



NEWS FOR AND BY BARS MEMBERS

DECEMBER 2023

On the recommendation of the Board and approved by a vote of the membership at the October meeting, BARS meetings will become “hybrid” – the meeting will be held at the Chelmsford Bible Church and available simultaneously on Zoom – beginning with the January holiday party and the February meeting.

We intended to resume in-person club meetings with the January 2024 meeting, with the plan being to continue to also allow members to attend virtually using Zoom.

The safety and well-being of our membership is important to us.

--BARS Management.

A Message from the President By Doug Bruce, N1WRN

Greetings Fellow Members,

As we close out 2023, now is a good time for all of us to look at where our ham radio journey has taken us over the past year, and to set new goals for what we want to achieve in our great hobby in 2024.

I am still working on my two goals of 2023, learning CW and getting my Extra Class license. These two areas (once accomplished) will offer me so many new horizons as a ham radio operator.

As I have stated before in this space, there is absolutely no time limit or pressure to achieve your goals in ham radio. In my mind, the fun is in the journey, and not necessarily in the final destination.

About upgrading your license, some ham operators go years in between getting their General Class license and getting their Extra Class license, while others get all three licenses (Technician, General, and Extra) in one sitting!

Regarding CW, years ago, it was a requirement to get any class of license. I firmly believe that the decision by the FCC to eliminate the code requirement enabled many people (including myself) to gain entry into the hobby and was a game changer for Amateur Radio. If I had to learn CW to get my license, I am not sure I would have had as much enthusiasm to get my first license as I did without the code requirement. Nowadays, I feel more people are learning CW because they WANT to, not because they HAVE to!

The first goal I have set for myself for 2024 is to get my 5 Band DXCC Award. Years ago, a ham operator had limited modes to obtain this award, and it would take many months or years of going around the bands trying to make enough contacts to make it to 100 countries on each of the five bands.

Now, with the advent of new digital modes such as FT8 (which, by the way IS ham radio!), the 5 band DXCC award is not as difficult to obtain, which can enhance the enjoyment one has in the hobby, instead of enduring endless frustrations of the older modes such as SSB and CW.

Our hobby is about enjoying what we are doing on the radio and having fun! I have only been a ham since 2019 and I am already three quarters of the way to my 5 band DXCC thanks in large part to my love of the FT8 mode.

My second goal in 2024 is to get my 5 band WAS (Worked All States) award. This award lends itself more to the traditional modes of SSB and CW but can also be easier to obtain through the FT8 mode. As with all awards, as my Elmer would say, you must put in the chair time to achieve any of the ARRL awards. Making it easier to get these awards does not diminish the accomplishment in any way. What it does accomplish is to get more people into our hobby. Isn't that what it is all about, getting as many people involved in our great hobby as possible?

On a separate note, I want to announce the date of our Holiday Party. We will again have the gathering at The Great Wall Restaurant in Bedford, MA on Wednesday night 1/10/24 at 6:30 PM.

We will have a similar format to last year, with a buffet dinner first, then a Yankee Swap and then comments from myself and our Vice President Mark Nelson. We had a great turnout last year and it will be great to be able to see everyone at The Great Wall on January 10th.

In closing, set those goals now for 2024 that will enable you to G.O.T.A.!!! The more you get on the air, the more fun you will have!

Until next month,

73,
Doug
N1WRN

Next BARS Meeting: December 6 at 7:00 PM - Program: "Basic Satellite Tracking"

Presenter: Frank Garofalo, WA2NDV

Frank was originally licensed in 1970 in Corona Queens, New York by way of the Electchester Amateur Radio Club and his cousin Hugo (sk). He was in 8th grade at the time and it gave my life a direction.

Amateur Radio has allowed him to work in many diverse places including 18 years at NBC-NY and 15 years as a VoIP Engineer for the cable company with 3.5 million voice customers. It all started at the proverbial 5KW three tower directional AM radio station! Now he is retired.

He asserts that the Ham License and First Class (General now) Radiotelephone licenses have been more useful over the years than any college degree.

He uses an IC-9700 for satellites with an InnovAntennas on a G-5500 AZ/EL rotor. Rig and rotor are computer controlled with S.A.T. a stand-alone satellite tracker.

His Satellite Contacts on LEO's and MEO as of Nov 21, 2023, 92 Countries, 771 Grid squares worldwide, 50 States, 4017 QSO's with 1446 unique stations and three NA1SS astronaut contacts. Through 41 satellites.

