



ARASWF

Newsletter



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Nostalgia

By Jerry, W8TWJ

The communications equipment of today is a lot different than the equipment that many of us started with in the amateur radio hobby. The cigar box transceiver which is all mode, all band, micro-processor controlled, and frequency synthesized with an output power of approximately 100 watts, is available off the shelf at your neighborhood amateur dealer. This is far different than the vacuum tube based equipment of the 1940s and 1950s when much of the hobby equipment was derived from the war surplus military equipment. The Army Signal Corps equipment that was used in the field and on the aircraft and the Navy Communications Electronics used on the Navy platforms formed the base for our hobby. Much of the equipment from both services was the same identical equipment with the individual service designators. The mobile, shipboard, and airborne equipment was in great demand as it was both reliable and rugged (would withstand an unusual amount of punishment). As the officer in charge of a signal corps maintenance group that was responsible for the care and feeding of the comm equipment for a bomber group I had the opportunity to become very familiar with the gear used at that time. Communications for the bomber group was divided into two parts, the airborne installation and the ground installation. The airborne installation operated from 24 volts dc (the aircraft battery) and used dynamotors for the generation of the high voltages for the vacuum tubes of the receivers and the transmitters. At that time the transmitters and receivers were separate units even if they were mounted in the same case. Aboard the aircraft there were the HF and VHF installations, The HF installation consisted of the Command Set SCR-274N block (low power) and the BC-348 receiver with the SCR-375 transmitter (75 watt output) installations. The Command set group consisted of 3 receivers and two transmitters. One receiver covered the broadcast band, one covered 1.5 MHz to 4.2 MHz, and the third covered 4.0 MHz to 7.5 MHz. The transmitters covered the upper two frequency regions. The BC-348 receiver covered the same frequencies and physically took up the same size space as the three command set receivers. The frequencies for receiving and transmitting were zero beated with the output of the BC-221 Frequency meter. This was not really a frequency meter but was a frequency standard which generated a rf signal which was compared with a standard crystal (1 MHz) and fed to the units for equipment calibration. The airborne VHF unit was the SCR-522 which had the receiver and transmitter in one case. It had four crystal controlled channels requiring both receive crystals in the receiver and transmitting crystals in the transmitter. Each channel was tuned and locked for each of the channels. Changing the channel was accomplished by turning the switch and the tuning controls would whir to the next selected channel. If you forgot to lock the controls for a channel the motors would detune the channel when switched and you would have to retune the whole thing. This unit was

(continued from page 1)

the precursor of the early two meter equipment. The transmitting final amplifier tube was the 832 which had the appearance of a door knob. It was a dual tetrode capable of 25 watts output. Antennas for the HF were strung to the wing edges and to the tail surface edges from small insulator blisters in the comm area. The VHF antenna was an enclosed 1/4 stub on the upper area of the fuselage. In addition to the communications suite the aircraft electronics included; the marker beacon receiver, the radio compass, the ILS receiver (instrument landing system) and the crew intercom which was available to all crew members at their stations.

The ground station consisted to two parts; one part mirrored the aircraft installation with all the same components. The second part consisted of the high power transmitters and the portable (on trailers or mounted on trucks) including the motor generators for high voltages, lighting, and receivers. Each ground station was complete with its own receivers, transmitters, and generator. The receivers were the same as the aircraft and the high power transmitter was the BC-610 (400 watts) with a separate speech amplifier. The typical antenna was an inverted- L strung between two masts with a counterpoise. Whip antennas were mounted on the trucks for relatively short range communications. There were three models in this group; the SCR- 299, the SCR-399, and the SCR-499. The 499 unit was mounted on pallets and could be air transported to various locations. The ground VHF station also included a beam that could be rotated for a direction sense. Additional ground electronics included the ground ILS transmitters and monitors, the Buncher homing station, the message center, and the repair bay. The Comm officer and his assistants had the responsibility to keep operating all of this equipment using his assigned enlisted technical personnel.

After the war and as it became outmoded (replaced with newer and better equipment) much of this equipment found its way to the surplus market where it was sought after by avid hams as foundations for their amateur stations. Although the equipment was either dynamotor or 400 cycle ac powered, the enterprising amateur was able to adapt this equipment to his ham station, primarily by stripping out the power supplies and building 60 cycle power supplies with the proper voltages and current ratings. Those of us whose amateur radio calls that go back to the post war era have used some of this equipment. Ham radio has come a long way since then but those were the days when you could actually modify and build up your own gear. It was an exciting period in this ever evolving hobby called HAM RADIO.

