

TARA



NEWS



"The Home of Uncle Sam"

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PSK31 (Phase Shift Keying) A New Mode For Radio Amateurs

Written By: Ernie Mills, WM2U

Based on an idea by SP9VRC and developed by Peter Martinez, G3PLX a new Amateur Mode called PSK31 is emerging. Instead of keying using Frequency Shift, (FSK), this mode uses Phase Shift Keying, (PSK). It is particularly attractive since it requires no lock condition or handshaking with a second radio station, and roundtable QSO's with more than two stations can be enjoyed.

Since the bandwidth is equal to the baud rate and the chosen baud rate is 31.25 we can now use a bandwidth of 31Hz and a narrow CW filter can be employed. The normal bandwidth of other digital modes is in the order of 300-500Hz. It uses the sound card of the computer instead of a TNC and the software can be downloaded, free of charge, from:

<ftp://det.bi/ehu/es/pub/ham/psk31sbw.zip>

<http://www.aintel.bi.ehu.es/psk31.html>

The simplest and quickest computer to radio interface is to connect the Line Output from the Sound Card to the transceiver audio input with a 100:1 voltage divider to reduce the voltage output, and the Sound Card Line Input to the audio output of the radio. You can use the VOX to switch from Receive to Transmit. To setup this arrangement, adjust the sound card output level using the computer 'mixer' control until maximum transmit power is reached, and the ALC is just starting to read. Then tune to a strong carrier and adjust the soundcard input gain until the red line goes away as observed on the spectrum display. (waterfall indicator) This procedure is covered in great detail in the PSK31 Help files under "setting up the sound card".

The circuit shown on Page 2 shows the method I used which isolates the sound card LINE IN and LINE OUT from the radio using a couple of Radio Shack transformers, and a 2N2222 transistor to switch the PTT radio line triggered by the RTS line of the active computer Com Port. It will be noticed that the interfacing is the same as that for the win95sstv program that I discussed in the SSTV article in this month's TARA NEWS. You can therefore simply boot up the required software and run either SSTV or PSK31 without changing your interface wiring. The schematic I include here shows a switch that selects between *Computer* and *Ham Mode*.

-- Continued On Page 2 --

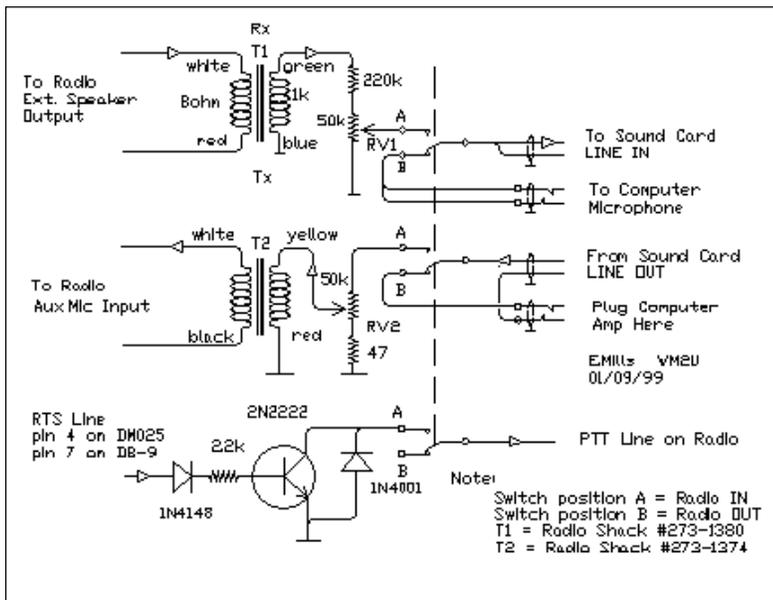
Attention!

TARA's web site now offers you the TARA NEWS for your viewing or downloading. Come check it out at our new address!

<http://www.n2ty.org/>

Inside this Issue:

- **FCC Cracks the Whip** - FCC Official "visits" 3894.5 KHz
- **SSTV For Free** - check out this software
- **TARA Raffle Results** - congratulations to the winners!
- **WB2TCV Guest Speaker for February** - radios on the railroad
- **Selecting a New HF Rig** - the Bucky way!!



It is strongly recommended that you download the file psk31sbw.zip and install it. Then print off the help files. I will not repeat any of the details that can be found in these files since Peter, G3PLX has done an excellent job. As well as the setup instructions for the sound card and software there is a very good section on the Modulation Theory, the New Character set and a General Overview of PSK31.

