



The *Blurb*



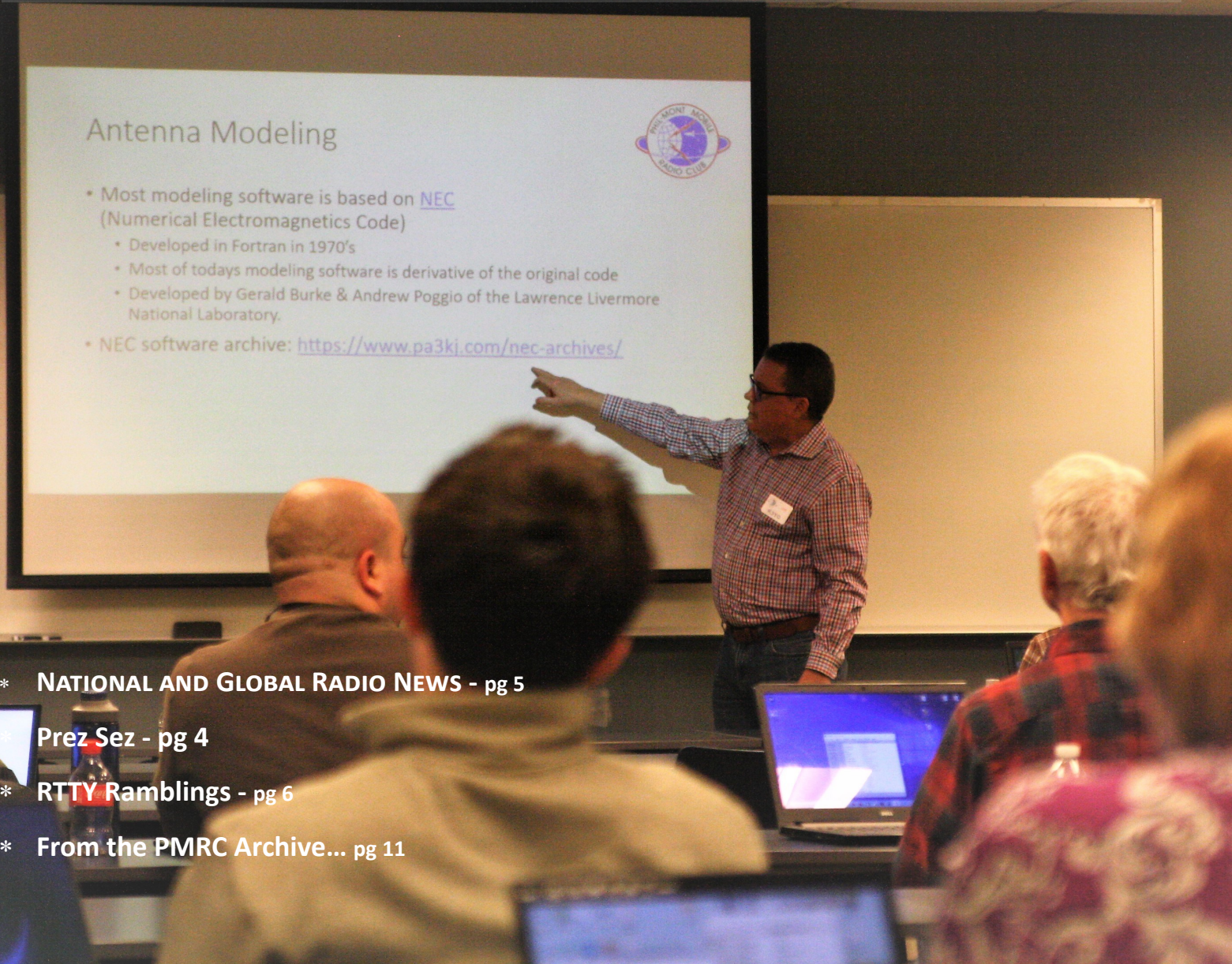
Newsletter of The Phil-Mont Mobile Radio Club
Public Service Since 1949

Volume 73 Number 04

www.phil-mont.org

EZNEC Antenna Modeling by Jim - K3YO

Great Work Jim K3YO! If You Weren't There, You Are Now Square! -Story and pics on pg 14



Antenna Modeling



- Most modeling software is based on [NEC](#) (Numerical Electromagnetics Code)
 - Developed in Fortran in 1970's
 - Most of today's modeling software is derivative of the original code
 - Developed by Gerald Burke & Andrew Poggio of the Lawrence Livermore National Laboratory.
- NEC software archive: <https://www.pa3kj.com/nec-archives/>

* NATIONAL AND GLOBAL RADIO NEWS - pg 5

Prez Sez - pg 4

* RTTY Ramblings - pg 6

* From the PMRC Archive... pg 11

Get the Net!

There's no ham radio without YOU!

