

MORE THAN A CLUB. WE ARE FAMILY!!



# THE TARA NEWS

Affiliate of the American Radio Relay League

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MAY/JUNE 2011

## NEXT CLUB MEETING

May 17, 2011

### "THIS IS JEOPARDY!"

The Next Meeting of the Troy Amateur Radio Association will be on Tuesday, May 17th at 7:00 PM over in Green Island, which is our normal meeting placet! So PLEASE mark your calendar's right now. Also, this meeting is a very important meeting as we'll be voting on who will be the next recipient of the cherished **Thomas M. Remmert, N2TR Award** more affectionately know as the "**Bubba Award**"! Of course we still have plenty of things to finalize for the Field Day coming up in June and we'll have the latest news on who's running for office this year in the upcoming TARA 2011 elections. This year, is an off year but we only have three Board positions up for election. I guess you can see we have a lot to take care of. Do your very best to come join us on Tuesday - May 17, 2011.



Plus we will have guests Bob Raffaele W2XM and Nathaniel Greenman, KB2HPX, who will be hosting Ham **Jeopardy!**

## WANTED – SODA

Donations for Field Day Refreshments

If you haven't noticed Field Day 2011 is just a month away and it's time for us to get things rolling. One of the very first tasks we try to take care of is our **Annual Soda Drive**. Each year we



have this fundraiser of sorts to keep the expenses down for our Field Day weekend and what is left over goes to monthly picnics and meetings. As you all know the price of beverages is not a cheap thing today and it's just too much of a load on our treasury, especially when we need other things. So, how do we get around this problem? For several years now we've been asking everyone that plans on attending our Field Day weekend of June 24,25 & 26 to bring in a few six packs of your favorite soda.

**Please remember that we cannot have any alcoholic beverages in Frear Park and everything must be either cans or plastic. Please, NO GLASS!**

If you could help us by bringing in some soda or even bottled water has become very popular, it would be greatly appreciated. This can save the club some mighty big bucks, especially if we have

a very hot weekend. There is another way we can handle this for you and for a lot of you it works out better. We're well aware that for some of you it's a hassle to stop and get the soda, then remember to bring it to the next couple of meetings. So, if you would like to donate a few bucks, we then can purchase the soda that we need. This really works out best for there have been a few year's that we get overloaded with let's say 10 cases of root beer but no 7UP, Coke, or of course the best one...Diet Pepsi! (we just had to add that!!). You can give your donation to Karen Smith, KS20, and after we collect all of the soda donations we can then go out and purchase the flavors we need most. Can you help us out? We sure hope so. We know it can get very hot over in the park and without a lot of cold beverages it just makes it unbearable!

**Please do your Best to Help Us Out.**

**Dinner menu for FD on page 6.**

## **EMERGENCY ALERT SYSTEM FOR CELL PHONES**

NEW YORK -- An emergency alert system that will send messages to cellphones during disasters could have been used to warn New Yorkers of the tornadoes that hit the city last year, city officials said Tuesday. Federal officials joined New York City Mayor Michael Bloomberg to announce the Commercial Mobile Alert System, which will direct emergency messages to cellphones in case of a terrorist attack, natural disaster or other emergencies. There will be three levels of messages, ranging from a critical national alert from the president to warnings about impending or occurring national disasters to alerts about missing or abducted children. People will be able to opt out of receiving all but the presidential alerts, Federal Communications Commission Chairman Julius Genachowski said. The alert system will be up and running in New York and Washington, D.C. by the end of the year. Genachowski said the goal is to ultimately