The calling frequencies that have been decided upon for the time being are 3580.15kHz, 7070.15kHz, 14070.15kHz, 21070.15kHz and 28070.15kHz. From the PSK31 help files Peter, G3PLX

suggests using USB on all bands. The general consensus in North America is to continue using LSB as always. We have started a new reflector. "The TARA PSK31 Reflector" and subscribing is a must. You will find this at: <http://www.n2ty.org> or <http://www.qsl.net/wm2u>

To get you up and running fast

WM2U's Tip List

- Set sound card sampling rate to 8000Hz
- This must be at least a 16 bit sound card.
- No signal observed? Check your WAVE slider is not zero.
- Set Rx and Tx frequencies to 1000Hz
- If using LSB check the 'Inverted QPSK' box.
- Too much noise? Try using a narrow CW filter.
- Using a Word Processor, write your buffered messages and save them as ".txt" files, placing them in a folder called 'buffers' created in the main PSK31 folder.
- READ THE HELP FILES.

NOTE:

- Your sound card output must NOT overdrive your MIC input.
- Do not overdrive the sound card input from the Radio.
- Get used to the Waterfall and Phase indicators for tuning.
- Be patient. This is a new mode. You will not find all the features you are used to yet!

These values work but since this is such a new mode things will probably change in the near future. I hope this article gives you a taste of the excitement that this new mode is generating. If you need help please feel free to contact me at wm2u@n2ty.org or, join the TARA PSK31 Reflector.

See you there and Enjoy,
73 de Ernie WM2U
<http://www.qsl.net/wm2u>
e-mail: wm2u@n2ty.org



WB2TCV Guest Speaker for February Meeting

Topic: Railroad Radios and Electronics

Carl Roby, WB2TCV will be presenting a program on the new age of communications and equipment used by railroads. If possible, he will have some equipment to demonstrate the telemetry that is used. Much of this equipment is used on what is known today as the "electronic caboose." Carl uses this technology in his work for Conrail, where he has been employed since 1986. He is the lead radio maintainer for Conrail.

Carl is an extra class amateur and a member of the Rip Van Winkle Amateur Radio Society. He maintains the RVWARS K2RVW repeater which is on 147.21 MHz.

We're sure you'll find the presentation interesting and informative. And, we know that you'll give Carl the usual warm TARA reception reserved only for a member of the Rippers!!

Jordan's King Hussein, JY1 - Silent Key

FROM: ARRL Special Bulletin #1, ARLX 0001 February 8, 1999

Radio amateurs around the world joined in mourning the death over the weekend of Jordan's King Hussein, JY1. Hussein, 63, died Sunday morning. The Middle East's longest-reigning ruler, he'd been Jordan's king for 47 years, taking the throne when he was just a teenager. His son, Abdullah, 37, succeeds him.

Hussein had earned a reputation as a catalyst for peace and as a conciliator in the Middle East. President Clinton is among the heads of state from around the globe gathered in Jordan today for King Hussein's funeral.

Hussein was a life member of the ARRL. ARRL Executive Vice President David Sumner, K1ZZ, called him "an enthusiastic radio amateur whose support was invaluable to us in obtaining new amateur bands at the 1979 World Administrative Radio Conference." Sumner recalled that in May 1979, International Amateur Radio Union President Noel Eaton, VE3CJ, was invited to Amman to meet with King Hussein.

"Jordan's support of the Amateur Service was much in evidence at the conference that fall, and was a crucial element in our success," Sumner said. The WARC-79 resulted in Amateur Radio's gaining the 30, 17, and 12-meter bands. That same year, JY1 was featured in the film, "The World of Amateur Radio." Hussein regarded his 1983 contact with Owen Garriott, W5LFL, on board the Space Shuttle Columbia, as a high point in his Amateur Radio activity.

King Hussein also participated in the historic 1995 joint Israel-Jordan JY74X operation on Mt Nebo, where hams from both countries participated in a Field Day-like operation. The King put in appearances both on the air and in person, much to the delight of the participants and those waiting to work him and JY74X.

Hussein's friend Bruce "Blackie" Blackburn, W4TA/JY9BB, of St Petersburg, Florida, called him "one of the world's most respected amateurs" and recounted many stories about King Hussein as a person and an avid Amateur Radio operator. "He was a wonderful guy, interested in everything and everyone," he said.

Blackburn said King Hussein "promoted Amateur Radio to the hilt in Jordan" and saw to it that Amateur Radio classes were instituted in elementary schools. King Hussein also dropped in on meetings of the Royal Jordan Radio Amateur Society in Amman. King Hussein also was involved with the early satellite experiments.

