buy or build an amplifier to make up the difference. The range in cost and performance of available amplifiers on the market is extremely wide. From an economic and practical standpoint, it makes little sense to use an amplifier that boosts your power from one-hundred watts to a mere two or three hundred watts. A rock-crunching amp doesn't complicate your station any more than a small one. Actually, some of the really big (and expensive) ones have automatic tune-up and safety features that make them almost invisible. Therefore, most of the newer amplifiers put out a kilowatt or more. In the old days, when the power limit was one kilowatt into the final stage, most amplifiers ran about six-hundred watts output. Many of those amps are still around and are quite popular with collectors and those who don't want to invest several thousand dollars.

An amplifier for SSB is called a linear because its output must be a faithful reproduction of the input if it is to produce a signal without distortion and unwanted harmonics. Non-linear amplifiers can be used on other modes such as CW and would probably be even more efficient, but would increase chances of interference to other services (RFI) because they generate lots of harmonics.

A single-band linear can be extremely simple to build and operate. The main parts would be the amplifier tube, the power supply, input circuit, output circuit, the antenna changeover relay and the metering circuit. I doubt if many hams want to build such an amp but the following will give you an idea of what an amplifier is like inside.

THE TUBE. The tube should have a plate dissipation rating almost equal to the power output. That is because the efficiency of a linear is not much more than fifty-percent and decreases as the operating frequency is increased. The other fifty-percent goes up in heat mostly in the tube plate circuit. The most popular tubes for linears have plate dissipation ratings of 400 watts or more and are used in pairs, e.g. 3-500's, 4-400's.

The type numbers reveal some important characteristics of the tube. A 3-500 is a triode (three elements) with a plate dissipation rating of 500 watts. A pair of 3-500's, if ran at maximum ratings, would be capable of the legal maximum output of 1500 watts if the efficiency of the amplifier is 66 percent. The power input would be 2500 watts as indicated by the product of the plate voltage times the plate current. One thousand watts would go up in heat in the amp while the remaining 1500 watts is going into the antenna.

INPUT CIRCUIT. Can be a home-made choke (grounded grid) or a tuned circuit.

OUTPUT CIRCUIT. Usually two variable capacitors and a coil (Pi network). Components must be capable of handling high voltages and currents.

POWER SUPPLY. Larger amps run on 220 volt house current. The tube requires a low-voltage alternating current for its filament and a high D.C. voltage for the plate. Two-thousand volts or more is typical.

ANTENNA CHANGEOVER RELAY. The switching relay connects your antenna directly to your transceiver when you are receiving and when the amp is turned off. While transmitting, it connects the output of your rig to the input circuit of the amp and the antenna to the output of the amp. The relay is operated by a connecting a cable from your transceiver to the amp.

METERING CIRCUIT. As a minimum, you want to monitor the plate current of the amplifier tube. A grid current meter is almost a necessity. An external wattmeter will suffice for monitoring the output. There are usually no plate or filament voltages adjustments to be concerned with.

CAUTION!! The high voltage in a linear can kill you. That's why commercial amps have interlocks that interrupt or short out the high voltage when a cover is removed. To be safe, short the plate of the tube to ground with an insulated screwdriver before touching anything inside.

I built a single band, twenty meter amp many years ago and it worked quite well. But it didn't take long before I was scheming to get on other bands. Unless you use plug-in coils or commercially-made tank circuits, that can get rather involved.

The price of a used amp in good shape now exceeds its original cost. A twenty-year-old Heathkit SB-220 easily brings over \$500. The Drake L4-B and the Kenwood TL-922 are similar. Linear amplifiers are usually very reliable. Take care in tuning your amp and the tubes will last for a very long time. Watch out for too much grid current and don't hold the key down longer than necessary while tuning. Every watt of energy that doesn't go into the antenna is heating up the insides of the amplifier, mostly the plate of the tube.

Jim W4PRO



Treasurer's Report (by W4RBH):

Main Account Balance as of 6/20/2008	\$ 1370.50
Remaining budgeted expenses for 2008	\$ 460.07
Recent expenses:	
Website Hosting	\$ 71.67

VE Program Account Balance as of 5/20/2008 \$ 160.03

Membership Report (by W4RBH): Currently there are fifty-one members on roll. Herb, KF4RYN, was just a bit late getting his dues in for 2008 and missed the initial issue of the roster. He is now back in good standing with the club. If you hear him on the air during a break from his busy schedule be sure to give him a call.

Repeater Report (by W4RBH): The WT4RA repeater (147.195+), remote base, and packet node system continues to function normally. Members are encouraged to check-in to the weekly net sessions each Thursday at 7:30 PM.

During this time of the year you should expect to periodically hear interference from our neighboring repeaters. This is a normal occurrence due to weather related band enhancements. If the interference is keeping the repeater keyed up and the repeater is not already in tone mode, members are encouraged to place the repeater in the tone mode. If you do hear interference, go ahead and use the repeater in the normal manner. One of the really neat things about FM is that only the strongest signal is seen by the repeater's receiver.

