

CAARA NEWS



Cape Ann Amateur Radio Association
Gloucester, Massachusetts
MARCH 2023 EDITION



PRESIDENT'S COLUMN

by Brandon- NQ1W

Dear Members,

Enclosed with this President's Letter are some photos from our Tech-in-a-Day session from the last weekend in February up at the clubhouse. This was the first training event after the recent renovations. In it you can see some of the new gear we got for doing demonstrations, presentations, training, and our movie nights. **Photos on page 6**

We are so excited to have events back at the clubhouse! This next month look for several fun events. We are planning, breakfasts, movie nights, and electronics training for March. Watch the members distro and sign up for Caaramail for more information.

I'd also like to highlight and thank a few members this letter. Big thanks to Bill Morris W1WMM for cooking at the breakfast building fundraiser. These breakfasts are so important for raising the funds we need to keep the doors open at the clubhouse. Also, If you come for pancakes and camaraderie please consider donating generously as these funds will keep both the clubhouse open and the pancakes coming. We really need that financial support to pay for all the things to keep us going, electricity, pancake mix, and heat. Otherwise keeping the doors open becomes impossible.

Also, I'd like to thank Jon Cunningham and Cutter Herlihy, for their help in getting the projector screen up and new heating system wired into our nest monitoring system. This work was essential for getting going in February training.

Finally I'd like us to thank Bill Poulin WZ1L and the CAARA VE staff for taking a whole day to conduct the new ham training last Saturday. What a great way to break in the new clubhouse training room! I think



everyone involved left felt rewarded and grateful for having done it.

Until next letter please enjoy the Solar Maximum we are experiencing. Even technicians can get on 10m and work globally with these conditions. A truly great time to experience Ham radio. No 10m radio? Come visit us next member meeting and try out 10m on our beam! Cheers!

Regards,

Brandon Hockle NQ1W

President CAARA

THE EMCOMM MINUTE

by Dean- KB1PGJ

So if you are involved in emergency communications or operate HF portable like myself you'll have to be able to operate a truly portable station with its own independent power source. That means that you will have to power your station off of a battery or a generator. So for this months column I thought I would show you three pieces of equipment that you will need to run your station off of a battery. So all of these items that you see in the photo you can buy by going to www.westmountainradio.com and please note that some of them may be back ordered.



The first item is a Super power gate PG 40 S .It's a really neat device where you can hook up your DC battery, AC power supply and ham radio into one box. The PG 40 S allows you to charge your battery through your power supply and if the power goes out it will automatically switch power over to your battery seamlessly. I have run this on ARRL field day and it works great. There is no power drop off when it switches over from one power source to the next. It can run up to 40 amps of power and can charge either lead acid, gelled or AGM batteries automatically. It has great

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CAARA Newsletter is a monthly publication of the Cape Ann Amateur Radio Association (CAARA).

It is the policy of the editor to publish all material submitted by the membership provided such material is in good taste, relevant to amateur radio and of interest to CAARA members, and space is available. Material is accepted on a first come, first serve basis. Articles and other materials may be submitted by internet to Jon at jpcrockport@gmail.com. If possible, material should be in Word format. Material may also be submitted as hard copy to Jon-K1TP or any Club Officer.

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Welcome to CAARA:

CAARA, an ARRL affiliated club, operates the 2 meter W1GLO repeater on 145.130 MHz with antennas located on the ATT cell tower in the Blackburn Industrial Complex in Gloucester Massachusetts. It has an average effective radius of 60 miles, and serves Eastern Massachusetts, Cape Cod, Rhode Island, Southern New Hampshire, and maritime mobile stations.

CAARA also operates the W1GLO repeater on 224.900 located at the CAARA clubhouse.

The 443.700 repeater is now on the ATT cell tower in the Blackburn Industrial Complex with greatly enhanced performance running in fusion mode and linked to 10 other repeaters in the New England area.

The Association is one of the few amateur radioclubs that has its own clubhouse. Located at 6 S tanwood Street in Gloucester, with a variety of HF stations with beam, vertical, or G5RV antennas.

Amateur radio exams are held on REQUEST at the CAARA clubhouse. Anyone who is considering a new license or an upgrade, is welcome to test with us. Currently pre-registration is necessary. Contact the head of our VE team Bill Poulin- WZ1L if you have any questions about monthly testing.

Monthly member meetings are held on the second Saturday of each month at noon except for July and August.

Each Sunday evening at 9:00 PM, the club operates a 2 meter fm net on 145.130. This is an open and informal net which disseminates club news and prepares operators for emergency communications work. All are invited to check into the net as club membership is not a requirement.

The club is open most Tuesday's from 5- 8PM for CAARA members and interested parties to stop by and socialize, as well as use the extensive collection of ham radio gear.