install the system throughout the United States. New York City Emergency Management Commissioner Joseph Bruno said the alert system could have warned residents of two destructive tornadoes that hit Brooklyn and Queens last year. The tornadoes killed one woman and caused extensive property damage. A special chip is required to allow the phone to receive the messages. Some smartphones already have the chip, and software updates will be available when the network goes online later this year. The chips will not allow government agencies to collect information about the phones' users, said Craig Fugate, administrator of the Federal Emergency Management Agency. Fugate said cell phones turned on in the direct vicinity of a disaster – an evacuation zone, for instance -- would receive a message warning them of the impending danger. The alert would show up on the phone's front screen, instead of the traditional text message inbox, and arrive with a distinct ring and likely a vibration. Gilberto Palma, a 62-year-old maintenance supervisor in the World Financial Center, a complex that was severely damaged in the 9/11 attacks, said he thought the alert system was a great idea. Everybody's going to be happy, especially in this area," he said. In this building, everybody's still on alert. Debbie Hayes, a 49-year-old nanny who passed through the complex on the way to a play date with her 11-month-old charge, said she was also thrilled with the idea of getting important information instantly during a crisis, even if she isn't at home in front of the TV. I'm, like, on the go. I'm not in one place," she said, adding that she was curious about whether the system would work on the subway, where she has suffered from anxiety since the 9/11 attacks.



# SWAN 250 6 METER TRANSCEIVER

Richard Post, KB8TAD

Assistant Dean Emeritus, Ohio State  
University

The Swan 250 transceiver for the 6 Meter ham band was introduced in 1966 at a cost of \$325. The matching 117XC power supply was an option at \$95. RF output is from two 6146B tubes. The set is rated at 240 watts PEP, 180 watts CW, and 75 watts AM.

## First 6 meter SSB encounter

This Swan 250 with matching power supply and mike, all in very nice cosmetic condition, were sent to me as a good home. Many thanks to Bruce N4JAD. It is the first 6 meter SSB transceiver I had ever encountered. Lots of new learning needed to take place. One of the nice things about tube equipment is that it is relatively forgiving of simple measurement mistakes. However, one must be very careful with the high voltages encountered.



## Checking out the power supply

The 117XC on the right matches the Swan 250 cosmetically. I removed the smaller box that is the actual supply from the 117XC cabinet. Some of the wires inside as well as in the umbilical had the insulation partly melted. Those wires went to the 117 volt on-off switch located in the companion transceiver. Inspecting the power supply case revealed that one of the partly-melted wires had

also touched one of the high voltage capacitors in the upper stack. Marks on the aluminum cover as well as a burnt piece of wire indicated that significant arcing had taken place. I replaced the partly melted wires with somewhat heavier hookup wire of the same color code and rerouted the wires away from the high voltage points. I also inspected and re-did some of the connections in the umbilical. Heat shrink tubing was added as needed to the wear points. The 117XC uses a unique Jones connector for its AC power cord. It contains a fuse holder mounted in the connector. After determining which connection would be chassis ground, I changed the power cord to a 3-wire grounded version, making sure that the line connection (the hot side of the AC) went to the fuse and then to the power switch. The neutral goes directly to the transformer.

After carefully inspecting the wiring and doing some tests on the diodes and electrolytics, I slowly powered the 117XC with my isolated variac while checking at various voltage levels to make sure the series electrolytics were evenly dividing the voltage. The electrolytics reformed properly and divided the voltage as intended. Like most transmitters and transceivers, the power supply has two high voltages, one for receiving and the low-level transmitting stages, 275 volts in this case, and a second much higher voltage, 800 under load and over 925 at no load.

Compared to some other power supplies with independent high voltages such as the Heathkit HP-23 series, the Swan stacks the two to obtain the highest voltage. About 525 volts (under load) is added to the 275 to obtain the 800 volts. That allowed Swan to only use three levels of 350 volt electrolytics, one for the 275 volts and two in series for the 525.

A further problem developed with the power supply. The 12 volt filament line opened intermittently. I traced the problem to a bad solder joint at the input Jones connector.