Please join us on December 6 for a very interesting and informative presentation on Satellite Tracing, another fascinating aspect of our hobby. This is a presentation I am sure you won't want to miss!



BARS will announce the link to join the Zoom meeting before the meeting, but it will be posted to the BARS email list and should not be shared outside our Club. Are you on the email list? If not, please send an email to bars-subscribe@w1hh.org and then simply reply to the robot response from the server and you will be subscribed.

Observing our Zoom meeting requires only a web browser and headphones/speakers. You do not need a webcam or microphone unless you want to speak or be seen.

Before our meeting date, please go to <https://zoom.us/test> and see if it will function for you. If you have problems, we can try to assist – feel free to ask questions on the BARS email list.

We are looking forward to “seeing” many of you on Wednesday 12/6 on the Zoom session at 1900.

Doug, N1WRN

From the Editor's Desk

By Marla Wallace, WA1GSF

One thing about belonging to a radio club: not all club activities have to be radio related; when we get together the social interaction is as varied as the experience of the members.

Saturday mornings, some of the BARS club members get together for breakfast. The conversation ranges from tips on quilting to farming vegetables to cooking. And that's just what I can hear at my end of the table. So I'm looking forward to meeting in-person again in February.

A few weeks ago, we had a Halloween party (see below). We're having a post-holiday party on January 10th.

In other news, I recently warmed up the coax with a 75m AM signal – my first phone contact on HF. This ham radio stuff could maybe be fun, I think.

Photo Article: From the BARS Halloween Party

By: Marla Wallace, WA1GSF

On October 28th, Mike Raisbeck hosted the BARS Halloween party. And a good (and tasty) time was had by all. I had my camera with me (it was also a prop as part of my "Camera Cat" costume) and snapped a few candid shots:



Our Jovial Host



Investigating the Dips



**"Take a Step to Your Left, Mike.
No, Your Other Left."**



Is She Giving Someone the Finger?



Meanwhile, in the Kitchen



I Don't Think They're Really That Bored



The Cat Wants Some Ginger Ale, I Think



Chips and Dips



Egg Rolls, Deviled Eggs and Meatballs – Yum!



This Apparition was Protecting the Desserts

A Message from the Vice President

Mark Nelson, KA1INE

It's another new year for BARS and I'm happy to have been re-elected as Vice President again. Last year we had meetings over Zoom and that worked out very well for the group. We're planning on having hybrid meetings this year in person and on Zoom starting in February. This will bring more opportunity to meet each other and spread knowledge about ham radio throughout the group. Zoom is great for a lot of reasons but face to face meetings add the personal touch and builds friendships.

One of my favorite activities is building projects so I hope to be doing more of that with members. As technicians think about upgrading to General, building HF antennas comes to mind as a good start. HF operating is a whole different world than VHF and we need to expose technicians to the various modes open to them. Operating internationally is a thrill that keeps on giving. The first time you call that German station and he responds with your call sign is something you will always remember! Those that are interested in building an antenna or upgrading to General should send me an email and we'll see about arranging a group build. Any other group projects should be suggested as well so we can get more people involved.

As a personal goal this year, I would like to see if we can raise membership and create a path for technicians to upgrade to General. The cross section of hams operating are getting up in years and the only way to preserve our ham bands is to recruit younger people into the hobby. This brings in new energy and talent who have fresh ideas to keep the spirit of ham radio alive.

As we find new projects to work on, we may ask for volunteers to help lead the effort and to build leadership within the club. There are members who are well versed in POTA, digital modes, building projects, DX and a variety of skills so I would like to have them demonstrate their skills so the rest of us can learn at the meetings. I've been a ham since 1982 and although technically skilled in many areas, I'm still a beginner when it comes to some of the newer digital modes and operating proficiency. Ask questions and bring up issues and we all learn something new.

Thank you for another year as the VP and I look forward to seeing you at the meetings.

73, Mark Nelson
KA1INE@ARRL.NET

The Electronics of Radio

Marla Wallace, WA1GSF

Question: Why do resistors come in such strange values? Wouldn't it make more sense for them to be in the series 1, 1.5, 2, 2.5, 3... That way, you would get sensible values like 20 Ohms and 50 Ohms. What gives?

Answer: It has to do with tolerance. If you make resistors that are exact, you could have any value you wanted. But the manufacturing process isn't exact and the more precise you try to get the value, the more expensive it is to manufacture that resistor. So, resistors are specified by three parameters: their resistance in Ohms, their power dissipation limit in Watts and the tolerance to which the resistance is guaranteed.