This newsletter is published under the auspices of the Cape Ann Amateur Radio Association (CAARA), However, all content is the work of individual contributors and may contain ideas, opinions or views not necessarily shared or supported by the CAARA Board of Directors or the membership.



build quality with a heavy duty metal enclosure. It goes for \$139.95 .

Next on the list is a rigrunner 4004U .Think of this item as a

DC power strip. You can run up to 4 rigs off of a max of 40 amps. It has 2, 25 amp powerpole connectors, 1, 10 amp and 1, 5 amp connections as well. So you hook up multiple rigs off of your battery .I like how it has a fuse for each connector and it has a RFI protection capacitor as well. Plus if you need to charge your phone or Ipad you have the two USB connectors. That's great for a power outage. The 4004U goes for \$89.95 .

The last on the list is the N8XJK Super Booster. If you don't have this device and run off of battery power I highly recommend you get it. As we know batteries run off of 12 volts .The thing is our ham radios like to run at 11.7 volts minimum to transmit and can have better performance at 13.8 volts . Combine that with the fact

that when you run your battery the voltage continues to drop and you can let batteries get below 10 volts as a general rule or you will have negative effects on the battery. So the N8XJK Super Booster takes the 12 volts form the battery and boosts it up to 13.8 volts making your radios run and operate better. Plus the booster will let you get more power out of your battery and make it last longer by eliminating the voltage drop outs at 11 volts or lower. It has a 10.5 volt auto shut off and as a boost/no boost switch if you wish to bypass it. This booster has very little RFI. I run it all the time and I do not hear any hash from it or see it on my Icom 7300 screen . It also has a voltage trimer pot so you can raise the voltage up to 15 volts output. This helps so you can raise it up a bit to get the voltage correct at your radio if you have a long DC power cable. It has a nice cooling fan which is really quiet. The price is \$249.95 but it is worth it as you can get longer amp hour running times out of your battery. Like the others it is ruggedly built for portable operations and can stow away in a backpack.

If you can't get these items from Westmountainradio or are looking for alternatives MFJ Enterprises sells stuff similar to them. The build quality isn't as great but they do work.

So for the next thing to show you may not be the most sexiest or most exciting part of ham radio but I have not covered it before. I'd like to talk about fuses. Yes, I know, it may sound simple but when you blow a fuse and don't have any around it's not fun. I am reminded of a CAARA field day back years ago and everything was going great with one station and all of a sudden a fuse blew on a power supply and we were sunk because it happened at night and all the stores were closed and no one had any spare fuses around. So if you learn anything from this article go get some spare fuses for your ham equipment ! I now keep a bag of 4 different types of fuses when I got portable HF operating.

If you look at the photo I provided there are 4 different types of fuses I need to operate my equipment. The first is your usual large blade fuse. I use those in all the West Mountain Radio DC power equipment I just talked about. The next is a mini blade fuse. I need extra of those since my Icom 7300 has one inside the radio. Make sure to check your HF rig to make sure



that you may have a interior fuse if the power goes out in it. Next is the large glass fuse. I use those for my Alinco 30 amp power supply . The last small white fuse is a 6 amp slow blow ceramic fuse for the Astron power supply I have. That fuse is on the inside of the power supply. So my main point to get across is to take a look at all of your equipment and ham gear you have and take a inventory of what fuses they use and get some spares and store them somewhere when those fuses eventually pop. If your rig goes dead make sure you check the fuses on the inside as well. Especially if your in a emergency communications situation or operating HF portable in the middle of nowhere.

So now since it is March and it's getting warmer here's a reminder that if you have any outdoor antennas now is the time to check all your coax and connections to make sure all is well. The furry woodland creatures can chew through your coax and any other outdoor wires you may have. Plus its always good to check your antennas SWR to make sure there are no problems since snow and ice build up can cause water to get into the coax connections. So that's it for now, See you next month...Dean-KB1PGH



Ham Radio Operators, We Need Your Help During Solar Eclipses!

Ham Radio operators, we're calling you! Members of the Ham Radio Science Citizen Investigation (HamSCI) will be making radio contacts during the 2023 and 2024 North American eclipses, probing the Earth's ionosphere. It will be a fun, friendly event with a competitive element—and you're invited to participate.

Both amateur and professional broadcasters have been sending and receiving radio signals around the Earth for over a century. Such communication is possible due to interactions between our Sun and the ionosphere, the ionized region of the Earth's atmosphere located roughly 80 to 1000 km overhead. The upcoming eclipses (October 14, 2023, and April 8, 2024) provide unique opportunities to study these interactions. As you and other HamSCI members transmit, receive, and record signals across the radio spectrum during the eclipse, you will create valuable data to test computer models of the ionosphere.