## Swan mike, bad element

The nice brushed-chrome Swan mike (on the right, not plugged in) needed a plug attached and

some internal repair. The crystal element was dead. I opened the element to find that the ground side connector was disconnected. I managed to repair it with a new bolt and a flat washer to hold the connector strip to the case. While the mike worked after repairs, the element had unfortunately deteriorated. Its output level was too low to use. I will look for a substitute element. In the meantime, I used a known-good Turner 350.

### **Powering up the Swan, weak receive**

With the power supply in good order and with the Turner mike connected, I powered the transceiver. The Receive function worked but was extremely weak. The transmitter side did nothing. Sniffing the transistor VFO with a frequency counter showed that it could track properly. The tube VFO tripler was also functioning. Testing all tubes revealed a weak 12BA6 IF amp tube and one very weak 6HA5 RF amp tube. I replaced both. That made a noticeable difference. I tweaked the input coils to the 6HA5 as noted in the manual. That helped somewhat more. However, receive still seemed rather weak. At full RF gain it was also a bit unstable.

### **Repairing an open IF peaking coil**

I adjusted the output IF coil for maximum noise per the manual instructions. It peaked easily. However, the input IF coil which is also used as part of the transmit function was stiff and somewhat difficult to turn. In checking the coil continuity, I found it open. I unsoldered and removed the IF coil and its shield housing. The ferrite adjustment slug had been cracked and was jammed in the coil sleeve. The sleeve itself had been twisted loose from the base. Both of the coil wires had been pulled off the solder lugs. I resoldered the broken wires and used cyanoacrylate glue to join the sleeve and the base again. I also measured the ball park value of the inductance of the coil in case a successful repair was not possible. That would enable a replacement. After the glue set, I used a drill bit clamped in vise grip pliers to manually but gently "drill" the ferrite slug, starting with a small bit and then a larger one. The ferrite came out in pieces. I

located a donor coil for a replacement slug. Using a grid dip meter, I confirmed that with the replacement ferrite slug, the coil and its little fixed capacitor could be resonated at about 10 to 11 MHz. I remounted the coil assembly in the circuit, tweaked the alignment, and noticed a much improved receive. I also neutralized the input circuit of the RF amp tube I had replaced. That solved the instability at maximum RF gain caused by regeneration at some settings of the PA grid control. However, the transmitter still would not function.

### **Mixer and driver output coils, loss of inductance**

I used the grid dip meter and my frequency counter to properly set the VFO tripler coil. The mixer and driver output coils were also checked, but neither of those coils could be adjusted down to 50 MHz resonance. The coils use a piston-shaped ferrite with a metal adjustment screw. Adding 5 pF succeeded in just bringing the coils down to 50 MHz. I finally added a 10 pF dipped mica across each coil to get the proper range on the coils with a bit of margin. One characteristic of ferrite is declining permeability with age. I suspect that the ferrite in those coils, which had aged some 40 years and were also subject to some RF heating, had lost permeability resulting in coils which were no longer capable of achieving their full inductance.

### **Carrier crystal surprise**

According to the manual, the Swan 250 was designed around a 10.698 carrier oscillator. Imagine my surprise when the frequency counter read the carrier crystal output at 10.898 MHz! Thinking someone had replaced the crystal with the wrong one, I quickly checked the manual for both the 250 and the 250C. Apparently, Swan used a 10.898 crystal in the 250C. To my relief, the crystal filter in this set read "Model no. 10.9-2.8". Apparently Swan had substituted the carrier crystal and filter planned for the 250C in the later manufacture of the 250.