Hussein had been active in recent months from the US while seeking cancer treatment at Minnesota's Mayo Clinic. A QSO with JY1 was considered by many hams to be both an honor and a privilege. His elegant QSL card was prized. AMSAT Area Coordinator Bruce Paige, KK5DO, in Houston, worked JY1 while the king was in the US last summer. "That was a very exciting moment for me," he said.

Pat Kilroy, WD8LAQ, says he enjoyed a three-minute contact on 20 meters with King Hussein in the fall of 1995. "JY1 was traveling aeronautical mobile, enroute to the United Nations. He insisted on me addressing him simply as 'Hussein'," he said. "In one of the oldest traditions in Amateur Radio, Hussein upheld that this kinship transverses not only age and nationality, but also between citizen and head of state.

All members of the Jordanian royal family automatically have Amateur Radio privileges in Jordan. Although the new king does not appear to have a call sign, King Hussein's widow--the American-born Queen Noor--is JY1NH. King Hussein's brother, the former Crown Prince Hassan, is JY2HT, while his cousin, Prince Raad, JY2RZ, is chairman of the Royal Jordan Radio Amateur Society.

FCC DISMISSES EXTRA-CLASS APPLICATIONS; CONTINUES INVESTIGATION

While it continues its investigation into alleged "irregularities" in the administration of two exam sessions in Pennsylvania, the FCC has dismissed the pending Amateur Extra-class applications of four individuals. Letters went out in late January to Elmer Smith, N3UNR, of Effort, Pennsylvania; Kenneth Sharp, AA3RU, of Boyertown, Pennsylvania; Philip DiGenova, N3UNS, of Bartonsville, Pennsylvania; and Wayne Bowden, formerly AA3RT, of Millsboro, Delaware. The FCC last fall had set aside the four Extra-class grants while it looked further into the matter.

"The Commission discovered irregularities in the administration of the examination by the Volunteer Examiners," advised FCC Legal Advisor for Enforcement Riley Hollingsworth, K4ZDH, in letters sent January 27.

"Serious questions about the examination process remain, and therefore your application for an Extra Class license has been dismissed." The FCC plans to continue its probe into alleged testing irregularities at the two W5YI-VEC sessions, including allegations that examinees might have been coached or given test answers.

Hollingsworth advised the four applicants that if they still wished to upgrade, they would have to take a new exam under another VEC and VE team. But he cautioned three who took their exams at an October 6 session in Warminster, Pennsylvania, that "additional issues" about the initial exam session "may be raised at that time."

In addition, Hollingsworth told Bowden that the FCC had information that he had been operating as AA3RT after the four applications had been set aside by the FCC last November 10 pending a final determination. Prior to the October 4, 1998, examination session in Spring City, Pennsylvania, Bowden did not hold an amateur license. "You are cautioned that such operation is unlicensed, and will result in monetary forfeiture," Hollingsworth wrote. "It would also seriously jeopardize any future applications to become an Amateur Radio Operator."

In the November 10 letters from the FCC, all four applicants were asked to return their Extra class license documents and Certificates of Successful Completion of Examination (CSCEs). Bowden allegedly still had not done so as of January 27, and Hollingsworth said the FCC would not process any future applications until he did. As a result of the latest FCC action, Smith and DiGenova were formally bumped back to Technician class, while Sharp was returned to Advanced and his former N3TPN call sign. The AA3RT call sign no longer appears in the FCC database. Tnx: ARRL Letter

FCC'S HOLLINGSWORTH IS NET GUEST

The FCC's point man for Amateur Radio enforcement, Riley Hollingsworth, K4ZDH, put in a guest appearance January 29 during a session of the South Carolina Single Sideband Net on 75 meters. "They contacted me and asked me if I'd take a few minutes to talk with them," said Hollingsworth, who's a South Carolina native. Hollingsworth said he told those gathered for the net "where we've been, where we're going, and what we're trying to accomplish" in terms of ham radio enforcement. He said he expects to return to

the airwaves from time to time and welcomes invitations from other organized nets. (His e-mail address is: rholling@fcc.gov) Hollingsworth's unannounced and unexpected appearance on 3894.5 MHz January 13 to discuss compliance and enforcement created a stir within the Amateur Radio community. Tnx: ARRL Letter

Editor's Note: Kind of sounds like Mr. Hollingsworth is intent on returning the FCC's on-the-air presence back to the day's when the FCC didn't take no bull! Let's hope so!!