STUFF

by Curt- AA3JE



When you get older, there are inevitable problems. Especially if you are a radio amateur. Not the common problems like: “Is this melanoma?” or “It’s time for your colonoscopy, Mister Wright”, but the problem of “Stuff”.

Stuff consists of the things that you no longer use but are too good to throw away. Examples of stuff include: The 2 meter antenna that needs re-soldering, The emergency battery box where the lead acid battery has sulfated solid, the electric fence charger that kept the racoons away (and provided my wife with a shocking experience).

If we are compulsive, we carefully put them in indexed boxes with a computer file telling us where everything is. This works for a while, but eventually there is no place to put the boxes other than the crawl space under the house. This has disadvantages, as they form a comfortable apartment building for the rats and the moles.

When the crawl space is filled, you have a problem. That is why I bought a house with a garage. Lots of lovely wall space where I could put up heavy shelving.

But a few years later, all the shelves were full, and there was no more wall space.

Some if it had to go.

I went to the local second-hand store.

“Just what is this?” said the nice lady.

“Hammerlund DX 140. Very popular when intercepting German code in WWII.”

“We mostly do clothes.....”

OR

“What is this?”

“Tuned tube type linear amplifier, careful, the tubes are full of mercury.”

“Hazardous waste day is in August.”

After hitting all the local thrift shops, I had struck out. No one wanted old ham gear that didn’t actually work. Some of it was fifth hand, being passed from Ham to Ham, but never actually ever getting repaired. Other things worked but were not usable in the modern world. The Hallicrafters SSB transmitter for example. Even when new it drifted so badly off frequency that you operated with one hand on the tuning knob and ignored the harsh complaints of people on adjacent frequencies. The ancient linear amplifier with the mercury tubes still works, but it generates so much high local frequency hash that the receiver shuts down.

Some of it I had a lot of effort invested. The TRF set from the 1920’s, where I had to get Soviet Era tubes

and obsolete batteries is a wonderful thing, and would, if coaxed, actually receive. Three stations at once, it is true, but in time you learn how to listen to it, just like Jazz.

And what if I actually died. All this GOOD STUFF would go to the dumpster. No one born after

1950 would know what it was.

After much thought. I realized that the lower pasture would be a great place to put a pole barn.

I will keep you posted.





TECH IN A DAY AT THE REMODELED CLUB FACILITY

Congratulations to the newly licensed hams and to VEC Bill- WZ1L and his team.



THANKS TO THE ARRL \$25,000 GRANT FOR THE NEW FIRST FLOOR UPDATES .

Amateur Radio Newline Report

NEW ZEALAND HAMS FACE CYCLONE CHALLENGE

JIM/ANCHOR: Our top story takes us to New Zealand, which is trying to recover after Cyclone Gabrielle touched off a national state of emergency. On the North Island at least 11 people were killed and thousands were reported missing. Jim Meachen ZL2BHF brings us up to date.

JIM: Radio operators with Amateur Radio Emergency Communications, or AREC, were put to the test after Cyclone Gabrielle swept through the North Island, bringing floods and damage to infrastructure. AREC volunteer members and other licensed hams had braced themselves in advance of the storm's landfall on Sunday the 12th of February. Don Robertson, ZL2TYR/ZK6EX, the CEO of AREC, told Newline that in Auckland, AREC began providing radio support across the region for field teams and maintained VHF contact with the region's 14 civil defence centres plus local community response groups. Volunteers logged contacts, handled logistics, phone calls, communications and used their PC skills as needed until AREC was stood down at midday on Thursday the 16th of February. Meanwhile in hard-hit Hawkes Bay, amid rising rivers and power outages, only three AREC members were able to respond, each working 12-hour shifts.

Don told Newline: [quote] "There are many more stories of the heroic efforts by AREC members and licensed amateur radio operators and the details will come out in due course." [endquote] He said that many recovery efforts have got underway and are expected to continue for years. As Newline went to production search and rescue workers were also arriving from Australia.

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BBC FOCUSES ON HAMS' ROLES IN TURKEY/SYRIAN EARTHQUAKE

JIM/ANCHOR: Hours after a 6.4 magnitude earthquake rocked the already-stricken region of Turkey and Syria on Monday, February 20th, mainstream media turned its attention to the critical role that amateur radio is playing there. Jeremy Boot G4NJH picks up the story from here.

JEREMY: With communications taken down in much of the region of Turkey and northern Syria, amateur radio repeaters on VHF and UHF frequencies kept communications open for rescue work and other aid. That dramatic story was told on the BBC programme, "Digital Planet," on Tuesday, February 21st, by Aziz Şasa, TA1E, president of the Turkish Amateur Radio Association. The retired engineer was interviewed by show host, Gareth Mitchell, an amateur radio operator himself, with the call sign M7GJM.