### **Up scope**

At this point, my ignorance of the circuit was

starting to show. While the idling current of the tested-like-new 6146B pair was easily adjusted to 40 mA as specified in the manual, nothing further was happening. Carrier balance showed just a slight dip in current. I suspected that the mixer and driver were not providing sufficient RF voltage. Time for the oscilloscope. I don't use a scope often enough, so I used a signal generator to preset the scope to expected frequencies so I would recognize what was on screen. With the Swan tuned to 50 MHz, I rested the 10X scope probe in the center of the mixer coil for capacitive pickup. The mixer adds the 10.9 MHz to the 39.1 from the VFO using the resonant 50 MHz circuit at its output. On transmit, the scope showed a proper frequency but insufficient RF voltage. I had already pre-set all of the coils in the Swan. With the scope probe in the VFO tripler coil (at 39.1 MHz), I maxed its voltage output a bit with the trimmer cap. I adjusted the coil a bit and confirmed that it was already peaked. Returning the scope probe to the mixer coil, I adjusted its little cap for maximum as well. Leaving the probe at that position, I then adjusted the carrier crystal trimmer. That adjustment kicked up the voltage significantly. At this point, I was rewarded with a much increased cathode current when I keyed the transmitter. I also noted that just a little bit of adjustment was critical in each of the settings. Having the scope was very helpful.



I now could tune the transmitter to full output. The carrier balance control could null properly. With it centered on the carrier null, my 60 watt

light bulb dummy load could flash to full brightness in time with speaking into the mike. I still have much to learn about tube SSB transceivers, but this one is working again. Let me know what shortcuts and tricks you have learned in your repairs and restorations.

**On-the-air test**  
I fired this Swan up for the local 6 meter AM net, probably its first on-air use in quite some time. Receiver was excellent. I had the carrier injection at the suggested 80 to 90 mA setting per the manual but needed a bit more for decent AM. I also suspect that the Turner 350 mike may not be the best match for the set. Will try to repair the Swan mike. As an alternative, I suspect that an older high-impedance D-104 would probably be a good choice.

**NEW FROM SWAN**



**SWAN 250**

**6 METER SSB TRANSCEIVER**

**SPECIFICATIONS:**

- \* 240 watts P.E.P. input on single sideband, 180 watts cw input, 75 watts AM input with carrier insertion.
- \* Two 6146B tubes in Power Amplifier.
- \* Complete band coverage, 50-54 mc.
- \* Velvet smooth vernier tuning covers 500 kc, calibrated in 5 kc increments.
- \* Transmits and receives on Upper Sideband.
- \* 2.8 kc bandwidth with crystal filter at 10.7 mc.
- \* Single conversion design for minimum image and spurious.
- \* 40 db unwanted sideband suppression, 50 db carrier suppression.
- \* Receiver noise figure better than 3 db, 6HA5 triode R.F. amp, 6HA5 triode mixer. Includes Separate AM detector.
- \* Automatic noise limiter.
- \* Audio response essentially flat from 300 to 3100 cycles.
- \* Pi output coupling for matching wide range of load impedances.
- \* Meter indicates either cathode current or relative output for optimum tuning and loading.
- \* Provisions for adding 500 kc calibrator, or plug-in Vox unit.
- \* Dimensions: 5 1/2 in. high, 13 in. wide, 11 in. deep. Weight: 17 lbs.
- \* Automatic noise limiter.

\* **Price, amateur net:**  
 Swan 250 ..... \$325  
 External VFO for separate transmit-receive control available soon.



6 Meter Band Openings Increase!  
 With sun spot activity now on the increase, 6 meters is rapidly becoming one of the most interesting bands to operate, and the next few years will undoubtedly see tremendous activity on this band. Sporadic E openings are occurring several times each week over all parts of the country, making excellent contacts possible from Coast to Coast and over intermediate paths. With long F2 skip and trans-equatorial propagation to look forward to, plus the consistent ground wave and tropospheric scatter contacts made possible with the power of the Swan 250, there is practically no limit to the operating pleasure you can find in the VHF world above 50 mc.  
 The Swan 250 is at its best in the SSB mode, for which it was primarily designed. With 240 watts PEP input and an average beam antenna, its talk power does an outstanding job. To work your AM friends you simply insert carrier to 75 watts input, and they will read you loud and clear. AM reception is provided for by the receiver function switch. Also, a noise limiting circuit is effective on both AM and SSB.  
 The Swan 250 is engineered to provide the same excellent voice quality which has become the trademark of all Swan transceivers. And, naturally, the same customer service policy, second to none, applies to our VHF models.  
 If you are seriously interested in working 6 meters, see the new Swan 250 at your dealer. We are delivering now, but the back order list is getting longer, and we suggest you place your order soon.  
 73 Herb Johnson  
 W6QKI  
**SWAN**  
 ELECTRONICS CORP.  
 OCEANSIDE, CALIFORNIA

Ad placed in "73" magazine, September 1966

Editor's note – it so happens W2ABY has one.

