



BARS Billerica Amateur Radio Society

NEWS FOR AND BY BARS MEMBERS

JANUARY 2025

BARS meetings are now “hybrid” – the meeting will be held at the Chelmsford Bible Church and available simultaneously on Zoom.

The safety and well-being of our membership is important to us. Those members who feel uncomfortable attending in person can continue to join us over Zoom.

--BARS Management.

A Message from the President By Doug Bruce, N1WRN

Greetings Fellow Members,

I hope everyone is staying warm during this recent Polar Vortex. I am happy that we have not had much snow this year, just like the last few years.

Just a reminder that we will be having our Annual Holiday Party on Wednesday, January 15, 2025, at the Great Wall Restaurant in Bedford, MA. We will be having a buffet. I will check on the pricing and send out an email to members when I confirm that. We will also be doing a Yankee Swap as well. There is a \$20.00 maximum per gift and everyone is welcome to join in. It is a good time and a good chance to have good fellowship with fellow hams in the Billerica Club.

On another note, January 25 is Winter Field Day in Methuen. I will be emailing members more details as I get them. Here is the link for more information on Field Day. Sounds like a good time to me!

<http://www.nefg.us/>

Hopefully some BARS members will be making the trek to Methuen to join in the fun.

Another fun activity for Club members is the POTA program, which is gaining popularity nationwide these days. Here are a few thoughts from Niece KA1ULN:

I find that many hams, both old and young, want to know more about POTA. It is a great pastime for many even in the snow and rain, so start planning POTA – <https://www.parksontheair.com> for spring.

Our Club is a GOTA Club (Get On The Air) so these two wonderful activities will get you on the air for sure!

On another note, we will be resuming in person Club Meetings (hybrid) at the Church starting on February 5, weather permitting, so feel free to join us in person. I will be lining up a Guest Speaker for that meeting soon, so hopefully you can join us then too.

Lastly, I want to remind everyone that we are at the absolute top of Solar Cycle 25 right now. Make sure to get on 10, 12, and 17 meters as these bands will start to go away in the next couple of years as we head back to the Solar Minimum. Here's to Good DX!!

Until next time,

73,
Doug
N1WRN

**Next BARS meeting: January 15 at 6:30 PM - “BARS Holiday Party”
At the Great Wall in Bedford**

I am looking forward to “seeing” many of you there on Wednesday, 1/15, at 1830.

Doug, N1WRN
President, Billerica Amateur Radio Society

From the Editor's Desk

By Marla Wallace, WA1GSF

Are you keeping up with the hobby? At every turn, I'm feeling like I'm woefully out of date! And until 2015, I was a practicing electrical engineer and software developer and I still construct stuff and write code for my own amusement.

But nowadays, I barely understand what's going on behind the panel of my commercial HF rig. All my construction projects use through-hole parts and most of them use technology from the 1970s, unless a microprocessor is involved.

But maybe you don't care about the technical platform. That's okay as long as you have an Elmer to call on when needed. But do you know about the digital modes that let you make QSOs with stations too far into the noise to hear? Are you using Logbook of the World? Do you know how to find out what DXpeditions are coming up? Can you get the solar activity / space weather report and know what that implies for the current propagation on some particular band? Do you know that the CW end of the twenty meter band is under threat? Do you know what the League is doing about that? Do you use DStar or Fusion and do you know that they are incompatible – you have to use whichever one is built into your rig, depending on the brand?

Recently, I learned about a new Qcode (it was supposed to be a joke): QNB. Which stands for "how many buttons are there on your rig". The response to QNB? is QNB<number of buttons>/<number that you know how to use>. For a lot of us, we'd have to respond something like QNB 13/4. Which is sad. The hobby is getting away from those of us who are casual about it or infrequently on the air. And that pretty much describes me – I get on the air maybe six times a year, only to rag-chew with my brother or some other local ham, just to prove the rig still works.

Feature Article: Happy New Year Bars!!

By: Mark Nelson, KA1INE

Another year has quickly passed and we find ourselves in the year of 2025. I hope everyone had some much needed rest and enjoyed family and friends over the holidays. One night, I was thinking about what activities the club might be interested in exploring this year. The floods in North Carolina came to mind and highlighted the importance of amateur radio and how to best serve the public in situations like this. If some disaster struck in New England and the internet went down, what capabilities exist to restore that resource?

