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Secretary - Dave Smith, WA2WAP Treasurer, Don Mayotte, KB2CDX
Board Members: David Jaegar, Jr., K2DEJ Russ Greenman, WB2LXC Steve VanSickle, WB2HPR

EGARA RUNS WINTER FIELD DAY

EGARA operated its first Winter Field Day on the weekend of January 28-29, drawing 14 club members and visitors. A total of 248 contacts were made using one HF station and one digital FT8 station operated by Dave Smith, WA2WAP.

Several members gathered on Friday to stage the club's gear and get the initial setup completed. At noon on Saturday, a G5RV dipole was erected and the HF station and logging computer were installed and checked out. Promptly at 2 pm, EGARA Treasurer Don Mayotte, KB2CDX, made the first Winter Field Day call as club President Bryan Jackson, W2RBJ, took on logging duty.

Winter field Day itself found the bands active and crowded as stations around the country began operating. Initial contacts were made on 20 and 40 meters, with the club's W2EGB station moving to 80 meters later in the day as propagation shifted with the grey line.

Throughout Saturday members swapped operating and logging duties. Contacts besides the U.S. included stations in Romania, Italy, Switzerland and the U.K.

"Overall, it was a very successful event and I don't think there's any doubt the club will participate in Winter Field Day again next year," said Jackson. "It was a great opportunity to once again work as a team and sharpen our communication skills."



Don Mayotte, KB2CDX and Bryan Jackson, W2RBJ, kick off Winter Field Day

-continued on page 2-

In This Issue

Page 1 - Winter FD Wrap / Feb Meeting
Page 3 - VOA Today
Page 5 - On the Beam News & Notes
Page 6 - Meeting Minutes
Page 7 - History of Ham Radio
Page 10 - Hamfest Sponsors
Page 11 - BBC Seen Ending Broadcasting
Page 12 - Build a Balun
Page 14 - Calendar / Classifieds / Pro Tip

February Meeting Topic: Capital District Traffic Net

Jock Elliott, KB2GOM, coordinator of the Capital District Commuter Assistance Network, will be the featured speaker at the club's February meeting.

The Commuter Net is a 20-year-old system that has worked to help keep traffic flowing smoothly in the region using Ham radio.

"When I started, I felt that if it were my wife or son out there, I would want there to be somebody to help," said Elliott. "I got involved as a participant in 1997, and one day, I found myself thrust into being net controller."

Jock will review the history of the Net and its current operations, as well as how club members can get involved with it.



Winter Field Day...

The event also drew two visitors who were interested in seeing the club's Winter Field operations. They included Mike Leidy, KD2FNW, and RPI Freshman Sophia Turnbow, who is planning on getting her Amateur license. In Mike's case, although licensed, he said he had not been actively operating for a while and wanted to return to the hobby. Club member's welcomed him and invited him to join them in operating.

Club activities ended Sunday morning, with Don Mayotte, Walt Synder and Jim and Gina Pendolino pitching in to put everything away and make sure the Masonic lodge was left in good order. Their efforts were especially appreciated!

The genesis for Winter Field Day began in June of 2006, when The Society for the Preservation of Amateur Radio (SPAR) agreed to sponsor the activity and the first one was held just four months later, on January 13-14, 2007. Based on comments from participants, Winter Field Day would soon become an annual event. In late 2015, SPAR Board Members handed over the reins and the responsibility for the event to the Winter Field Day Association (WFDA)

For many who have participated in WFD over the years, it is no longer just an event but an annual tradition. In 2022, the WFDA processed over 2,500 logs from stations around the world, and once again reigns of Winter Field Day were passed to a new board of directors. Though the association's leadership has changed over the years, at its core, the WFDA remains the same. We are a small group dedicated to the original purpose of Winter Field Day and its core principles.

- Natural disasters are unpredictable and can strike when you least expect them.
- Your training and operating skills should not be limited to fair-weather scenarios.
- Preparedness is the key to a professional and timely response during any event.

The foundation of the WFDA is that ham radio operators should practice portable emergency communications in winter environments as the potential for freezing temperatures, snow, ice, and other hazards present unique operational concerns. WFD is formatted to help increase your level of preparedness for disasters and improve your operational skills in subpar conditions.



Visitor Mike Leidy, KD2FNW, logs contacts being made by Steve VanSickle, WB2HPR, as Walt Synder, N2WJR, looks on.



- The Field Day Crew**
- Hisen Zheng, KD2TAI
 - Sophia Turnbow
 - Dave Gillette, KC2RPU
 - Walt Synder, N2WJR
 - Gina Pendolino, KC2QJC
 - Jim Pendolino, KC2HRO
 - Dave Smith, WA2WAP
 - Steve VanSickle, WB2HPR
 - Don Mayotte, KB2CDX
 - Bryan Jackson, W2RBJ
 - Bob Stanley, W2RBS
 - Nick field, KD2JCR
 - Tim Antonacci, WA2WDX
 - Mike Leidy, KD2FNW

Photos by: Dave Gillette, Steve VanSickle & Bryan Jackson

Where VOA's Broadcast Infrastructure Stands Today

Shortwave retains a role in serving particularly difficult-to-reach audiences

By James Careless

Russia's horrific invasion of Ukraine and its simultaneous blocking of Western media outlets has renewed public interest in shortwave radio broadcasters like the federally funded Voice of America.