Get on the air and share! Operate, cooperate, & celebrate ham radio!

Phil-Mont's Drive Time Net

Join us on the air every
Monday to Friday 1700
to 1800 EDT on:

- 147.030 MHz (+offset 91.5 PL)
- Bucks County and North PL 88.5 (147.030)
- [Echolink W3QV-R](#)
- [ALLSTAR 47970](#)

CLUB REPEATERS

VHF: 147.030 MHz (+offset 91.5 PL)

Bucks County and North PL 88.5
(147.030)

UHF: 444.80 MHz Yaesu System
Fusion WiresX

[ECHOLINK W3QV-R](#) &

[ALLSTAR 47970](#)

[EMAIL REPEATER COMMITTEE](#)

Sunday Morning Nets

*Three Nets on three
bands, all in a Row! Tune
in on any or all for a
Sunday morning 'Hello!'*

0930 EDT:

- 147.030 MHz (+offset 91.5 PL)
- Bucks County and North PL 88.5 (147.030)
- 2m, [Echolink W3QV-R](#)
- [ALLSTAR 47970](#)

1000 EDT:

75 meter Net (3.993
MHz LSB +/-QRM)

1030 EDT:

10 meter Net (28.393
MHz USB +/-QRM)

CQ! CQ! CQ!



**Calling CQ for New
Net Control
Operators!**

[Click Here and Sign Up To-
day! It's a Fun Way to Meet
Our Members!](#)

April Net Control Schedule

4/3 Sal - NC3U
4/10 Ed - KB3IV
4/17 Frank - W3MHP
4/27 Ed - KB3IV

Club Business

Club Directory Update

Your 2022 Dues Invoice/Directory Information Sheet was sent to you in a separate mailing. **Please verify the information and return it with your dues & optional P.M.R.C. SCHOLARSHIP FUND DONATION to: PMRC PO Box 404 Warminster, Pa 18974 OR submit using PayPal.** Your early reply will save the club additional expenses and will speed-up the publishing of the 2022 P.M.R.C. Directory.

MEMBERSHIP STATS

At press time P.M.R.C. has:

121 Fully Paid Members

7 Family Members

0 Youth Members

Honorary Members:

Elaine Spencer

Richard Moll - W3RM

New Members Pending:

** This Space Intentionally Left Blank**

APRIL 2022 BIRTHDAYS

01 Mark Thomas - KC3DRE

05 Rob Moore - N2RM

06 Andrew Furlong KC2PMW

Vincent Pisacane - WB3IDW

Leslie Owen - KB3PWC (XYL AA3JY)

08 Jackie Chedeville (XYL W3GQD)

Joe Fitzmyer - KC3ECE

George Gianios - WB3DZZ

10 Michael Elmaleh - K3HIJ

12 Larry Bennett - NJ3Z

15 Kent Simmons- N3BKR)

16 Janet Souza - W3JLS

Stanley Dworak - W3TTY

21 Brad King - WB3BPI

22 Susan Hoch (XYL W3UI)

Jack Livezy - KC3EOO

25 Vicki Hollett (XYL WA2UAR)

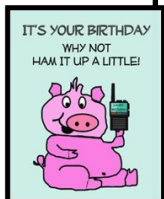
26 Jim McCusker - K3YO

27 Stephanie Malone (XYL WA3GM)

28 Gwen Patton - NG3P

29 John Cunnion - WB3JAC

30 Al Kaufmann - K3ZMJ



NEXT GENERAL CLUB MEETING:

Wednesday, April 13th

IN PERSON *ONLY*

At the [Giant Supermarket 315 York Rd.](#)

[Willow Grove, PA 19090](#)

7PM Start - (6PM Yack & Snack)

March Board Meeting Minutes

Call to order by AJ3DI at 7:10 PM

Attendance: AJ3DI, NC3U, K3RON, N3QV, KC3GJX, K3YO(partial)

Quorum NOT MET - K3YO left before votable actions discussed.

President's Statement:

Continue with the current direction of empowerment for ALL. Entice and support EVERYONE to utilize our assets and create activity and events. HELP when you can. Do NOT offer opinions when NOT participating. Assist/participate or remain SILENT. We are not here to legislate; but rather we are here to FACILITATE. If any issues arise, THEN we will address them. NOT BEFOREHAND.

Committee Reports

Treasurer - EMAILED info (would like more membership info, paid vs. unpaid) LAST CALL will be made at meeting (MARCH). HamClubOnline will help automate this.

Membership - N/A

Repeater/Technical - N/A

Subcommittee Reports

CONTEST - We should now be CQ recognized Team. Incorporate EVENT play as part of this. 13 Colony is good one. Incorporate mode play as Elmering/Chatter/Workshop/Preso events. examples: cw, digital modes

etc.