SSTV

SSTV for free?

Have you ever tried SSTV?

Written By: Ernie Mills, WM2U
e-mail: wm2u@n2ty.org

Are you looking for a new mode to play with?...well I was but who has money for a fancy Robot type SSTV system? I was rag chewing with a friend of mine, Frank VE4ZN, who put me onto a web site that will let you download a free (unregistered) version of their SSTV software, and the hardware requirements, other than a computer system and an HF rig, are zero. That's right! You don't need fancy Modulators, Demodulators or even a TNC. We had found W95SSTV.

W95SSTV is, in a nut shell, a Slow Scan TV program written for computers running WIN95 or NT. It uses the computer's sound card as an Analog-to-Digital converter for receiving, or a Digital-to-Analog converter for transmitting. It is a true 32-bit program and will share processor time and resources with other 32-bit programs such that you could surf the web, run a word processor or whatever at the same time as running SSTV. You will find this at:

<http://www.siliconpixels.com/w95sstv/w95sstv.htm>

But first check out your computer. The system requirements are:

- CPU, 80486-DX/2/66 or higher. Pentium Preferred.
- RAM, 8 mb minimum, 12mb or more preferred.
- SOUND CARD, 16bit sound card with Windows 95 drivers installed.
- VIDEO, HighColor or TrueColor video at 640x480 resolution or higher.
- The more muscle your system has the better it will be!

It supports most of the common modes, Scottie 1&2, Martin 1&2, Robot 36&72, AVT 24,90&94 and Wrasse. It stores 60 thumbnail images for TX and handles 4 on RX. You can prepare a picture while you are receiving or transmitting another. It has the ease of full windows conveniences like drag-and-drop, mouse control, Save and Load windows, and many more functions. The system can Auto-Receive pictures, modes, and will even sequentially number the images in Auto-Save Mode.

Editor's Note: If you'd like to find some other SSTV programs, try going to TARA's web site at: <http://www.n2ty.org/>
Then click on 'TARA LINKS' and enjoy!

Congratulations

N2YQW

Many thanks to those of you who helped TARA with its most recent raffle. And too those of you who purchased our tickets, we THANK YOU!

At the same time we'd like to congratulate Hollins, N2YWQ, for the incredible job with this raffle. Hollins not only acted as committee chairman, but he also sold the most tickets!

The names listed below are those that were drawn at the January 19 meeting. The winners were:

- **1st PRIZE - 25" Color TV**
Curt Breneman, KC2EBP
- **2nd PRIZE Entertainment Book**
Robert Jones, WB2SWA
- **3rd PRIZE - Mac's Restaurant Gift**
Dianne McDermott

On behalf of Hollins, N2YQW, he'd like to thank everyone for their participation and interest with this fund raiser. He also expressed his thanks to Sear's Co., Rem Printing and Mac's Seafood Restaurant of Cohoes, for their assistance with this fund raiser.

After all expenses, it looks like TARA will have nearly \$750.00 to purchase VHF/UHF equipment for emergency communications and Field Day use.

Again great job Hollins, and we hope others in our club will step forward and show the same leadership that you have exhibited.

Editor's Note: If anyone has any great leads on some good used VHF/UHF radios, or antennas, please contact Hollins immediately.

What's Making News

Online Brokers Face Probe by New York

The Attorney General of New York said he will investigate the online brokerage industry. Eliot Spitzer said his office has received consumers' complaints that they lost hundreds of thousands of dollars when online trades were not processed. Spitzer said he has sent letters to several online firms asking for information about their services. "The public knows there are always risks in investing in the stock market," he said. "But part of that risk should not include questions about whether trades will be executed promptly."

Dell Indicates E-Commerce Plans

Dell Computer's success selling custom-designed computers on the Web has whetted its appetite for more e-commerce. A review of recent domain registrations issued by Network Solutions shows Dell has registered "Dellauction.com," perhaps indicating plans to join the online auction sites to clear out its own inventory, and perhaps that of partners. The domain registration was reported by Infonautics Inc.'s CompanySleuth.com service.

CompUSA Plans Net Spin Off

CompUSA will separate its direct sales business into a stand-alone company strongly tied to the Internet. CEO Jim Halpin has told analysts the company's sales over the Internet grew 100 percent in January, Computer Retail Week magazine added. Halpin went on to describe the Net as "one of our fastest growing businesses." CompUSA's Direct division booked \$83 million in sales in the latest quarter, a 48 percent gain from the previous year. Most of that was in mail order, Halpin said.