Aziz said that following the disaster, VHF and UHF repeaters throughout the region were the only means of communication for seven days, as rescuers and agencies shared frequencies and information. He said that the longer-distance capabilities of HF were not as essential because most of the issues being handled were local and could be handled via shorter-range frequencies.

Asked what the greatest contribution of the hams has been so far, Aziz said simply: [quote] "We helped in saving lives. I believe that's quite a nice thing for us." [endquote]

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OPERATORS NEEDED GLOBALLY FOR AUTISM AWARENESS EVENT

JIM/ANCHOR: A call has gone out worldwide for hams to get on the air to bring greater attention to the needs of individuals who have autism. We have more details from Paul Braun WD9GCO.

PAUL: Amateurs throughout the world whose lives have been touched by autism are going to be getting on the air to help raise awareness of autism spectrum disorder during World Autism Awareness Week. Between March 25th and April 2nd, operators will be looking to log stations using any mode of their choice with the goal of directing successful contacts to the event's page on QRZ.com. This is all about education.

Amateurs in the United States will be using the call W2A. Hams in other countries may want to secure local special event calls but they will be able to use their home call instead if a special call is not available. All participating hams will be calling "CQ Special Event, Autism Awareness Week."

The organizer James, KB2FMH, will also be setting up a Discord chat group channel to help operators

coordinate their bands and modes to make the most of propagation and traffic. Operators outside the United States should also let James know what callsign they will be using.

Hams have already expressed interest from around the world but more operators are

WASHINGTON STATE CAMPING TRIP ADDS A SOTA DAY

JIM/ANCHOR: Organizers of the 18th annual Salmoncon in Washington state have changes in their plans this year and they're shouting those changes from the summits - for good reason - as we hear from Ralph Squillace KK6ITB.

RALPH: The Salmoncon gathering in Washington state is sharing its celebration of QRP operators this year with SOTA operators by adding some Pacific Northwest summits to their annual campout.

Hams will start to gather on Friday, July 7th and activation of the peaks will begin early on Saturday, July 8th. Through Sunday, low-power operators in the Pacific Northwest will enjoy the fellowship of QRP and activities such as transmitter hunts. They will also activate the Salmoncon special event callsign K7S. This year, organizers are hoping to get as many activations as possible on Saturday at noon local time from peaks with the SOTA designation W7W. Salmoncon is promoting summit-to-summit and chaser contacts on 60, 40 and 30m HF bands along with 2m simplex. There will be a special emphasis on peaks in the W7W/KG and W7W/CW areas.

Visit the Salmoncon website for more details.

<https://www.pnwqrp.org/salmoncon>]

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AMSAT NORTH AMERICA NEEDS ENGINEERS

JIM/ANCHOR: Engineers with an interest in satellites and satellite operation may want to consider helping out AMSAT North America as volunteers. Andy Morrison K9AWM tells us what they're looking for.

ANDY: If you're a satellite enthusiast with an engineering background and want to become more involved in AMSAT North America, you may want to consider one of these volunteer opportunities. AMSAT's FOX-PLUS team needs a volunteer electrical engineer with RF experience and a working

knowledge of analog and digital communications protocols. The right candidate will be involved in designing and building the RF communications subsystems for low-earth-orbit 1U-3U CubeSats. This position will help provide digitally synthesized audio for FM modulated VHF/UHF/SHF voice and telemetry channels.

AMSAT's FOX and GOLF CubeSat teams also need mechanical engineers to join its all-volunteer team of a dozen or so electrical, mechanical, software and systems engineers. The team is developing a series of low-earth-orbit and highly elliptical orbit 1U-3U CubeSats for AMSAT's engineering and educational goals.

Candidates should be US citizens or permanent residents of the US. Volunteers can expect to spend about five hours a week on the project they're assigned to and will attend a weekly meeting online to provide updates.**

NOMINATE YOUNG AMATEURS FOR NEWSLINE AWARD

JIM/ANCHOR: We remind our listeners that young hams who live in the continental United States have an opportunity to make news, if they aren't already doing so, by being a recipient of this year's Amateur Radio Newsline Bill Pasternak Memorial Young Ham of the Year Award. Consider nominating an amateur radio operator 18 years of age or younger -- someone who has talent, promise and a commitment to the spirit of ham radio. Find application forms on our website arnewsline.org under the "YHOTY" tab. Nominations open on the 1st of May and close on May 31st.

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SOUTHERN MARYLAND UPGRADES REPEATER SYSTEM

JIM/ANCHOR: Residents in southern Maryland can be reassured that emergency communications just got a little easier, thanks to the efforts of local hams. Here's Sel Embee KB3TZD with those details.