OLD Business: PDRA - They rebooted on their own - 6 month trial period. See schedule in Blurbs.

NEW Business:

-Replace KB2ERL Board Position for rest of term(2022). Any additional choices, please confirm WILLINGNESS to serve before May Board meeting for final choice. *Tabled until quorum is met.*

-Quarterly(ish) Saturday 3 hour WORKSHOPS booked at Giant. Workshop subcommittee to be Chaired by Greg - KC3SMW. Dates booked (11am to 2pm): 4/9, 6/11, 9/24, 12/17.

-NEW BADEGS and link to be posted for folks to get NEW style if they choose.

-Membership Committee chair - look for volunteers

-Field Day Prep (YES, it's almost here):

- Chairperson
- Kitchen
- Tower?
- New Rules promote APATHY - we have to work even harder.
- [HAM CLUB ONLINE](#) - Explore move to HCO for Administrative records. Register and we will collect thoughts at next Board meeting. (Use your club email address. All board members have been added)

Meeting closed at 7:58 local time.

The Prez Sez...

Hello Phil-Mont,

HELP WANTED!

Membership Chair: *Requirements: Desire.* Training available!

Field Day Captain: *Requirements: Desire.* POSITION FILLED - Bill W3AOK

Of course I am extremely happy and excited about all the member/community activity and empowerment. But the next step is getting more folks involved. Making folks want to get involved. Our biggest enemy is apathy.

Our open policy means just that. Members are at the top of the list. The ham community is second on the list. Our role as Club management is to take care of the business of the club and to ensure that everything runs smoothly. The list as defined above determines what 'runs'.

If you are interested in these positions please email the groups.io. I will start a Help Wanted thread.

An example of this is the NEW Saturday PMRC Radio Labs. KC3SMW Greg will be chairing these, so please if you want to help and get involved reach out to Greg.

The dates for the PMRC Radio Labs are:

Saturday April 9th Arduino
Saturday June 11th Antenna Build
Saturday October 1st To be determined
Saturday December 17th To be determined
TIME: 11am to 2pm

Location: Giant Willow Grove (Our Meeting place and SPACE)

If the weeknight monthly meetings don't work for you, please visit us at our Saturday DAYTIME events.

2022 ARRL Field Day is June 25-26

Well I know one thing we **don't** need for Field Day.....that's a cook! Steve WU3I has announced that he will be setting up the Field Day Food Tent this year. I'm getting hungry already. More info will be posted on the website once I update all the Field Day information.

Field Day will be here shortly. Talk about it on the air. We set up starting at noon on Friday June 24th. Help is always needed.

Our Field Day location is Fort Washington State Park at the Organized Group Tent sites A&B. Lot #4 in the following map:

http://elibrary.dcnr.pa.gov/GetDocument?docId=1753184&DocName=FOWA_ParkMap.pdf

(cont'd pg 10...)

LATEST RADIO NEWS FROM NEAR AND FAR

Field Day Rules Updates

ARRL#2241, Newington, CT - ARRL field day chairman Vincent VonSchnoz announced today the following new Field Day rules that will go into effect this field day, June 25-26. In addition to the already published limitation of 100 Watts transmitter power, a new computerized logging program will be adopted. The "Probability Log" will be distributed by the ARRL via download from the ARRL web site and is only available through the ARRL. Use of the Probability log is optional, but the special bonus consideration is only obtainable by submitting your score via the Probability logging program. The program is usable by both Windows and Apple computers. VonSchnoz explained that the Probability Log was first proposed after the league adopted the 100-watt field day power limit. "We didn't think it made any sense until we analyzed the effect of reducing the maximum field-day power to 100 watts. Then it all became clear." VonSchnoz further explained that analysis showed there was a specific probability that field day participants would have lower scoring when they operated with less transmitter power. This data was plotted and showed a direct correlation and graphical curve between transmitter power and probability of radio contacts. VonSchnoz said, "We immediately recognized a need for probability adjustments to the scoring." The ARRL has developed a logging program that automatically adjusts the participants score to account for probability corrections. The field day operator simply needs to enter the transmit power level into the logging program. The final score will be adjusted in the summery report that is submitted to the ARRL along with other required paperwork. VonSchnoz further explained that the lower the transmit power, the higher will be the probability scoring adjustment. For those hams that do not have a transmitter at all, simply enter a zero for the transmitter power level. That way ham clubs that do not have access to any transmitter can still generate a respectable field day score without making any contacts at all. VonSchnoz said, "This is exactly the shot-in-the-arm that small ham clubs need to revitalize their participation in Amateur Radio Field Day." ❖

Reported by: Woody Brem – K3YV

CQ to Limit Contest Participation by Stations in Russia, Belarus and Donbas Region Due to Russian Invasion of Ukraine