Viacom's MTV Wants Its Imagine Radio

MTV Online is reportedly buying Webcaster Imagine Radio. The investment follows MTV's unsuccessful effort to purchase online music site Spinner.com, The Industry Standard reported. Spinner this week announced a \$12 million financing round from Sony Music Entertainment, Intel Corp. and Amerindo Investment Advisors. Imagine Radio was launched 11 months ago by Imagine Media.

COMPUTER TIPS EVERY PICTURE'S WORTH A THOUSAND BUCKS

This Month's Term: Dye-sub printer

A dye-sub printer works by heating ribbons of colored ink and then transferring the ink to paper--specially coated, expensive paper. The result is true photo-quality output but at a price that might make most of us wonder why you wouldn't just take a picture in the first place. Dye-sub, by the way, is short for "dye sublimation." Another term for the same printing technology is "thermal dye transfer."

FIFTY-TWO TIMES FASTER IS BETTER

Kenwood Technologies will soon sell its Kenwood 52X TrueX CD-ROM drive, the second in a family of high-performance drives based on Zen Research's TrueX technology, the Crustacean has learned. Unlike other "Max" CD-ROM drives that reach top performance only on the outermost tracks of the disc, the Kenwood 52X TrueX CD-ROM drive delivers a typical transfer rate ranging from 6750 to 7800KB per second across the entire disc.

"The Kenwood 52X TrueX is just the beginning of a stream of exciting new products from Kenwood that will deliver superior performance, exceptional value, and the quality of the Kenwood brand name" stated A. J. Hart, senior vice president of Kenwood Technologies.

The 52X TrueX CD-ROM drive is also available direct to consumers at a suggested retail price of \$129.95 through CompUSA, Ingram Micro, and other major distribution channels.

W2VS Picks a Rig

Part I of II

Written By: David Pascale, W2VS

e-mail: w2vs@n2ty.org

Purchasing an HF all mode transceiver can be a daunting task for even the most experienced amateur. Each candidate has a dizzying array of features and specifications. Some offer particular features at the expense of others, unless you want to open your wallet and spend in the \$3,000 range, and I wasn't ready to do that. So I decided to limit my budget (for the sake of family unity) to between \$1,000 and \$2,000.

My preliminary search found that most of the HF rigs on the market below that price were missing one or more of what I considered to be "absolute must features." This narrowed the universe of potential candidates to five:

Yaesu FT-847

Yaesu FT-920

Icom IC-746

Kenwood TS-570D/G

Icom IC-756

There are other rigs in this price range, but for reasons I won't bore you with I eliminated them. Actually, for the sake of brevity, let me immediately toss out three of the rigs listed above. I thought the Icom IC-756 got a lukewarm review from *QST* so it was eliminated. The Kenwood TS-570D/G is a fine rig but I also decided that I was going to purchase a rig that had at least two meters, in addition to the now typical 160-6 meters. Six meters has been more and more a band that has been added to today's multi-mode multi-band transceivers. And of course, the latest wave of offerings now frequently include two

meters and 440 MHz. Not having two meters eliminated the Yaesu FT-920 as well. The two rigs left were the Icom IC-746 and Yaesu FT-847.

I'm sure that most old-timers in the hobby are falling out of their easy chairs and rolling on the floor at just about this point of reading this article. I am sure this is not the orthodox way to choose a rig, but I am a casual user who dabbles in all bands and all modes, so band availability was a big factor in my decision. Let me digress for a moment and discuss my operating preferences. I am not an HF or VHF contester, but I have been known to submit a score for November Sweepstakes. I enjoy CW, but I am not a DX hound that thrives on fishing faint CW signals out of the hash. I like HF sideband, but if I had a rig that offered 80 and 40 meter phone capability, I would probably be happy. I have done a little satellite work but I will never be big bird chaser.

I am not saying that things like receiver sensitivity and dynamic range are not important! They are, as are the other specifications, but you don't LISTEN to a receiver's sensitivity rating, you listen to the receiver. What I mean is that if your enjoyment of the hobby means you can comfortably use a receiver that is deaf by another ham's standards, you should not let that stop you from buying that rig.

So I narrowed my choices down to two transceivers. Would I buy the Icom IC-746 or the Yaesu FT-847? Next month I'll tell you..and I'll also tell you why I picked the rig I did. The answer might surprise you.