I became interested in a system called AREDN, the Amateur Radio Emergency Data Network. This system is an internet network similar to the world wide web but uses radio instead of wires to pass the information. I'm just beginning to explore this and wonder if anyone in the group has any experience with it.

I recently had the opportunity to help Jay Taft, (K1EHZ) the President of the Merrimack Valley Amateur Radio Society do

some upgrades to their network. The group was adding a new microwave dish to the network on top of Mt Uncanoonuc where their repeater is located.



The weather was perfect for a December morning and a group of 9 hams helped feed coax and equipment to the tower climber Nic from VC towers. This is a view of the telephone pole tower used to cover Goffstown NH and the surrounding area.



The equipment rack inside the shelter is used to house the router, network servers and the switches. The tasks of the day were to add another parabolic dish to the tower for 900 Mhz and to align it the antenna at the Elliot hospital in Manchester. Another 5 Ghz dish was also fine tuned in azimuth and elevation toward the Westford node of the network.



I'm in the process of learning more about the system and setting up a node at my house. There's a node in Haverhill and in Westford that I'm trying to connect to but unfortunately, I may not have direct line of sight from either node to my QTH. I will set up a portable system for emergency or mobile use. If anyone has any interest in AREDN, Jay has kindly offered to do a briefing for BARS in the future.

73, Have a great year!

Feature Article: 1/1000th THE POWER OF AN IC-705 RUNNING ON BATTERIES?

By: Andy Wallace, KA1GTT

Recently, I was aligning and tuning up a vacuum tube receiver from 1965. This process peaks RF circuits in the set so you get every ounce (okay, dBm to youngsters) of sensitivity it is capable of. In doing so I tuned through the 13 to 14 MHz band. Those of you with HF rigs are encouraged to spend time just listening outside the ham bands – I am sure many of you never have. There's a wealth of entertainment you can have without transmitting. (Stay tuned for perhaps a future article on this.) 13 MHz is a shortwave broadcasting band where you can hear powerful broadcasts from overseas. However it's also the "22 Meter" Part 15 band. So named, because FCC regulations in Part 15 describe allowances for unlicensed transmitters in several parts of the radio spectrum. I remembered this when I was listening with the antique receiver and looked up what could be heard.

If you were a kid in the 1970s, you might have built a "wireless broadcaster" kit which was an FCC Part 15 transmitter on the medium wave AM broadcast band. Later, devices operating around 0.185 MHz were allowed, on longwave or low frequency and nicknamed LowFers. After that, unlicensed transmissions on HF, "HiFers" were allowed, including 13 MHz. Now why would you want to listen to unlicensed beacons? Well, there are two attractions for someone wanting to see how well his receiver and antenna hears: they are at various points of the compass, and they are LOW POWERED.

An excerpt of the FCC text can be found here:

[CFR-2011-title47-vol1-sec15-225.pdf](#)

The portion of interest says: "(a) The field strength of any emissions within the band 13.553–13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters." Apparently, K6STI did calculations that helped us understand what this means to the average ham. This is available via the Wayback Machine:

[13.56 MHz Antennas](#)

This translates into basically less than 5 milliwatts into a 13.5 MHz dipole. Folks, that is 0.005 watts. 5/1000th of a watt. Or one-thousandth the power of a 5 watt QRP (the term for low power) rig like the IC-705. This is barely enough power to light a small LED. Sound like fun? Well, your author was SHOCKED that his 60 year old vacuum tube "boatanchor" receiver could actually hear these beacons! And you can, too!

There is a catch: most of them will be using CW, transmitting morse code call letters. These are not FCC issued callsigns, and even though they are run by hams most times the hams don't use their calls because they are operating outside the ham bands. If you don't know CW, however, you can still copy them with your ears, writing down the dots and dashes and looking them up later. The calls run on an endless loop repeating over and over. Try listening during the day when the 20m band is open. Start by turning on your HF rig and – if you have an antenna tuner – set it to 20m/14 MHz and tune up there. Then shift to the HiFer band, which is 13.553 to 13.567 MHz. Start at the low edge, with your rig in LSB mode (or CW). Begin tuning upwards, slowly, and listening for any CW beeps as you go. Because these are so low powered, they will be like ghosts in the night, fading in and fading out, if you hear them at all. Refresh yourself with your radio's manual and controls. Things like narrow filters, passband tuning, IF shift, noise reduction, and audio peak filtering will help. Remember, this band is likely to be your biggest listening challenge with DX weaker than anything you've heard on ham HF bands! *[Which is a great way to learn all the things your rig's receiver is capable of doing, too – ed.]*