STATEMENT OF CQ COMMUNICATIONS, INC., REGARDING CQ CONTESTS AND THE RUSSIAN INVASION OF UKRAINE

FOR IMMEDIATE RELEASE: March 17, 2022 Contact: Rich Moseson, W2VU, Editor w2vu@cq-amateur-radio.com

(Northport, NY 17 March, 2022) – CQ Communications, Inc., publishers of *CQ Amateur Radio* magazine and sponsor of the CQ World Wide DX and WPX Contests, announced today that in light of the invasion of Ukraine by Russia and Belarus, it will not accept competitive entries in any of its sponsored contests by amateur radio stations in Russia, Belarus or the separatist Donbas region of Ukraine (unofficial D1 prefix). Logs submitted by these stations will be accepted only as checklogs. In addition, contacts with these stations by other participants will have zero point value and will not count as multipliers.

This is in line with a similar action taken by the Radio Society of Great Britain, following the lead of other international sports federations around the world.

"We regret the need to take this action," said CQ Publisher Richard Ross, K2MGA, "and recognize that the vast majority of our fellow amateurs who are affected by it are innocent bystanders who had no role in their government's decision to invade another sovereign country. However, in light of the great suffering being inflicted without cause on the people of Ukraine by Russia's leaders, we cannot in good conscience stand by and do nothing."

The CQ policy will take effect with the 2021 CQ WPX SSB Contest on March 26 and 27. Future events will be considered on a case-by-case basis, depending on the situation at that time. ❖

Some RTTY Ramblings

By Bob Moyer - AB3GB

With the increasing interest in digital modes there also seems to be a renewed interest in RTTY. I remember when PSK31 was first developed, it was considered by some to mark to the end of RTTY. Digital modes are like fashion. What is in today may be out tomorrow. I remember when JT65 was all the rage. Now it is probably FT8 that has the largest world-wide following. The great thing about our hobby is *“if there is something that interests you, Ham radio has a place for you to do it.”*

Many newer Hams have rediscovered RTTY and its interest in appears to be rising. I have no data to support this, other than increased discussion heard on local nets. I'm sure someone could look at the number of recent RTTY contest logs submitted as one indicator. The modes used by for ARRL Bulletins may be another. The ARRL lists *Digital Transmissions* on 80, 40 20, 17, 15, 6 and 2 meter frequencies.

www.arrl.org/digital-transmissions

Bulletins are sent daily (M-F) using 45.45-baud Baudot, PSK31 in BPSK mode, and MFSK16. The most up-to-date information can be found on the ARRL web site. The term RTTY does not appear on that web page. The term Baudot is synonymous with the term RTTY in common usage. Neither is precise to describe the actual transmission.

Many people use the term *mode* differently or to describe different things. My focus in this article is to use terms and descriptions as they are commonly used in Amateur Radio Instruction or Operation Manuals. It is also based on my own experiences with some of the better known radio brands.

From: The *Official ARRL License Manual*, 5th Edition in the Glossary of Keywords –

Radioteletype (RTTY) – *Radio signals sent from one teleprinter machine to another machine. Anything that one operator types on his teleprinter will be printed on the other machine. Also known as narrow-band direct-printing telegraphy.*

The term *telegraphy* appears in the FCC Emission Designators in both F1B and F2B emissions designators. F1B describes an emission using frequency-shift keying without a modulating audio tone (FSK RTTY) and F2B which uses modulating audio tones (AFSK RTTY).

Part 97 of the FCC Rules also refers to emission types. RTTY is listed as a type along with CW, phone, data, image and MCW. These type names are the ones you see on most Band Plans. They are also the terms your radio manufacturer will likely associate with the term Mode.

The radio's operating mode is not the same as the mode term used in Digital software programs. It is no wonder there can be some confusion with the terminology usage.

Popular radio “modes” are the Single Sideband (SSB : USB, LSB) AM, FM, and CW. Many radios also include Data modes and RTTY as specific Mode choices.

This article is intended to focus on RTTY and how you as the radio operator set up your radio. As in most things, there is more than one way to solve a problem.

From the Radio's perspective (somewhat abstracted)

From the radio's point of view, these mode selections affect primarily signal bandwidth and filter settings. They also affect, if applicable, other radio features such as the audio source input, and build-in CW and RTTY and PSK/MFSK decoders and encoders. Not all radios support all these features. Be sure to download the operating manual for any radio you plan to buy and read it first. You can usually find all you need to know about what support is built into the radio.

Let's define a **hypothetical HF** radio. For voice you would probably set the mode to LSB for the lower bands like 160, 80, and 40 or

USB for upper HF bands of like 20, 17, 15, 12 and 10. This mode setting determine the filter bandwidth, the center of the pass band, the filter edge slopes and on some radios the displayed frequency of either the carrier point or the center of the sideband. Detail ed discussion is outside the scope of this article.