Dinner Meeting Report

The dinner meeting on May 3. was again a nice occasion. Dick and Joan W0MIA had there 54th wedding anniversary, while N1BCC Tom and Gretchen celebrated there anniversary in Brazil. K2GFA will be a rich guy when they come back from the big gambling casinos. An Old Friend, which is 20 years with the SWARC. WX4U Bob Ferguson, and his lovely XYL Shirley joined us for dinner, and the way it looked, they had some good stuff to talk about with WA8LPQ Bob Koffron and XYL Isidora.

There where 22 people present, the food was plenty and good, and everyone had something to chat about. Hope to see all in June.

For reservation call Paul Guenther Mohr K2VMD at 597-8528 because I am not in town at the next meeting. So you all have fun and have a good time

from Sigi, W2JQ and Hanni, N4SKT

We see you all in July. 73s from Sigi

PSK31. The Latest Rage

During the past two months I have been very enthusiastic about 10 meter PSK and the opportunities that it presents the operator in making contacts throughout the world. It is the greatest weak signal mode other than CW and offers the smallest band width other than CW. The excitement appears to be rubbing off on to a number of club members as I have been receiving a number of queries regarding "how to hook it up and where to get the software. In this article I will attempt to summarize the status of the mode as of this date and will refer the reader to a number of other sources for the applications and for more details regarding the mode.

First, What equipment do you need?

You need a ssb HF transceiver, Antenna, and a computer with a sound blaster compatible sound card and a serial port for keying the xcvr.

Second, What software do you need?

You need a PSK31 program, which may be downloaded from the Internet. There are at least five that I know about at present. I have tested four of the them to date. Each has its advantages and each has its quirks (see discussion).

Third, What do you need to interface the computer to the transceiver?

You need a minimum of two shielded cables (three if you use the program to key xcvr) and the appropriate connectors for your xcvr and computer (see discussion and schematics).

We all have a HF xcvr, which we all use in the HF bands. Connecting this same xcvr so that you can use the PSK31 mode does not in any way affect the use of the xcvr on other modes other than possibly swapping a microphone connector when you want to change modes. Operation of the xcvr is PSK is no different than operating ssb other than it is by consensus that PSK will use usb. Tuning and loading the antenna remain the same and if you wish you can use the vox to key the xcvr as opposed to the ptt line.

The obstacle to trying this mode then appears to be the interface of the xcvr to the computer and the setting up of the software. Those individuals that have worked the other digital modes (RTTY, AMTOR, PACTOR, PACKET, etc) have had experience in connecting the tnc to the xcvr and connecting the cable to the computer. These other modes use the tnc with its own microprocessor and software to generate the signal which modulates the xcvr and decodes the received signal. PSK31 uses the DSP(digital signal processor) on the sound card and the appropriate software application to do these functions. Therefore in using this digital mode, you have one less box in the total system.

The computer that you need for most of the software needs to be able to run Windows 95 or higher. This means that it should have a speed of about 100MHz and have 16 Mb of R/W memory and the sound card.

Software Discussion:

The granddaddy of the PSK31 applications is psk31sbw written by Peter Martinez, G3PLX. The current version is 1.08 and is available from the "official" PSK web site at <http://www.aintel.bi.edu.es/psk31.html>. This site has a complete discussion of the mode with many links to other PSK sites. Al Williams, WD5DNR, has written a front end program which adds many usable features to G3PLX's application. There is a link to download this front end from the "official" site. Two additional sites with downloads available and links to other sites are <http://www.psk31.com> and <http://www.qsl.net/wm2u/psk/html>. From these three sites you can link to or download any of the software discussed below. If you plan to use *psk31sbw* I recommend that you also use the *gnr* front end. Presently two logging programs have integrated psk modules built in for the user, the latest version of Writelog (the contesting program used by the club) and Logger ver. 7.03 both have the module. The module in Log-