In a couple days of checking, I managed to hear several beacons in this band. Googling brought up this helpful list of callsigns at the Longwave Club of America site:

lwca.net/sitepage/part15/callmain.htm

I wrote to the owners of the ones I heard. Here's what I logged between 13.561-13.567 MHz:

CALL	LOCATION	DISTANCE FROM CHELMSFORD, MA
YSO	Yellow Springs, OH	1091 mi
ABBY	Gibsonia, PA	747 mi
KAH	Georgian Bay, Ontario	838 mi
ODX	Burlington, Ontario	690 mi
MR.X	Long Valley, NJ	347 mi
AMA	unknown	

By the way, after hearing a few on the antique receiver, I switched to my IC-7300. I was able to hear these on the Icom, but the signals (like with the tube radio) were so close to the noise threshold that there was no indication on the waterfall display even adjusting the reference level. They are THAT weak. Weak-signal modes like FT8 and WSPR using a computer may mean that someone has a utility to pick up CW below the noise floor. I don't have experience there – does someone in BARS?

Sidenote: if you want to create your own 22m beacon, Black Cat Systems has a kit available for \$39 or \$49:

[Programmable 22 Meter Band Part 15 CW Beacon Kit](#)

By the way I have a few IOS apps made by Black Cat Systems on my iPhone and they work well.

So the 22m band is definitely one I'll be checking from time to time when I am at my radios. I wrote an email to the operator at YSO and asked him what his power was. Jim, AJ8S responded to say he was running 4 mW into an end-fed horizontal wire at 20 feet. Here, to me, is the absolute magic of radio which captured me at about age 10. A signal measuring four one-thousandths of a watt exited a humble antenna in Ohio and bounced off the ionosphere X number of times on the way to zipcode 01824 and I heard it with full intelligibility at my radios (one modern, one very vintage) – at a distance of nearly ELEVEN HUNDRED MILES. As a QRP operator in my “comfort zone” of 4-5 watts (and usually not less) this boggles my mind. I would not have guessed that 4mW could make it from my house in Chelmsford to my sister Marla's in North Chelmsford reliably. How can you not appreciate the science that made this happen?

So there you have it – if you want to really give your station a workout, tune in the 22 meter “HiFer” band!

Announcements

Winter Field Day

The New England Fusion Group, will be participating in its 1st Winter Field Day on January 25th. I would like to invite everyone to stop by.

It will be held at the Methuen Rod and Gun Club, clubhouse, on Saturday Only from 11am to Midnight. More info can be found on www.nefg.us and the NEFG's Facebook page.

If you're a Field Day expert, I'd love any advice you can give me!

Hope to see you there.

Winter Field Day

An Amateur Radio Field Exercise

January 25th

Open to the public!

CQ, CQ, CQ... visitors welcome

Come watch amateur radio operators

- ✱ Set up a field station & antennas
- ✱ Contact people around the world
- ✱ Operate voice, digital and morse code
- ✱ Test their equipment and abilities
- ✱ Practice emergency skills

Visitors are welcome to stop by, ask questions, and learn about the exciting hobby of amateur radio.

You may even have the opportunity to pick up a microphone and get on the air!

Local Information:

Methuen Rod & Gun Club
240 Tyler St.
Methuen, MA

11am to Midnight

Visit www.nefg.us
for more information



--de Robert Montgomery, KC1QKU

Greetings and Happy New Year, BARS!

I'm a member of one of the teams activating the World Wide Award special event (<https://hamaward.cloud/wwa/award>). This event is unique in that you can contact the event stations once per day, per band and per mode gathering points with each contact. There are over a hundred activating stations all around the world, perhaps in a DXCC entity you need! There is an online dashboard where all the active stations are listed with band and mode AND DX cluster spots with their frequency - it's dead easy to find them!

The event started on Jan 1 and as I write this over 42,000 hams have made over 300,000 QSOs with the activating event stations! The event runs through January 31st.