SEL: A newly installed radio repeater system has given Calvert County, Maryland, and the surrounding region an upgrade in the emergency-communications system. Licensed as K3CAL, the system was a project of the Calvert Amateur Radio Association and the Radio Amateur Civil Emergency Service, or RACES.

The RACES officer for Calvert County, William Hackett Sr., N3XMZ, told the website BayNet.com that the new system was a huge improvement over its predecessor. It will provide enhanced coverage for handheld radios throughout Calvert County, into the Chesapeake Bay region and parts of Patuxent River. The system includes UHF capability on 444.950 MHz from a tower in the southern end of the county and a VHF system on 146.985 MHz from a tower in the northern part of the county. The two sites are also capable of being linked. Brian Kress, KB3WV, vice president of the Calvert Amateur Radio Association, called it [quote] "a win for Calvert County citizens as another layer of protection from a communication blackout." [endquote]

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HAMS SHINE DURING AMERICAN LIGHTHOUSE WEEKEND

JIM/ANCHOR: If the lights were shining a little brighter over lighthouses in Latin America and elsewhere in the Southern Hemisphere, it was likely because of the American Lighthouses weekend on the air from February 17th through to the 19th. Graham Kemp VK4BB brings the illuminating details.

GRAHAM: Perhaps no one will remember this year's American Lighthouses weekend better than hams with the Amateur Radio Alliance of Puerto Rico, KP4ARA. Operators accomplished a first-time double activation from two lighthouses on the island - the Punta Borinquen lighthouses, one historic and one relatively new. Working several bands and using digital modes, the lighthouse hams Emilio, WP4KEY, and Wanda, KP4NYC, logged QSOs with a total of 42 DXCC entities, including Asiatic Russia, Venezuela, the Philippines, England, Switzerland and Japan.

The weekend was marked by another dramatic first: participation by radio operators at the Esperanza Base in Antarctica. According to the organizing committee of Argentina, the Radio Club Grupo DX Bahia Blanca of Argentina, this established a new record for the total number of DXCC entities and countries involved in the event. The general coordinator of the event was Carlos Almirón, LU7DSY, who said in a public statement how pleased he was with the enthusiasm and collaboration that helped create pride and new accomplishments during this 15th year of the February lighthouse festival.

AUSTRALIAN HAM HONORED FOR FALCONSAT-3 FINAL SIGNALS

JIM/ANCHOR: A ham in Australia has been honored for having copied the final signals of an important-but-aging satellite as it was dying. We hear that story from Jason Daniels VK2LAW.

JASON: Congratulations to Mark Jessop, VK5QI, of South Australia for being the recipient of the FS3 Award from the Mauritius Amateur Radio Society. The nonprofit amateur group created the honour to recognise the last formal reported signals from the FalconSat-3 micro-satellite. The 50kg satellite, launched in 2007 from Cape Canaveral in Florida, went into decay in January.

The amateur radio society sent the Australian satellite enthusiast his certificate along with some stamps commemorating MO-112, the Mauritian Infra-Red Satellite, which was that nation's first satellite.

FalconSat-3 was developed by cadets and faculty at the United States Air Force Academy in Colorado but control of the satellite was transferred to amateur radio operators in April of 2017. A notice in AMSAT News Service thanked Mark Hammond N8MH for his years of work as a command station for FalconSat-3.

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WORLD OF DX

In the World of DX, listen for Dave, YC5YC/7, and Arli, YC7UDD/p operating on Teluk Harapan Beach on Maratua Island, IOTA number OC-166, from the 25th through to the 27th of February. They will operate SSB, FT8 and RTTY on HF. They will upload logs to LoTW and Club Log. There will be 10 other operators with YB7, YC7 and YD7 calls operating near them doing a Beaches on the Air operation.

Eight special call signs are being activated to commemorate the 43rd anniversary of the 1980 referendum for autonomy and representing the provinces of Andalusia. They are on the air through the 28th of February. The call signs are AN43AL (Almeria), AN43CA (Cadiz), AN43CO (Cordoba), AN43GR (Granada), AN43HU (Huelva), AN43JA (Jaen), AN43MA (Malaga), AN43SE (Sevilla). Be listening as well on the 28th of February for AN43AND, which is Andalusia Day. QSL via LoTW and eQSL.

Be listening for David, F4FKT, active as FT4YM from Dumont d'Urville Station, IOTA number AN-Ø17 from Ile des Petrels. He is on the air until the 27th of February. He will also operate as FT4YM/mm from the icebreaker "L'Astrolabe" from the 28th of February to the 5th of March. QSL via F5PFP.