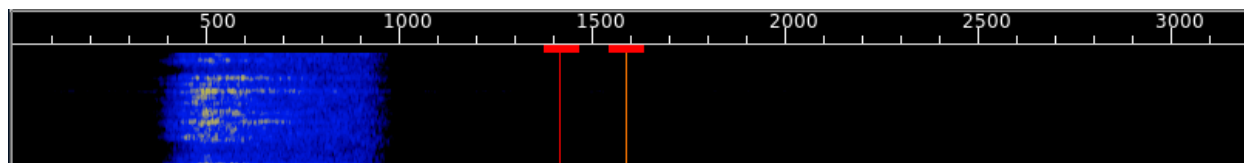
But the filter bandwidth may be important when considering the mode selection in an RTTY discussion.

CW signals have the narrowest bandwidth, RTTY is a little wider and SSB the widest. You may select the CW mode and a filter of 250 Hz for CW operating. A filter of 500 Hz more than covers the width of the RTTY signal and 2800 Hz is not uncommon for SSB. (I set my SSB width at 2400 Hz). To illustrate the effect of the filters, I used my Yaesu 991A radio, internal soundcard, Fldigi waterfall and looked at simple noise on the 80 meter band. In both images the radio's bandwidth is around 500 Hz.

With the Radio's mode as RTTY, the signal expected to be at 2125 – Mark with a Shift of 170 Hz. Looking at the dark blue area, you can see that the frequencies of the expected RTTY signal falls clearly within the filter's bandwidth.



Now, change the mode to CW. The CW pitch is the frequency of the CW tone. For many this is around 700 Hz. (300 – 1050 Hz is CW offset carrier range). On my radio the CW bandwidth was 500 Hz. A tone pitch of 700 is near the middle of the 400 – 900 Hz dark blue area. Like the RTTY case, the radio now expects the CW signal somewhere in the dark blue area.



On a crowded band, you want a filter, just wide enough for the desired signal. Any wider and you would also hear signals above or below the desired signal.

Any radio that allows you to select RTTY as an operating mode probably sets the filters as described above. Additionally, the radio will be set up to operate FSK RTTY with an external TNC or a Computer Program that can do FSK keying.

For the RTTY mode operator, I would suggest using the narrow bandwidth filter to focus on the desired signal. If your radio has an internal RTTY decoder I recommend using it. But remember, you will need to move the VFO frequency until the Mark and Space are located correctly on the radio's tuning indicator.

To transmit an RTTY signal, I recommend using a program that can do FSK (directly key the radio). You may prefer AFSK and there are numerous soundcard programs to use here. One advantage of FSK over AFSK is that you are doing F1B emission using frequency-shift keying without a modulating audio tone.

With no modulating audio tone, you do not need to worry about the ALC and an over modulated signal. Your signal should be perfect since it is only the carrier wave. All you need to do is shift the carrier frequency to produce one tone or the other. The sequence of mark and space tones plus the start and stop bits represent Baudot characters. Radios that support FSK, and I think most still do, will have a connection for the FSK pulse. Use your radio's documentation to identify it. You will find this connection at different places. Look for a pin labeled (FSK) SHIFT. I've seen this connection called FFSK on an ICOM 7000's 13 pin ACC socket and same function called SHIFT on the Yaesu 991A 6-pin DIN. Many radios have additional places to find and connect to that pin and both radios mentioned do. That is why you must read the manual. If your radio can be controlled over USB, it will usually have a setting in the menu system to setup FSK keying using Virtual RTS or DTR pins.

DO NOT connect the sound output from your computer or external sound card to the FSK input. They are entirely different signals. FSK Signals are square waves, HI/LOW (like you learned about your Arduino class) signals that pull the pin LOW to activate the shift.

By the way, when you send CW you ground the send pin (pull the pin to logic LOW) through the Morse code key.

If you do not have a RTTY decoder built into your radio, then you have no choice but to use a Computer program such as Fldigi that decodes the RTTY. And if you do that, you might as well use AFSK since you are running a program anyway. (see AFSK below)

You may wonder how the RTTY signal sends any information without modulating the carrier. While this is material for another article, a short answer is that both the FSK and AFSK (if not over-modulated) will look the same. It is the simplicity of just keying the radio that appeals to the FSK RTTY operators. So in the same way you hear a CW tone in CW mode, you can hear a RTTY tone. If the receiver is tuned to the exact Zero beat frequency then you hear nothing. You have a 0 Hz tone. If you tune the receiver to an offset from the carrier's frequency of several hundred hertz, you hear the beat tone produced which is the difference between the carrier frequency and the offset. With a 700 Hz offset you hear a 700 Hz CW tone.