I'm on the team operating the N1W event station. I'll be doing mostly digital modes but I will hop on SSB for some pileup practice! It's good radio fun when it's too cold to work on antennas! ;-)

73

Tim Carter - K1DC

Algonquin Amateur Radio Club Flea Market

The Algonquin Amateur Radio Club will hold its annual Flea Market on February 15, 2025 from 9:00 AM to 12:00 Noon. The event will be held at the 1LT Charles W. Whitcomb School, 25 Union St or off Bolton St (Rt. 85), Marlborough, MA 01752.

The following is the link to the Flea Market flyer:

<https://www.qsl.net/n1em/2025flyer.pdf>

Thank you,
Ken, KA1GFN
Treasurer and Newsletter Editor
Algonquin Amateur Radio Club

Strays

Becoming an ARRL member or is your membership up for renewal?

One of the benefits of being an ARRL Affiliated Club is a commission for recruiting new ARRL members and securing timely ARRL member renewals.

Each new ARRL member earns the club a \$15.00 commission. New members are defined as never having been a member or a returning member that has not been a member for two years. Each renewal earns the club a \$5.00 commission. There is no limit to the amount a club can earn in this program.

Multiyear memberships earn only one commission. Life, Family, International, Blind, and Student memberships are not eligible for a commission. The member will not be eligible to receive a gift or incentive if the club collects a commission on the membership.

Currently at least 82 BARS members are also ARRL members. If we all renewed through the club, we could potentially receive \$410 per year from the ARRL.

If you are interested in renewing your ARRL membership through the club fill out the following form [ARRL Affiliated Club Membership Application \(pdf\)](#). Then forward it to W1LUS@hotmail.com

Is your Email address on the FCC site up to date?

§ 97.23 Mailing and email addresses.

Each license grant must show the grantee's correct name, mailing address, and email address. The email address must be an address where the grantee can receive electronic correspondence. Revocation of the station license or suspension of the operator license may result when correspondence from the FCC is returned as undeliverable because the grantee failed to provide the correct email address.

[85 FR 85533, Dec. 29, 2020]

I recommend that you log on to the “your FCC Registration” at <https://apps.fcc.gov/coresWeb/updateRegistrationPre.do> to make sure that your email address is up to date. Also, in the future should you change your home address, or your email address be sure to remember to update it on the FCC site.

[The \$35 FCC application fee applies to new, renewal, rule waiver, and modification applications that request a new vanity call sign. The fee will be per application.]

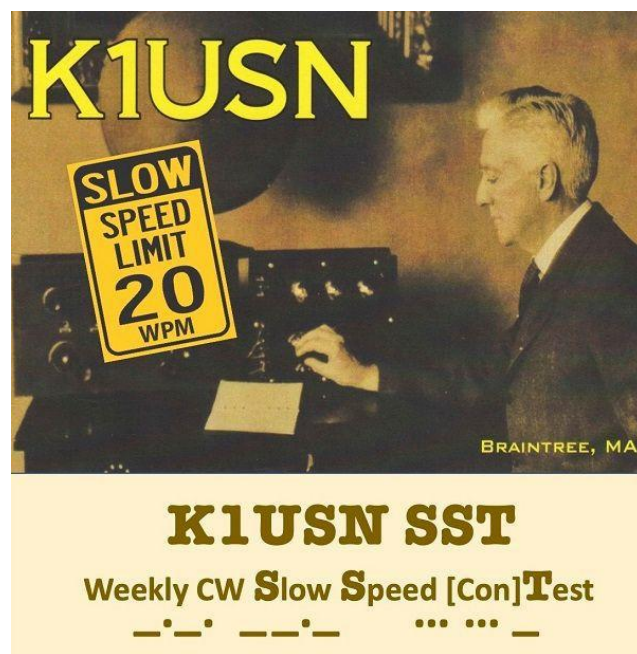
Administrative updates, such as a change of name, mailing or email address, and modification applications to upgrade an amateur radio licensee's operator class or to request a sequentially issued call sign, are exempt from fees. – ed.]

--de Bruce, W1LUS

Friday and Sunday Night CW Slow Speed Contest

Every Friday and Sunday night, there is a weekly slow-speed CW contest run by the local K1USN guys. This is a good way to polish up your CW skills. See <http://www.k1usn.com/sst.html> for details. Currently, the schedule is:

Fridays 20:00-21:00 UTC (3-4pm EST) and
Mondays 00:00-01:00 UTC (7-8pm EST Sunday).