(425 DX BULLETIN)

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KICKER: FISHING FOR QSOs ON A FROZEN LAKE

JIM/ANCHOR: For our final story, we visit with a group of hams in Minnesota on a wintertime fishing expedition. Kent Peterson KCØDGY tells us what they caught while at the lake. Here's a hint: It wasn't fish.

KENT: In Minnesota, it's considered a winter tradition for some people to go out on the frozen lakes for fishing. One group that took to the frozen waters in the Twin Cities region of the state were hoping for a very different kind of catch: They set up their equipment on White Bear Lake at Mahtomedi Beach in the hopes of reeling in some QSOs while operating portable. This was the February 11th "Hams on the Ice" event where antennas took the place of fishing rods and the waves being plumbed were radio waves.

The four-hour event drew 20 or so amateurs. Some brought portable heaters. Others simply were warmed by the idea of working some DX -- and many did. This was the amateurs' winter equivalent of a monthly group gathering known as Hams in the Park held during warmer months.

According to a video on the YouTube channel of Matthew, KØLWC, the hams were also there to provide an opportunity for some of the regions' youngest licensees: With a little help, some of the newer hams got their first contacts on HF radio.

With mic fright being a big concern for a lot of newcomers, you might even say they broke the ice.

This is Kent Peterson KCØDGY.

(QRZ.COM, MINNESOTA HAM RADIO, YOUTUBE)

PAUL/ANCHOR: Do you have a piece of Amateur Radio News that you think Newline would be interested in? We are not talking about advertising

your club's upcoming hamfest or field day participation, but something that is out of the ordinary. If so, send us a brief overview via the contact page at arnewsline.org. If it's newsworthy and we would like to cover it, we'll get back to you for more details.

NEWSCAST CLOSE: With thanks to Amateur Radio Weekly; AMSAT News Service; Baynet.com; the BBC; CNN; CQ magazine; David Behar K7DB; Don Robertson, ZL2TYR/ZK6EX; DX-World.net; Emilio Ortez Jr., WP4KEY; FCC; 425 DX News; Greg Mossop, GØDUB; QRZ.com; Reuters; Minnesota Ham Radio; SOTA Reflector; shortwaveradio.de; Wireless Institute of Australia; YouTube; and you our listeners, that's all from the Amateur Radio Newline. We remind our listeners that Amateur Radio Newline is an all-volunteer non-profit organization that incurs expenses for its continued operation. If you wish to support us, please visit our website at arnewsline.org and know that we appreciate you all. We also remind our listeners that if you like our newscast, please leave us a 5-star rating wherever you subscribe to us. For now, with Caryn Eve Murray KD2GUT at the news desk in New York, and our news team worldwide, I'm Jim Damron N8TMW in Charleston West Virginia saying 73. As always we thank you for listening. Amateur Radio Newline(tm) is Copyright 2023. All rights reserved.



THIS WAS THE BEST HAM FEST, LOOK AT THESE GREAT BUYS. COULD YOU STORE THEM FOR ME TILL MY WIFE IS OUT OF TOWN ?

FUNDRAISING FOOD EVENTS AT THE CLUB

We have opened the club back up again after being closed for the safety of club members during the pandemic and have started offering lunch and breakfast events. I mention these food events are for “Fundraising” and not included in your dues. If we were to offer free breakfast and lunch events, the dues would be double what they are. The funds raised at members meeting lunch and breakfast are for paying for the little extras around the club which are not budgeted for.

Please enjoy our food events but please donate a minimum of **\$5.00 per meal**....thanks to the many that put more than that in the donation jugs.



CAARA LUNCH EVENT

W8LT - A History of Amateur Radio at Ohio State University

W8LT is the call sign for the Amateur Radio and RF Club at The Ohio State University (OSU).

The university club has a long history, and archive records indicate that 1926 was the year it officially became a club, likely making it the oldest one on campus. W8LT is just 3 years shy of celebrating its 100th anniversary.

In the early 1920s, the call sign started out as 8LT, until the Radio Act of 1927 added a "W" to all radio call signs. Then, W8LT had been closely associated with WOSU Radio, the university's non-commercial station, which began as WEAO in June of 1922. The two stations were believed to have shared a small building near campus until the mid-1950s.

In 1957, both stations were moved to small military-style Quonset huts. From July 1961 to January 1963, the club was unable to find a location anywhere on campus, so all of their equipment was put into storage in club member Bill Hale's, K8JIX, basement and brought out only for ARRL Field Day each June.

Eventually, W8LT found a new home in the bell tower at Ohio Stadium, a room directly below where the bell rings after every home-game win. That location allowed a 500-foot-long wire antenna to be stretched from the tower to a nearby smokestack at OSU's power station. The result was a very powerful signal that could be heard clearly on stations around the world.

When Ohio Stadium was renovated, W8LT moved again, this time to Bevis Hall, where it remains today near the location of the old military - style Quonset huts.