So I interpret this to mean that the receiving radio is the source of the tone, not the sending radio. Although, you might argue that this is simply the definition of demodulation. So in RTTY radio mode, the offset is 2125 Hz and a properly tuned receiver signal will create the beat tone of 2125 Hz from a RTTY offset of 2125 and a shift of the carrier by 170 Hz will produce a shift of the beat tone by the same amount for the Space. No modulating audio is necessary.

And one final comment. A Yaesu FT DX 3000 has menu settings for the RTTY mode to select a 1275 Hz (in addition to the 2125 Hz) Mark frequency. It also has shifts of 170, 200, 425, and 850 Hz and Normal/Reverse polarity for both transmit and receive. So as protocols go, RTTY can be several different ones and still be called RTTY. Of course the defaults are NOR/NOR/170 and 2125.

AFSK

Audio Frequency Shift Keying or F2B emissions use modulating audio tones (AFSK RTTY). This is probably more common among casual RTTY users than Contesters. Rather than simply keying the carrier, the carrier is modulated by an audio tone.

A carrier is sine wave. An audio tone is also a sine wave. When we talk into the microphone, a complex wave form is produced. Voice is analog. RTTY is considered a Digital mode.

A 10-MHz (10000 kHz) carrier modulated by a 1-kHz tone (sine wave) will produce sideband signals at 9999 and 10001 kHz. The upper sideband is the sum of the carrier frequency and the tone frequency and the lower sideband is the difference. You can consider the sidebands, if not clipped by over-modulation, exactly the same as if you moved the carrier 1 kHz and did not modulate it (as in FSK).

Baudot and RTTY

But RTTY is more than just producing tones at different frequencies. It is a Digital mode because the information is represented by binary digits. RTTY uses a digital code set called Baudot. It was the only digital code (other than Morse code) that was allowed on the amateur bands until 1980. I will describe the code set and the basic protocol. I'll also give a little history lesson.

Baudot has some drawbacks compared to modern Digital modes. There is no parity nor error detection built into the code set or the protocol. It was a 5-bit code set so it could represent 32 different characters (or symbols). These characters were the upper case letters, the digits, a few control codes and punctuation. If you have more than 32 things to represent you need more bits in your code.

If you will allow a little binary number Math lesson:

We have two tones. Each tone can be in one of two states (binary 1 and 0). With 2 states and 5 bits we have 2 to the 5th power or 32 possible bit patterns. So the Baudot code set can represent 32 symbols. ASCII is an 8-bit code set so it can represent 256 different symbols. ($2^8 = 256$).

32 symbols are not enough to represent all the character in the teletype machine. An obvious solution would be to create longer codes. However, when Baudot created his code set, we were still in the infancy of data communications. Teletypes were connected to telegraph wires. Running a 6th wire to carry that bit was just not practical. In fact, most of the infrastructure was a simple two wire circuit. (Baudot's solution is material for yet another article but if you can't wait Google *Baudot Distributer*)

Baudot based his code on the shift key of the typewriter. Each code represented two symbols. If the receiver

was in letter mode (LTRS) the code represented a letter. Thirty-two possibilities and 26 letters, left 6 codes to be assigned other meanings. Two of the codes were used to set the Shift. Shift down set the machine to Letters and Shift up to Figures. The Figures shift of the code set was where digits and punctuation were found.

An interesting RTTY Contesting anecdote.

Contesters send signal reports as part of the exchange. Contesters (and DXer's) often send 59 or 599 regardless of the actual signal. It is just faster!

If the Shift code is sent, but missed by the receiver, 599 will print as TOO. RTTY contesters learned to recognize this as 599 and logged TOO as 599. I think some decoding software even has the logic to do that built in.

Another digital anecdote.

Many CW contesters send 5NN instead of 599. Morse code for the digit 5 is 5 dots. And the Morse code 9 is 4 dashes and a dot. The Morse letter N is dash-dot. Sending NN instead of 99 is considerably faster. Every second counts to the serious contesters! For fun, compare the time to send 599 to the time to send 5NN using standard Morse code spacing. (Answer is at the end of the article)

The timing of standard Baudot is interesting. The tones shift between Mark and Space at 45.45 Baud. A RTTY baud of 45.45 Baud is 22 msec for 1 baud ($1/45.45 = 22$ msec). A Baud, named after Baudot, is the time occupied by one signal element. In binary protocols the bit rate equals the Baud rate. These two terms are often misused. In some protocols, bit rates can be higher due to more bits per baud. In general, bit rates were meant to convey information rates.

In early teletype times, information or data rates (bps), were smaller than the baud rates. In the case of Baudot code or RTTY the baud rate includes control information. We consider the framing of the code with Start and Stop bits along with 5-bit code for a total of $7\frac{1}{2}$ time units per character. To illustrate, let's consider 10 characters. (Multiplying the character count by 10 gets rid of messy fractions)

10 Characters is 50 Baud, 1 bit per baud. Each character has a Start bit, so $1 * 10 = 10$ and Stop bits at $1\frac{1}{2} * 10 = 15$ so $50 + 10 + 15 = 75$ baud. So an information rate is 50 information bits is 75 baud.