Let's say you make a resistor that is precise to +/- 10%. That means that a 1k resistor can have any value from 900 to 1100 Ohms and meet the specification. What would a 10% resistor's value have to be such that the 1k at +10% and resistor X at -10% would be the same? A little high school algebra gives us the answer:

$$0.9X = 1100, \text{ or}$$

$$X = 1100/0.9, \text{ therefore}$$

$$X = 1222$$

But since the tolerance is so imprecise, the value is only specified to two significant digits, thus as 1.2k.

If you go through the math, the resistances for 10% tolerance form a set of values which approximate the series 1.2^n . It's not exact, but the standard set of values for 10% resistors follows this relationship reasonably closely. The standard twelve values are:

1.0	1.2	1.5	1.8	2.2	2.7
3.3	3.9	4.7	5.6	6.8	8.2

whereas following the 1.2^n series exactly would give:

1.0	1.2	1.4	1.7	2.0	2.4
2.9	3.2	3.8	4.6	5.5	6.6
7.9	8.7				

And require two extra resistors to form a set. Economics rules, so the 12-member set is what the resistor makers use.

Check it out on a calculator: just keep multiplying by 1.2, rounding to the nearest two-significant-digit value. You'll find that 20 isn't in the series, so you must pick either 18 or 22; 50 isn't in the series, so you must pick 47 or 56, and so on.

You can play in the cracks by using the 5% series. This series uses the formula 1.1^n and produces these values:

<u>1.0</u>	1.1	<u>1.2</u>	1.3	1.4	<u>1.5</u>
1.7	1.9	2.1	2.3	2.5	<u>2.7</u>
3.0	<u>3.3</u>	3.6	4.0	4.4	4.8
5.3	5.8	7.0	8.4	9.3	

(The underlined values also appear in the set of standard 10% resistors.)

To form the actual set of 5% values, the manufacturers sort of split the difference so that all the 10% values also are 5% values. This set is:

<u>1.0</u>	1.1	<u>1.2</u>	1.3	<u>1.5</u>	1.6
<u>1.8</u>	2.0	<u>2.2</u>	2.4	<u>2.7</u>	3.0
<u>3.3</u>	3.6	<u>3.9</u>	4.3	<u>4.7</u>	5.1
<u>5.6</u>	6.2	<u>6.8</u>	7.5	<u>8.2</u>	9.1

(Again, the standard 10% values are underlined.)

Some kinds of inductors and capacitors also follow this scheme.

Until next time, keep the questions coming.