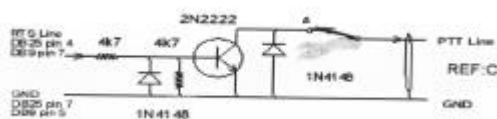
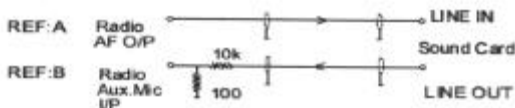
ger has a display very similar to G3PLX but adds a 500 Hz bar graph spectrum display beside the waterfall display, while the Writelog module has a line spectrum display of about 500 Hz and no waterfall display. Note – Logger is shareware free to amateurs while Writelog requires a license registration. The most popular PSK31 applications are *psk31sbw*, *Digipan*, *Logger*, and *WinPSKse*. Of these four *Digipan* and *Logger* are the two that are used the most. *Digipan* uses a waterfall display of 3kHz which is equivalent to the bandpass of your rcvr and allows you to see all the signals present near your operating frequency. From this display you can pick out signals which you can hear with your ear that will give you nearly perfect copy. It is easy to set up and is easy to use. *Logger's* biggest advantage is the integrated logbook, which makes it easy to track the stations worked. It, too, is easy to set up and is also easy to use. *WinPSK* and *WinPSKse* both have a 3kHz line spectrum display allowing you to see the entire bandpass of the rcvr. *WinPSKse* has the special feature that allows you to copy two signals simultaneously and to switch between them for transmitting. Of the four, *psk31sbw* has the most difficult tuning (you need to be within 100Hz). The other three are tuned to the exact transmitting frequency with a mouse click. All provide for afc tracking of the receive frequency and also provide the netting of the transmit frequency.

There are two other multimode applications, which have PSK modules, *Mix32w* and *RCKRTTY*. I have downloaded both and have looked at *Mixw32* a little bit. Because it also includes the other digital modes, it is more difficult to set up. Read this takes more time and more careful reading of the help files. *Mixw32* is a shareware program and the trial version requires that you set up the parameter every time that you load it. I have not had a look at *RCKRTTY* as I write this article. It is a multimode digital application and uses the sound card for all modes. This fact makes the Application of interest to me. At present I have set up and use *Logger*, *Digipan* and *WinPSKse* and I probably use *Logger* the more often than the other two. Which one you use is a matter of personal preference.

Computer/ xcvr Interface

I have two transceivers that I have made interface cables connecting the computer to the xcvr. With the Icom 735, I use the accessory jack on the rear panel. I purchased a matching plug for it at Radio Shack. I also purchased 3 1/8" phone plugs, a db25 male plug for the serial port, and 15 feet of RG-176 coax. The phone plugs were mounted on the ends of the 5' pieces of coax and the other ends were attached to the accessory plug on the pins indicated in the manual. On the db25 port plug I mounted the components shown in Ref:c and included a 1/8" phone jack for the keying line. In the case of the Icom 735 the audio output from the xcvr at this point is at the audio detector and is low compared to the speaker output or the headphone jack. This required that I use the mic input on the sound card. I was able to adjust the audio output from the sound card so that I did not overdrive the xcvr with having to use the resistance divider shown in Ref:a. On the Yaesu I used the RCA jacks for the phone patch for the audio input and output. In this case I did have to use the resistance divider so that I would not overdrive the audio circuits. The cable for this xcvr was made through the purchase of a stereo audio/video cable from Radio Shack and cutting off one end and replacing with the phone plugs. The keying plug is the same for both xcvs. For less than \$10.00 worth of parts you can be on PSK31 mode and enjoy the excitement of this new mode.

If you want to try the mode, download the program, build the cables, install the program on the computer, connect the computer to the xcvr and call me at 992-4708 to help you set up the application. As a part of the setup and installation READ the help files for your program. Have Fun de K2ZEL



From the President:

I am sure you all have heard the latest hurricane forecast. The hurricane center is predicting another active season. For the last 30 years Collier County has been lucky and I sure hope our luck will continue this year but we must always prepare for the worst. This month all you full time hams need to make sure you are prepared. Are your antennas secure? Do you have some form of emergency power? Do you have temporary antennas prepared to replace the ones that blew away? Have you made sure your hurricane supplies are ready?

We also have some work to do as a club. Larry AF4LH has repaired and got the club tower trailer ready for action. We do need to get up and do some work on the 67 machine. Mark WA1QDP is trying to find the time to get up there. We also need to get the K4YHB packet node back up and running. I have got the computer together and the software prepared I just don't know when I will find the time to wire the mike cords and serial cables. If anyone can lend a hand let me know.