As you look more and more into Digital modes, many of these RTTY (Baudot) ideas will resurface in slightly different guise. In further articles, we can explore other modes. There is a lot of really great Math and Science there to explore. So even if you never try RTTY, the ideas here will help with those modes.

Answer to Morse Code Timing Question.

Standard Morse Code timing

Like RTTY, CW is digital (sort of) and binary. Unlike RTTY, CW is not based on a single, constant baud. An RTTY baud of 45.45 Baud is 22 msec for 1 baud ($1/45.45 = 22$ msec). It takes the same time to send any letter. This is a characteristic of fix length code sets like Baudot.

Morse Code is based on time intervals. The duration of a "DIT" sound determines all the other elements. Unlike Baudot, the Morse Code representation of a character uses a variable length code set. Of course we all know the short sound is called a "DIT" and the long sound is called "DAH". (Or DOT and DASH) .

So we need to consider these time intervals. In addition to dots and dashes, called elements, we have character and word time intervals. We use the term dot length for the duration of one dot sound.

Time of Dash is 3 dot lengths.

Time between elements is 1 dot length.

Time between characters is 3 dot lengths.

Time between words is 7 dot lengths.

I asked you to compare the time to send 5NN vs. 599.

We only have one "word". Each word has 3 characters. So all we need consider is dots and dashes.

599 is dit-dit-dit-dit-dit, a character space, dah-dah-dah-dah-dit, a character space, dah-dah-dah-dah-dit. Each '-' is also an element space.

We have 9 dot lengths for the '5'. (5 dits and 4 element spaces) and two '9' where each we have 4*3 or 12 dot lengths for the dashes and 4 element spaces for a total of 16 dot lengths for each '9'.

This gives us : 9 + 3 + 16 + 3 + 16 or 47 dot lengths to send 599.

The letter 'N' is dit-dah. An N is only two elements, so 1+3 or 4 dot lengths and 1 element space. This is a saving of 16 – 5 or 11 dot lengths each.

This gives us : 9 + 3 + 5 + 3 + 5 or 25 dot lengths to send 5NN. This is almost ½ the time that sending 599 takes. ❖

Phil- Mont Launches New 'Coders Corner'

Like to code? Sure you do! Join up with fellow hams who like to bite into the bits. Come early to the monthly meeting and talk shop with the group.

Check out [the repositories on GitHub.](#)

Let's Get Geeky!

Were You Aware of It?

No, this antenna was not bent. No, no one sat on it either. This antenna was designed this way... by a computer. At right is an [evolved antenna](#) designed by an automatic computer program that starts with a basic antenna shape then adds or modifies elements in a somewhat random fashion and then compares each evolution until the ideal candidate is formed. This is the 2006 NASA ST5 Spacecraft antenna. And you thought your antenna looked a bit off. ❖



(PREZ SEZ Cont'd from pg 4...)

Some of us stay from Friday until Sunday. Camping is an option. Look here for the report from 2021:

<http://phil-mont.org/presos/fd2021.pdf>

[CBS PHILLY video](#)

More info will follow as we get closer to the event.

Spring is in the air. **ARE YOUR ANTENNAS?**

Get them up. PLAY. Ask for playmates on the repeater. Hang out on the repeater after the nets. Work things out on the repeater. **You're only alone if you choose to be.**

EVERY SINGLE MINUTE remember, this is YOUR Club, YOUR repeaters. USE them.

MONITOR them. BE A REPEATER GREETER.

Answer calls when you can. Let's try to leave ...

NO CALL UNANSWERED.