-- de Tom Walsh, K1TW

Making ZOOM available to Elmers

In this time of social distancing, we have been using Zoom for our monthly club meetings. I have been thinking that Elmers could also be using Zoom to coach new hams instead of actually going to visit with them. Elmers could perhaps help with programming a new radio with the new ham sharing their computer screen and the

Elmer helping to walk them through the process. An Elmer could have Zoom on their cell phone and show a new ham how their shack was set up. Use your imagination and see how you might use this tool. If you would like to use Zoom for this, contact Bruce, W1LUS@hotmail.com, with a date and a time and a meeting will be setup for you. You may also contact Bruce if you would like training in using Zoom to Elmer someone.

--de Bruce Anderson, W1LUS

Upgrading Your License? Here's a Resource

If you are thinking of upgrading your license using one of the Online exam sites. I recommend that you take some free practice exams on HamStudy.org. I recommend it because the software used to generate practice exams on HamStudy.org is the same software that is used to create exams for online tests. By doing that when you take an online upgrade exam the test question format will be familiar. With HamStudy.org practice tests you should use the keyboard to select the answer, A, B, C, or D and not your mouse as that is the way online exams are run.

--de Bruce Anderson, W1LUS

Secretary's Reports

from Marla Wallace, WA1GSF, Secretary

December BARS General Meeting

Doug called us to order at 7:00. The meeting was Zoom-only.

We began with discussion about using the club's projector at the church. Since there is already a screen in place, it seems feasible, but it's worthwhile to test the set-up out during the December VE session.

Jay, AC1SN, is trying to reactivate a club at U Mass Lowell.

The BARS Holiday Party will be on January 15th at 6:30 at the Great Wall, as usual. There will be a Yankee Swap (\$20 limit).

It's almost time to start planning Field Day. Start thinking about it.

The program began at 7:15 and ended at 20:30.

We adjourned @ 20:35.

There were 21 participants.

December BARS Board of Directors Meeting

There was no Board of Directors meeting in December.

BARS Membership

Our current combined membership is 149. Please check your email and your "Junk email" to see if you have a renewal invoice from PayPal.

Anyone with a question about their renewal status can email me at W1LUS@hotmail.com to get your current membership status.

from Bruce Anderson, W1LUS, Treasurer

2024 BARS Member Dues

A \$15 annual BARS membership begins on January 1st and expires on December 31st. Any renewal or new membership made after September 1st will be valid until December 31st of the following year. Memberships allow us to

- pay our bills,
- maintain our great web page,
- fund field day,
- and bring the membership a great variety of informative meetings and speakers.

Treasurers Report for January 2025

Dues for 2025 are now due. Dues for 2025 will remain at \$15. Dues can be paid several ways:

- via bank-to-bank transfer with Zelle, Venmo, PayPal, etc. by sending \$15 to bars.dues@outlook.com,
- with credit card by using the Join/Renewal membership form on the W1HH.org website,
- or with cash or check by mailing \$15 to Billerica ARS, 16 Regis Road, Tewksbury, MA 01876

In December, we had twenty-nine new/renewals for \$435 income, and \$5.00 from the ARRL for KC1TLF's renewal through BARS; our expenses were Zoom \$16.99, and PayPal \$26.01. We now have 15 Cash, \$522.65 in the bank and \$1625.34 in our PayPal account for a total of \$2162.99.

Bruce Anderson
W1LUS

BARS Needs You!!!

We are looking for a few good hams to act as net control on the regularly scheduled Wednesday night nets! All it takes is one night a month; if you are interested contact Doug, N1WRN.

Also, the club needs volunteers for light tasks of about 1 hour a month. Are you able to pitch in? Contact Doug Bruce, N1WRN.

Wednesday Night Net

Join us on the Westford 146.955 Repeater for the weekly BARS net each Wednesday at 8:00 PM (**except on the first Wednesday of the month which is club meeting night**). *Note: Thanks to the Westford Police Amateur Radio Team (PART) for their generous act of making their repeater available to us.*

Repeater info:

WB1GOF

146.955 MHz

-600 kHz (normal) offset

Encode CTCSS 74.4 Hz

Reminder: “kerchunking” the repeater is not only impolite, it’s illegal. It constitutes an unidentified transmission. If you need to check that you’re making the repeater, say something like “This is <your call> standing by on the frequency.” Thanks for your courtesy.