--Continued Next Month--

TARA'S BOOKSTORE



Thinking of buying some Ham Gear? Get the buyer's guide on: 33 hand-helds; 52 Mobile and Base Station models covering 6 meters and up; And More!

All reviews were published in *QST* between 1990 and 1997. You'll find: Appendices that list the issues of *QST* that include the reviews of over 300 radios, station accessories, antennas, amplifiers and much more, cross-referenced by equipment type and manufactured.

ARRL VHF/UHF Radio Buyer's Sourcebook...#6184 \$12.00 + Tax

Field Day Preparations Continue

HF SSB Operating Tips

Well, the big day is getting closer and closer. I thought I would spend this month talking about voice operations on HF.

During Field Day, just about all voice operation on the HF bands takes place using Single Side Band (SSB). As you may remember from studying for your amateur radio license, SSB has a rather narrow bandwidth compared to FM and AM and has a "punchy" quality that makes it ideal for long-distance HF communication.

One of the questions that always comes up with new HF operators is "How do I know when to use upper side band (USB) and when to use lower side band (LSB)?" All you have to remember is 10MHz. If the frequency is ABOVE 10MHz, use UPPER side band. If the frequency is BELOW 10MHz, use LOWER side band.

OK, what about 10MHz itself? Transmit here and you'll be interfering with WWV and you'll be in big trouble. For the record, WWV transmits in AM (upper and lower sidebands plus a carrier).

When using SSB you have to keep the bandwidth and the edges of the amateur bands in mind. To be safe, it will be our policy to go no closer to the band edges than 5KHz. For example, the lower band edge for SSB on 20 meters is 14150KHz. We will not operate below 14155KHz. This will give us a safe margin. Other countries have different rules than the U.S., so you may hear voice conversations below 14150. Don't make the mistake of trying to get the contact!!

Remember, we will be operating as N2TY and we will have an extra class control operator at all times. This means you can use the extra class bands.

Tuning on HF can take a little practice. Since there is no carrier on SSB to tune in on, you have to do it by ear. Listen to the signal and try to get the voice to sound as close to natural as possible. Sometimes the higher pitch of a YL voice can throw you off. However, the YL's seem to attract more attention, so we need to take advantage of that.

When tuning across the band, make sure the RIT control is at zero or off. This stands for "receiver incremental tuning." On some radios it is known as the clarifier. What this control does is shift the receive frequency without shifting the transmit frequency. For example, if the readout is 14275, you can adjust the

RIT to receive slightly above or below this frequency, but you will still transmit on 14275. This is often used in net operations when the station talking is slightly off frequency. You shouldn't need this for Field Day.

When initially getting ready to transmit, you should check the SWR to be sure it is as low as possible. If the tuner is manual, have an experienced operator show you how to use it. Some of our rigs have automatic tuners, so you just have to push the button. You should check the tuning as you move up or down the band.

Another thing to check is the ALC level. Switch the meter to ALC readout. Do a test transmission in the same voice you will use for making contacts. Adjust the MIC GAIN control so that the meter stays just inside the maximum ALC area. Too little gain, and you won't modulate enough to get a good signal. Too much gain and the power meter will read a good output power but your signal will splatter wasting that power and interfering with stations on adjacent frequencies.

All of our radios have filters in them for SSB and CW. You should use the filter that is approximately 2KHz for SSB work. There are narrower filters for CW and no filters are used for AM and FM.

Some of the radios have an IF shift control. This shifts the center frequency of the IF stage. Don't worry about the technicalities, what it does is make the voice being received sound either higher or lower pitched than it normally is but, most importantly, it moves you away from an adjacent signal that may be interfering. Remember to center this control before changing frequency.

Don't be afraid to ask questions. Our main purpose is education!! You can log for a more experienced operator to learn SSB operations. But, be sure to ask the operator why he/she is doing what he's doing. To our veterans, please take the time to assist the inexperienced operators. Encourage them to take a turn at the mic. Show them how to hunt and pounce.

Remember, we're there to learn and have fun doing it. Oh yeah, we're there to eat too!!!

73 de Tom N2TR

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 Editor-in-Chief: Perry White
 Editor: W.J.Eddy, NY2U (518) 273-9248
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VHF/UHF EQUIPMENT CHAIRMAN: Hollins, N2YQW.....UNLISTED

SERGEANT OF ARMS: Jon LaBarr, KB2UKV.....427-6234

TARA NEWS

Troy Amateur Radio Association, Inc
 P.O.Box 1292
 Troy, New York 12181-1292

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"The Home of Uncle Sam"

Next Meeting: February 16, 1999
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