Feature Article: Ladder Line Support on the Cheap

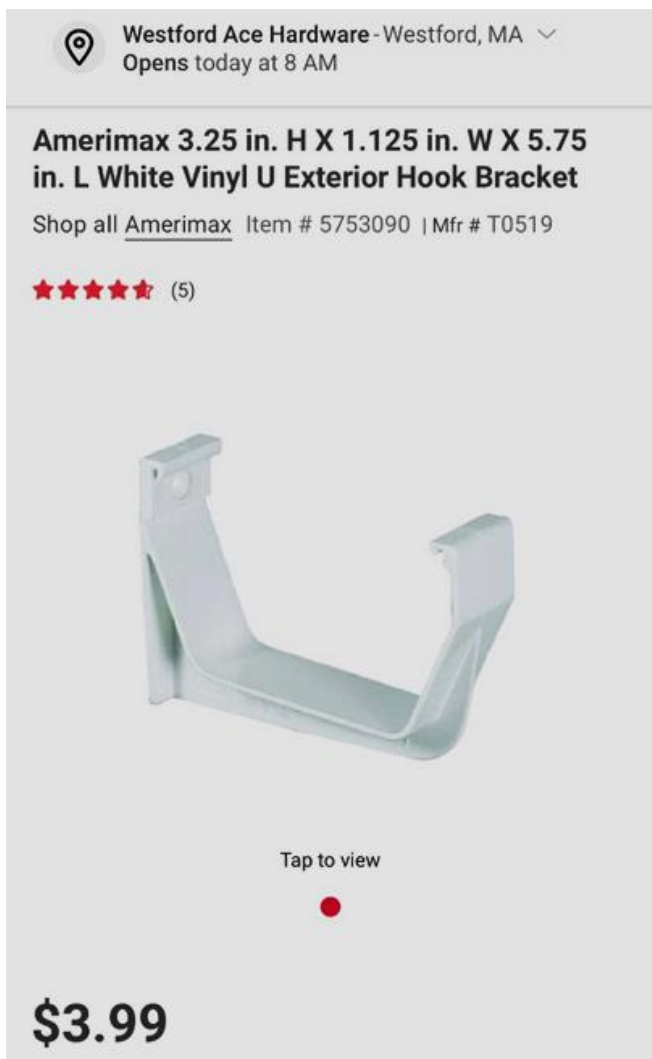
By Andy Wallace, KA1GTT

My HF antenna uses a 450 Ohm ladder line parallel wire feeder part of the way. When you use ladder line, it's not shielded like coax and needs special care for running it. You can't coil or fold it on itself, lay it on the ground, or run it close to metal (which causes a short RF frequencies).

Mine was hanging at neck level part of the way and I wanted to hang it better. At Ace Hardware in Westford (and surely other stores) I found a plastic gutter bracket which turned out to be the perfect size to support the feedline by the window openings in the ribbon. Ace Hardware had it in stock (#5753090) for \$4.



--de Andy KA1GTT



No more strangulation! And being plastic, it won't affect the performance. *[Well, not enough to matter – the plastic does have a different dielectric constant from air, but there's not enough interacting with the line to affect the impedance significantly and any impedance bump is very localized. – ed.]*

Strays

Talk to Santa

For those with children or grandchildren who would like to ask Santa for what they want for Christmas, the SANTA NET is now on 3.916 at 7pm Central Time (8pm Eastern) from Thanksgiving to Christmas.

Sign up at <https://www.cqsanta.com> and neg openx 30 minutes in advance.

--de Bill Poulin, WZ1L

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 potentiality receive \$410 per year from the ARRL.

The program began at 7:30 and ended at 8:30.
The meeting adjourned at 8:40. There were 18 attendees.

There was no BARS Board of Directors Meeting for November

BARS Membership

Our current combined membership is 116.

We are now accepting renewals for 2024. For 2024, dues will remain at \$15.

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

from Bruce Anderson, WILUS, Treasurer

2024 BARS Member Dues

A \$15 annual BARS membership now runs from January 1st and expires on December 31st. Any renewal or new membership made after September 1 will be valid until December 31st of the next 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 December 2023

We are now accepting renewals for 2024. For 2024, dues 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.
- With cash or check by mailing \$15 to Billerica ARS, 16 Regis Road, Tewksbury, MA 01876

In November we had income of \$15 from one new/renewals. Our expenses were Zoom \$16.99 and PayPal \$1.01. We now have \$1104.85 in the Bank and \$504.65 in our PayPal account for a total of \$1609.50.

Bruce Anderson
WILUS

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 ~ 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 being held via Zoom until further notice. A link will be sent via the BARS email reflector to all currently paid up members.

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

VE Sessions

Our VE sessions are again being 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](https://www.chelmsfordbiblechurch.org/128-Gorham-St-Rear-Door-Chelmsford-MA-01824-3220) ([map](#))

VE Session Report for November

We had four people show up for the November VE exam session. One upgraded to General, two upgraded to Extra and one new General was created.

Our next exam session will be at the Chelmsford Bible Church on December 14 at 7:00 PM. You may now pre-register for BARS VE exams at <https://HamStudy.org>.

Thanks to Gary W1GFF, and Bill W1ZL for their help in running the session.

--de Bruce Anderson, WILUS

Club Breakfast every Saturday

On Saturday mornings around 8:30AM, we have a virtual Zoom breakfast session (a link was provided in email some time ago).

We meet in-person weekly at 8:15AM for a casual, social breakfast at Stelio's restaurant.

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

Future Meetings

We will again have the gathering at The Great Wall Restaurant in Bedford, MA on Wednesday night 1/10/24 at 6:30 PM in lieu of the January meeting.

The February meeting will be on 2/7 and will be hybrid – in person AND via Zoom.

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 Scott Ginsburg, K10A

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

Here are the popular suggestions for this month:

<u>Date</u>	<u>Event</u>
Dec 1-3	ARRL 160-Meter Contest http://www.arrl.org/160-meter
Dec 9-10	ARRL 10-Meter Contest ** http://www.arrl.org/10-meter
Dec 17	ARRL Rookie Roundup, CW http://www.arrl.org/rookie-roundup
Dec 30	Youth On The Air (YOTA) Contest https://www.ham-yota.com/contest/
Dec 30-31	Stew Perry Topband Challenge http://www.kkn.net/stew/

** 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/weekend_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