Club Meetings

Club meetings are held in person (weather permitting) and via Zoom. A link will be sent via the BARS email reflector to all currently paid-up members who might wish to attend via Zoom.

Club meetings are held on the first Wednesday of the month at 7 PM Eastern time.

VE Sessions

Our VE sessions are held in-person at the Chelmsford Bible Church. Pre-registration for our in-person exams is suggested. Contact w1lus@hotmail.com for registration information.

VE sessions are held every month on the 2nd Thursday at 7:00 PM at Chelmsford Bible Church, 128 Gorham St., Chelmsford MA. Park in back and enter by rear door. [Chelmsford Bible Church Hall, 128 Gorham St, Rear Door, Chelmsford MA 01824-3220](#) ([map](#))

VE Session Report for December 2024

We had two people show up for the December 12 VE exam session. Results were one new Technician, Sam KC1VWN, and one new General, Dan KC1VWO. Be sure to say hello if you hear them on the air.

Each was given a new Baofeng UV 5R radio donated by Erving, N1ECC.

Thanks to Gary, W1GFF, Tom, K1TW, and Bill, W1ZL, for helping run this exam session.

Our next exam session will be on January 9th at 7:00 PM at the Chelmsford Bible Church. While walk-ins are still welcome it speeds the process up if you pre-register for your BARS VE exam session at HamStudy.org.

--de Bruce Anderson, W1LUS

BARS Does breakfast every Saturday.

On Saturday mornings at 8:15AM, we meet for a casual, social breakfast at Stelio’s restaurant in Billerica.

[Stelio’s Family Restaurant, Billerica, MA](#)

Future Meetings

There will be no January meeting due to the BARS Holiday Party which will be held that month.

Subscribe to the BARS Mailing List

To subscribe to the BARS email list, send a blank email to bars-subscribe@w1hh.org and watch for an automated reply. Note that bars-subscribe is all one word.

Reply to that message from the list server and you are then subscribed.

To post to the list, address your email to bars@w1hh.org

December Get-on-the-Air Suggestions from Marla Wallace

BARS is a “get-on-the-air” (GOTA) club. We encourage members to participate in the varied events on HF and VHF.

Note: This is my first time doing this column. Please critique and / or volunteer to take this job on – I have no idea if I’m doing it right!

Here are the popular suggestions for this month:

<u>Date</u>	<u>Event</u>
01/11 – 01/12	North American QSO Party, CW ** https://www.ncjweb.com/NAQP-Rules.pdf
01/18 – 01/19	North American QSO Party, SSB ** https://www.ncjweb.com/NAQP-Rules.pdf
01/18 – 01/20	ARRL January VHF Contest https://www.arrl.org/january-vhf
01/24 – 01/26	CQ 160-Meter Contest, CW http://www.cq160.com/rules.htm

** Top recommendation for this month

Recurring Events – visit webpage for exact times and dates:

K1USN Slow Speed Test - Every Friday 20:00 UTC /
Every Monday 00:00 UTC

<http://www.k1usn.com/sst.html>

Straight Key Century Club (SKCC) Weekend Sprintathon – the Saturday following the 6th of every month at 1200 UTC

http://www.skccgroup.com/operating_activities/week_end_sprintathon

Details on each contest above and more events can be found every week on the WA7BNM contest calendar at:

<https://www.contestcalendar.com/weeklycont.php?mode=custom&week=current>

BARS Leadership Team

OFFICERS:

President: Doug Bruce, N1WRN

Vice President: Mark Nelson, KA1INE

Treasurer: Bruce Anderson, W1LUS

Secretary: Marla Wallace, WA1GSF

BoD: Bill Poulin, WZ1L

BoD: Steve Wedge, W1ES/4

Ex Officio: Gary Frascarelli, W1GFF

VOLUNTEERS:

Net Coordinator: Doug Bruce, N1WRN

Newsletter Editor: Marla Wallace, WA1GSF

New Member Outreach: John Fisher, KC1FTJ

Field Day Chair: Mark Nelson, KA1INE