Don't forget that Field day is next month
73 Martin, ad4tr

Short Note from John, VEEP

All emphasis must be put toward our Field Day operation. Due to work situation I will not have much if any time to participate, something I will really miss. It is time for many of the new members to jump in and get sweaty, but enjoy the rewards.

Six meters has been very lively lately as I even worked Hawaii with my Icom 706 and indoor antenna, as well as several South American stations. I hope the activity keeps up for Field Day.

de John, WA3TIH

Meeting Notes:

Meeting was called to order at 1930 on the 25th of April 2000 by the president AD4TR. The vice president and secretary were absent. Meeting notes were taken by K2ZEL. A report of the test sessions was given (see April Newsletter). The repeater needs work. The problem is that it is only accessible during working hours M-F. The Florida QSO party was announced for the coming weekend. There is a need for volunteers to assist with N1DL. The computers are ready and we need people to assist in the setup. Don Meilke reported that he had several letters thanking club members for their participation in the walkathon. These were read for the members. A vote of appreciation was given to Don for his work in organizing and administering the club activities during these events. Next months meeting will be devoted to Field Day planning. Be there to plan and to sign up for the activities planned. The July meeting will be on the APRS and will given by Dale, KG5QD
Submitted Bill, K2ZEL

Club Information

Meeting Time:

**4th Tuesday at 7:30 pm at The
Shepherd of the Glades Church
Rattlesnake Hammock Road, Naples**

Club Repeater:

K4YHB – 146.670 MHz (-600)

RACES/EOC Repeater

WB2WPA - 147.300 MHz (+600)

Club Chat Node:

CHAT – 144.970 MHz

ENAP Packet Node

WB2WPA-5 - 145.030 MHz

Club Home Page:

<http://naplesfl.net/~araswf> or

<http://naples.net/clubs/amradio>

Club Officers:

President – AD4TR – Martin

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Vice President – WA3TIH - John.

e-mail – nfn06110@naples.net

Secretary/Treasurer – KF4MJJ - Fred

e-mail – edwardf@crossnet.org

Past President – KE4RGH – Bill

e-mail – ke4rgh@mediaone.net

Repeater Trustee – WB2QLP – Jordan

e-mail – wb2qlp@aol.com

Club Chat Node – N4VMT – Phil

e-mail – n4vmt@aol.com

Newsletter Editor – K2ZEL – Bill

e-mail – nfn06232@naples.net

Training Committee – AD4TR

Webmaster - KE4KTZ - Glenn

De K2ZEL

In early 1946, I returned from the Pacific and reported to the EE&RM Navy School for the first phase of training of Radio Technicians. This first phase was 20 44 hour weeks of classes and testing. The first 8 weeks was elementary electricity and the remaining 12 weeks radio material. There were four hours of class in the morning and four hands on lab in the afternoon. Saturday morning was reserved for testing on the previous weeks work. If you flunked a week you dropped back and repeated the week. You were allowed one drop back before disciplinary action. At the end of the 20 weeks, if you were in the top third of the class you were rated RT3 and all passing candidates were then sent on to EMS (Electronics Material School) where the study of the actual shipboard or airborne equipment was started. The first month was devoted to general test equipment. As our studies progressed to the different classes of equipment the specialized test gear for that group was studied.. The remaining topics of study included; radio receivers, radio transmitters, surface search radar, air search radar, fire control radar, sonar and depth finders, auxiliary equipment which included VHF equipment, IFF equipment, PPI (remote radar displays), remote transmitter/receiver controls. The final two weeks was devoted to electronics administration and supply of the maintenance program. This second phase was a period of 28 40 hour weeks. Following this if at the top of the class you got the second stripe and then you all went to sea to take care and maintain all the equipment that had vacuum tubes except the ship's announcement system and the ship's gyro compass system. The first ship that I served on as an electronic technician was a destroyer escort that specialized in anti submarine tactics. The ship had search and target sonar, depth finders, surface search radar, air search radar, 5 HF transmitters (3 high power ~3-5 Kw) , 2 VHF transmitters, 3 VHF receivers, 10 HF receivers and associated auxiliary equipment. Ah Nostalgia!!!

Meeting Schedule

May 23—Club Meeting 7:30 pm

June 7—Dinner Meeting, Call Paul

**June 25 & 25—FIELD DAY at
N4VMT. No other meeting this month**

July 5—Dinner Meeting Call Sigi

July 25—Club Meeting 7:30 pm