Today, the club continues to grow with 15 active members, including students, staff, and alumni.

Faculty Advisor Larry Feth, K8HTC, said that the club takes every opportunity to recruit new members and offer license testing sessions.

More information is available on the W8LT website and on their Facebook page.

W8LT is an ARRL Affiliated Club and participates in the ARRL Collegiate Amateur Radio Program.



Hobby Club's Missing Balloon Feared Shot Down By USAF

A small, globe-trotting balloon declared “missing in action” by an Illinois-based hobbyist club on Feb. 15 has emerged as a candidate to explain one of the three mystery objects shot down by four heat-seeking missiles launched by U.S. Air Force fighters since Feb. 10. The club—the Northern Illinois Bottlecap Balloon Brigade (NIBBB)—is not pointing fingers yet. But the circumstantial evidence is at least intriguing. The club’s silver-coated, party-style, “pico balloon” reported its last position on Feb. 10 at 38,910 ft. off the west coast of Alaska, and a popular forecasting tool—the HYSPLIT model provided by the National Oceanic and Atmospheric Administration (NOAA)—projected the cylindrically shaped object would be floating high over the central part of the Yukon Territory on Feb. 11. That is the same day a Lockheed Martin F-22 shot down an unidentified object of a similar description and altitude in the same general area.

There are suspicions among other prominent members of the small, pico-ballooning enthusiasts’ community, which combines ham radio and high-altitude ballooning into a single, relatively affordable hobby.

“I tried contacting our military and the FBI—and just got the runaround—to try to enlighten them on what a lot of these things probably are. And they’re going to look not too intelligent to be shooting them down,” says Ron Meadows, the founder of Scientific Balloon Solutions (SBS), a Silicon Valley company that makes purpose-built pico balloons for hobbyists, educators and scientists.

The descriptions of all three unidentified objects shot down Feb. 10-12 match the shapes, altitudes and payloads of the small pico balloons, which can usually be purchased for \$12-180 each, depending on the type.

“I’m guessing probably they were pico balloons,” said Tom Medlin, a retired FedEx engineer and co-host of the Amateur Radio Roundtable show. Medlin has three pico balloons in flight in the Northern and Southern hemispheres.

Aviation Week contacted a host of government agencies, including the FBI, North American Aerospace Defense Command (NORAD), the National Security Council (NSC) and the Office of the Secretary of Defense for comment about the possibility of pico balloons. The NSC did not respond to repeated requests. The FBI and OSD did not acknowledge that harmless pico balloons are being considered as possible identities for the mystery objects shot down by the Air Force.

“I have no update for you from NORAD on these objects,” a NORAD spokesman says.

On Feb. 15, NSC spokesman John Kirby told reporters all three objects “could just be balloons tied to some commercial or benign purpose,” but he did not mention the possibility of pico balloons.

Launching high-altitude, circumnavigational pico balloons has emerged only within the past decade. Meadows and his son Lee discovered it was possible to calculate the amount of helium gas necessary to make a common latex balloon neutrally buoyant at altitudes above 43,000 ft. The balloons carry an 11-gram tracker on a tether, along with HF and VHF/UHF antennas to update their positions to ham radio receivers around the world. At any given moment, several dozen such balloons are aloft, with some circling the globe several times before they malfunction or fail for other reasons. The launch teams seldom recover their balloons.

The balloons can come in several forms. Some enthusiasts still use common, Mylar party balloons, with a set of published calculations to determine the amount of gas to inject. But the round-shaped Mylar balloons often are unable to ascend higher than 20,000-30,000 ft., so some pico balloonists have upgraded to different materials.

Medlin says he uses a foil balloon sold by Japanese company Yokohama for \$12. The material has proven to be resilient for long periods at high altitude, he says, even if the manufacturer never intended the balloon to be used

for that purpose. An alternative is Meadows' SBS, which makes a series of balloons designed specially for circumnavigational flights.

The pico-ballooning community is nervous about the negative attention by some members of Congress and the White House, who have called the objects shot down at altitudes of 20,000-40,000 ft. dangerous to civil aviation.

"We did assess that their altitudes were considerably lower than the Chinese high-altitude balloon and did pose a threat to civilian commercial air traffic," Kirby says. "And while we have no specific reason to suspect that they were conducting surveillance of any kind, we couldn't rule that out."

In fact, the pico balloons weigh less than 6 lb. and therefore are exempt from most FAA airspace restrictions, Meadows and Medlin said. Three countries—North Korea, Yemen and the UK—restrict transmissions from balloons in their airspace, so the community has integrated geofencing software into the tracking devices. The balloons still overfly the countries, but do not transmit their positions over their airspace.