PLAY*BREAK*LEARN

jim fisher

AJ3DI

www.aj3di.com

HamshackHotline ext: 14423

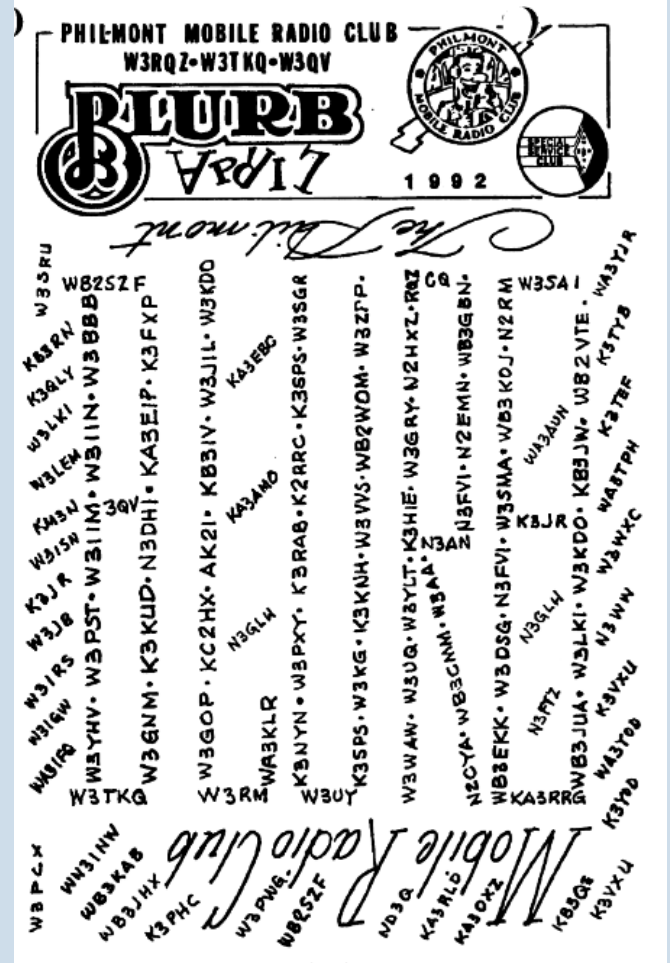
"Do, or do not. There is no 'try.'"

-- Jedi Master Yoda

From the PMRC Archive...



Here are some highlights from this month in Blurb history, April 1992



The PREZ SEZ

Bill Popovic, N3FVI



Simplex is a fancy-sounding word for a direct contact on a single frequency. After you've made a contact on a repeater, move the conversation to a simplex frequency if possible. The function of a repeater is to provide communications between stations not able to communicate directly because of distance, terrain, or equipment limitations. Always use simplex whenever possible so that the repeater will be available for stations that need its facilities.

Simplex communication offers some privacy, and there's no time-out timer or courtesy tone to worry about.

When selecting a frequency, make sure it's designated for FM simplex operation. If

you select a frequency indiscriminately, you may interfere with stations that you can't hear operating in other modes, such as satellite communications.

Repeaters are intended to enhance mobile and portable communications. During mobile operating prime time, fixed stations should yield to mobile stations. But don't abandon the repeater, your help may be needed in an emergency.

This article isn't pointed at any one person, or intended to discourage repeater use. It's just a reminder to all, and especially me. During drive times, keep transmissions short, and wait for the courtesy tone. Hope to hear you on '03!

Philadelphia



ARES

The Amateur Radio Emergency Service are trained licensed amateur radio operators providing radio communications as a public service in disaster situations. All licensed operators are welcome to join. To get started fill out this [ARES Registration form](#) and [submit it to Cliff Hotchkiss](#) (KC3PGT), the Philadelphia Emergency Coordinator.

Join the A.R.E.S. Training Net

Every Sunday evening at 2100 (9:00 PM)

147.030 MHz (+offset 91.5 PL)



ANNOUNCING THE
2022 YORK HAMFEST



Sponsored by the York Hamfest Foundation
The Areas Oldest Continuous Hamfest, our 65th Year

SATURDAY, APRIL 30, 2022
8:00 AM TO 1:00 PM

ELICKER'S GROVE PARK

511 Roth Church Rd

Spring Grove, PA 17362

Easy access from York, PA or Hanover, PA

PLENTY OF FREE PARKING!

TAILGATING AND LIMITED UNDER COVER SPACES

- TAILGATING SET UP AT 6 AM SATURDAY MORNING: \$5 per 10' space, plus admission
- GENERAL ADMISSION AT 8 AM
 - \$5 per person
 - Children Under 16 FREE when accompanied by an adult
 - Unlicensed Spouses FREE
- RAIN OR SHINE
- COMMERCIAL VENDORS ARE EXPECTED TO COLLECT & REMIT PA SALES TAX
- FREE VE TEST – Registration starts at 10:30 AM – Testing at 11:00 AM
(Admission fees paid can be refunded upon registration for testing, full ticket and stub are required)
- FOOD VENDOR WILL BE AVAILABLE
- CARD CHECKING FOR DXCC/WAS/VUCC/WAC
- DOOR PRIZES (Don't have to be present to win grand prize)
- FLUSH TYPE BATHROOMS ARE BACK
- VENDORS ARE NOT ALLOWED ON PREMISES PRIOR TO 5:00 PM FRIDAY THE 29th

CHECK OUR WEBSITE FOR UPDATES: www.yorkhamfest.org
FOR GENERAL INFORMATION: duane.sterner@yahoo.com

TALK IN: W3MUM Repeater 147.330+600 PL:123.0
ALTERNATE: 146.580 Simplex

The Last Page



The Blurb wants to hear from **YOU!**

Got a hot lead on antenna design? Soldering up a special circuit? Digging some new DSP? Reminiscing about some retro receivers? Maybe you have some goodies for sale.

Click the big blue envelope and [tell us your tale!](#)

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