## PUBLIC SERVICE

### :: Upcoming Events ::

Thursday, May 19th 2011 6 PM -  
CDPHP Workforce Challenge

Sunday, May 22nd 2011 -  
East Greenbush Rotary Run

Monday, May 30th 2011 10 AM -  
Watervliet Memorial Day Parade

Saturday, June 4th 2011 -  
Freihofer's Run For Women

Saturday, Aug. 13th 2011 9 AM -  
5K Dan Ran Run, Ballston Spa

Saturday, Aug. 20th 2011 -  
Civil War Reenactment

Sunday, Aug. 21st 2011 -  
Civil War Reenactment

Friday, Sept. 23rd 2011 6 PM -  
30th Annual Arsenal City Run

## FIELD DAY DINNER MENU

Some have asked and so here is the menu for  
Field Day 2011!

""LUNCH 1:00 PM""

HOTDOGS....HAMBURGERS/CHEESE....  
MACARONI SALAD

""DINNER 6:00 PM""

BBQ CHICKEN & RIBS  
MACARONI SALAD  
TOSSED GARDEN SALAD  
BAKED ZITI....MEATLESS  
CORN ON THE COB W/BUTTER  
BAKED POTATO  
BAKED BEANS  
VEGGIE BURGERS  
FRESH DINNER ROLL W/BUTTER

STRAWBERRY SHORTCAKE FOR DESSERT

**\$25 per person**

Please let Karen, KS2O know as soon as  
possible.

## STEVE BOZAK, WB2IQU IN SAMOA



*Steve Bozak WB2IQU carried his Icom 706, a tuner and power supply. The antenna was a dipole for 20 meters strung between two coconut trees. From this island in the South Pacific the 20m band was open to all the east coast of the USA west of the Mississippi and all of the west coast of Asia, and west coast of central and South America. 5W2IQ got lots of attention! This was great fun! Steve Bozak WB2IQU Clifton Park NY*

## ***THANK YOU!***

Thank you to those in the club who expressed condolences and prayers to myself and my family on the loss of my mother last month. The flowers sent by the club for my mom's funeral was very beautiful and well appreciated. It meant a lot to me personally.

Her obituary:



ALBANY – Beverly E. Neimeyer, 84, passed away on Wednesday, April 13, 2011 at the Hospice Inn at St. Peter's Hospital. Born in Kingston, she was the daughter of the late George and Edith Wiedemann. She was a resident of Albany for most of her life. Mrs. Neimeyer worked at Montgomery Ward from where she retired. She enjoyed crocheting, knitting, sewing, crossword puzzles and fishing. Beverly is the beloved wife of 61 years to Kenneth Neimeyer. She is the devoted mother of Richard (Mary Ann) Neimeyer and Sharon Cable, all of Albany. Beverly is the cherished grandmother of Tina, Jennifer, Elena, Matthew and Kelly. She is the loving great-grandmother of Krissy. Also surviving is her sister, Gloria Hoefner of Buffalo. Memorial contributions may be made to the Alzheimer's Association of Northeastern New York, Pine West Plaza, Bldg. 4, Suite 405, Washington Ave., Ext., Albany, NY 12205 in memory of Beverly E. Neimeyer.

Thanks!  
Dick, W2ABY



### THE TROY AMATEUR RADIO ASSOCIATION

*www.n2ty.org*



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