The community is also nervous that their balloons could be shot down next. Medlin says one of his balloons—call sign W5KUB-112—is projected by HYSPLIT to enter U.S. airspace on Feb. 17. It already circumnavigated the globe several times, but its trajectory last carried the object over China before it will enter either Mexican or U.S. airspace.

"I hope," Medlin said, "that in the next few days when that happens we're not real trigger-happy and start shooting down everything."

Hold onto your satellites: The sun is about to get a lot stormier

Solar activity could increase as the sun reaches its maximum electromagnetic phase in 2025.

On Friday, February 17, a part of the sun erupted. A piercingly bright flash of light—a solar flare—shone briefly from the left limb of our star, where it was captured in an ultraviolet image by NASA's Solar Dynamics Observatory spacecraft. "It wasn't the largest in history by any means, but it was a significant X flare," Thomas Berger, a solar physicist and director of the Space Weather Technology, Research, and Education Center at the University of Colorado Boulder. (The "X" refers to the letter grading system of solar flare intensity, which ranges from minor A-class to severe X-class flares. "Solar flares of that magnitude will generally cause some radio-interference on the sunlit side of the Earth for an hour or two," he says. Ultimately, this one was fairly mild—the most powerful solar flare ever recorded, in 2003, was more than 100 times more powerful by comparison—and did not cause any major problems.

That rise in activity that could majorly impact planned space activities, such as the rapidly growing constellations of low-Earth orbit satellites. And a 2025 solar maximum would coincide with NASA's Artemis III, which aims to return humans to the surface of the moon—not the safest place to be during a solar radiation storm.

"It's going to be a really interesting time if we get an extreme storm in this solar cycle," Berger says.

What is the solar magnetic cycle?

The sun is a giant sphere of roiling, superheated plasma that is essentially electrically charged gas with monstrously powerful magnetic fields.

For reasons astronomers don't yet understand, the activity of these magnetic fields increases and decreases over an 11-year cycle. The cycle also includes changes in the dark areas on the star's surface, otherwise known as sunspots, with more spots appearing as the sun moves toward solar maximum.

“Sunspots are the source of solar magnetic eruptions,” Berger says. “The bigger the sunspot, the bigger the explosion. The more active the sun, the more sunspots, and the bigger the sunspots get.”

Will solar eruptions disrupt Earth in 2025?

Solar eruptions occur when the magnetic field lines in a sunspot get twisted and snap, Berger says, causing an explosion with three possible outcomes.

The first is a solar flare, like that seen on February 17, which is primarily a release of photons. The second is a coronal mass ejection, or a large release of plasma into interplanetary space. And the third is a radiation storm fueled by accelerating energy particles like protons, electrons, and ions. Coronal mass ejections can also sometimes generate a radiation storm by pushing charged particles in front of them as they speed through space.

The current solar cycle stands out so far in a big way: So far, it’s more active than forecast by groups like the the National Oceanic and Atmospheric Administration’s Space Weather Prediction Center, with more sunspots showing up on the sun than predicted. “We don’t know if it will continue to be more active than the forecast,” Berger says. “It’s fairly early on in the game here and could regress back to that weak forecast any month.”

Solar flares, if intense enough, can cause radio interference on the sunlit side of the Earth. Coronal mass ejections are the outbursts that really cause issues. The charged plasma can generate a geomagnetic storm when it hits our planet’s magnetosphere, resulting in awe-inspiring auroras at the poles, while also wreaking havoc on both power grid technology and satellite technology, Berger says. A big geomagnetic storm can heat the atmosphere so that it swells, dragging on low-flying satellites and even pulling some from orbit, as was the doomed case of 40 newly launched Starlink satellites on February 4, 2022.

Not every coronal mass ejection will reach Earth, however. Many, like the ejection associated with the February 17 eruption, fly off into space away from our planet. The question is whether any more will be aimed our way as we hurtle toward the solar maximum.

“Recent research is really beginning to confirm that almost every solar cycle has a really, really big eruption,” Berger says, “So it’s really just a matter of what direction in space it’s going.”

How do we plan for the sun’s unruly future?

Really powerful solar eruptions can lead to geomagnetic storms that damage electronics on the ground, such as the the storm in 1989 that knocked out some power grids. But the risks are higher today than in 1989, if just because there’s a lot more technology, and people, in space on a regular basis. For instance, there were more than 5,700 satellites in orbit at the end of 2022, while there were less than 500 satellites in 1989.

“If we do get an extreme geomagnetic storm now, there’s so much stuff up there that’s going to be moving all over the place,” Berger says. “We are concerned with an elevated risk of collision from the next one.”

**Next Club Meeting noon on Saturday,
March 11**

Pizza Fundraiser at Noon

**\$5.00 donation for 2 slices of pizza and a
drink!**