New Service from Google Earth (by W4RBH): I know that most of you use websites like www.grz.com to look-up contacts you make. Have you ever used a website like Google Earth (<http://earth.google.com/>) to get an aerial view of someone's QTH? Just recently version 4.3 of Google Earth has been released and will now provide the capability to actually see street level photography of the address you enter. Not all of the country is covered yet, but most of tidewater including Smithfield and Isle of Wight are included. It is really neat, and this capability is included in the "free" version, so if you haven't already played with it, download the latest version of Google Earth and in the "layers" block on the bottom left side of the page make sure the "Street Level" option is checked, and check out your own QTH just to see how good of a picture (if any) is displayed. Now while you are in a QSO with another ham you can ask him about all that junk in his yard.



SILENT KEY

Charles A. Bogert

Hampton - Charles Bogert, 55, friend, kind spirit, musician and ham radio operator (AE4HV), died June 8, 2008. He was a member of SPARK and W4HPT. He will be missed by his beloved cat, Buster, and his amateur radio family around the world. A man who has friends will always be wealthy. Godspeed, Charlie.

A fund has been started to raise money to cover cremation fees. The goal is to obtain Charlie's ashes and have a short memorial service at the beach he loved so much. If we are unsuccessful in our goals, any money collected will be returned to the donors or turned over to the radio group (or groups) at the donor's request. Please contact me or Addison (AA4AV) with questions or donations.

Cindi Verser [CVerser@MarinersMuseum.org]

Joe Roth, WC4R [wc4r@wt4ra.org]

Good news concerning Charlie, finally....

I just talked to the Circuit Court and as of July 10, I expect to officially have a court order to make decisions concerning Charlie's funeral and sale of his van and stuff. They will run my background check but it is a formality—all I needed was no bankruptcy and no felony history. And there is a token \$16 fee. I have to wait 30 days past his death date in order to submit the papers but the woman at the court house said they wouldn't turn me down.

I called Mrs. Peebles at the hospital and let her know we will be claiming the body and that we will let her know which funeral home to send him to in the next day or so. She is thrilled that we have made progress. She has been full of compliments for everyone who has called to ask about Charlie and is very impressed by the ham radio community. She told me that she knows we will be blessed for our deeds and that so many people would have given up or not tried to work out the problem in the first place. Thanks to everyone for their suggestions, comments and answers to so many questions.

We have raised \$300 so far and with the sale of his equipment and a few more donations, I don't see any problem getting a funeral home to work with us. But for added help, please help get the word out to all the radio groups in the area that we could use their help and with the number of hams around here, if everyone gives \$1 or 2, we will more than meet our goal. Any donations over and above the cost could be given to the Salvation Army or the Rescue Squad involved as a donation in memory of Charlie.

I also talked to Charlie's attorney concerning the lawsuit and he is going to try to get them to settle in order to meet the expenses he has already incurred. If there is any money after that, he will forward it on to the funeral home. Not too likely since there were a lot of medical bills related to the accident and the other person involved may not have any money to settle the claim, but it is a slight possibility.

We aren't over the finish line just yet, but it is definitely looking much, much more positive than it did yesterday. Send of a few prayers and keep your fingers crossed.

Cindi



WTRA FIELD DAY



I wanted to take this opportunity to thank everyone involved with the Emergency Preparedness EXPO and WTRA Field Day. We had a very good day and a lot of good information was distributed.

To Rusty Chase and Jack 'Chef Noah' Chase - Your "blood, sweat and tears" were very appreciated. Especially the sweat!

To the Town of Smithfield, Smithfield Center and Smithfield/Isle of Wight Tourism - We appreciate working us in at the last minute. The venue was great.

To all the Amateur Radio Operators - Your contact work will be rewarded with a very good score.

I have attached a press release that was distributed yesterday to the local papers. Please feel free to use it in your own publications. I have all the included pictures and more in jpeg format. Just drop me an email if you would like a copy.

Once again, a heartfelt THANK YOU to all those who contributed.

**Lyle Hornbaker
2008 WTRA Field Day Chairman**



Franklin Field Day



WANTED

One tower climbing belt, good condition. For use on Rohn 25G type tower.
Contact Joe-WC4R at 747-345-0976 or wc4r@wc4r.com

Items for Sale

SWR METER (last listing)

SWR Meter – Radio Shack Model 21-533 – 3-30 mhz, 1000 Watts - \$20.00 757-692-4835

YAESU (last listing)

FT1000 MP Mark V with the heavy duty power supply. This is the 200 watt version. It comes with all the original equipment that came with it from the factory; hand mike, manual, schematics, Yagi QSL and all the original packing and boxes.

I am asking \$1850.00. This unit has had very little use. It may be seen and examined at my home.

Jim Jackson (KD4FN)

CUSHCRAFT R7000 ANTENNA (last listing)

The all new R7000 is a 10 through 40 meter, no ground radial antenna that is expandable to include 80 meters. It has a power rating of 1500 watts. Asking price is \$200 (new price was \$400). Contact Ted Martin at 357-9852.



Emails Received

(none)

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