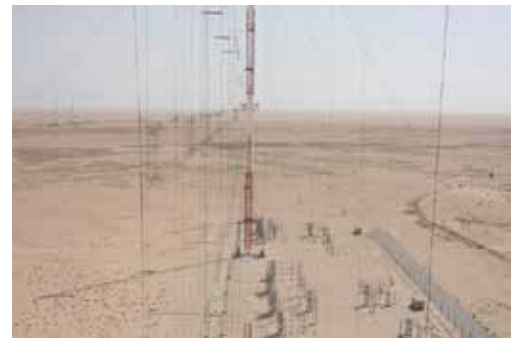
Now managed by the U.S. Agency for Global Media or USAGM, VOA's roots go back to 1941, when the U.S. government leased a dozen commercial broadcaster owned/operated shortwave radio transmitters for the VOA's predecessor, the U.S. Foreign Information Service. (These shortwave transmitters were previously used by U.S. broadcasters to share content between their AM radio stations.)

The VOA came into being in 1942. It played a major role in broadcasting U.S. news and views to the world during World War Two and the Cold War. After the fall of the Berlin Wall, shifting government priorities, the emergence of platforms competing with shortwave, and budget cuts led to VOA's language services, broadcasts and programming being reduced.

Today, "USAGM operates transmitting stations around the world, including in the U.S., Africa, Europe and Asia," Laurie Moy, USAGM's director of public affairs said in an email earlier this year.

"All of these stations are equipped with multiple shortwave transmitters, and four of these stations have a medium-wave (AM) transmitter each. In total, USAGM's network consists of about 75 shortwave (ranging from 100 to 250 kW) and medium-wave (ranging from 100 to 1000 kW) transmitters."

The agency also has access to shortwave and medium-wave transmitters via leases and exchange agreements with other broadcasters. At present, USAGM produces content in 63 languages, 35 of which are aired on shortwave and medium-wave. VOA itself produces content in 48 languages, 18 of which are aired on shortwave and medium-wave.



VOA shortwave infrastructure in Kuwait

"In terms of the agency's shortwave network, shortwave continues to reach particularly difficult-to-reach audiences, such as in North Korea, western China, Afghanistan and elsewhere," Moy told Radio World.

Shrinkage and growth

In its heyday, VOA had major U.S. shortwave transmitter/antenna sites at Greenville, N.C.; at Bethany, Ohio; and at Delano and Dixon, both in California. "The only VOA transmitter that exists in the U.S. today is Site B at Greenville, which was opened in 1963 by John F. Kennedy himself," said Dan Robinson, a retired VOA correspondent, language service chief and longtime shortwave enthusiast.

"Internationally," said Gerhard Straub, who retired last year as director of the USAGM's Broadcast Technologies Division, "there have been no significant reductions in the shortwave infrastructure. The last significant reduction was when the Sri Lanka transmitting station was closed after suffering significant storm damage. At that time, transmitters from Sri Lanka were moved to other transmission sites, notably the Greenville station, to modernize it a bit."

Moy agreed: "Other than closing the Sri Lanka station, USAGM has made no other significant changes to the network since 2017, except to maintain and repair equipment as needed. At our station in the Northern Mariana Islands, where a typhoon destroyed the transmission infrastructure in October 2018, USAGM has been repairing or replacing the damaged antenna arrays."

On the flip side, said Straub, "There is a major project underway to increase shortwave capability at the Kuwait transmitting station, in addition to a new antenna that was added a couple of years ago. This project is adding antennas and transmitters to provide additional coverage of Africa. USAGM also added Digital Radio Mondiale capability at the Greenville transmitting station to experiment with that mode in a project with the Office of Cuba Broadcasting."

VOA shortwave infrastructure in Kuwait

-continued on page 4-

VOA Today...

Reliance on other platforms

In recent years, VOA, Radio Free Europe/Radio Liberty and other U.S. government broadcasting services have increasingly relied on non-shortwave platforms to get their messages across to international listeners.

“A key goal for USAGM is to deliver programming to audiences on the platforms they prefer, despite the instabilities and evolution of media markets,” said Moy. “USAGM continues to see year-on-year growth of its radio audiences — USAGM’s weekly audiences on radio platforms in 2021 total 142 million people — and virtually all of this growth comes from local rebroadcasts and USAGM’s own FMs.

“While TV remains the most popular platform for USAGM audiences overall, audiences on digital platforms are the fastest growing and now surpass radio audiences,” she continued. “Digital platforms include not only websites and social media, but also on-demand video apps, podcasts, streaming services and more.”

Dan Robinson has written critically about VOA’s audience methodology and expressed skepticism about these audience numbers. “You’ll see situations where VOA signs a rebroadcast agreement with some TV or radio station in, let’s say, Northern Nigeria, and then instantly tack on that broadcaster’s own audience claims to VOA’s global reach numbers,” he said. “But this does not mean that VOA is actually reaching that entire audience.” But Moy pushed back on that.

“Mr. Robinson’s research-based assertions are incorrect. We do not count an affiliate’s total audience as our own. We conduct our own nationally representative surveys, adhering to standards developed by the Conference of International Broadcasters’ Audience Research Service. In these surveys we ask about the reach of our brands — for example VOA — and the reach of specific programs with clear brand names, such as Africa 54. Once someone says they consume our brand or our program, then we ask where they consume it, including questions about whether they’re watching/listening on a named partner station.”

Local AM/FM/TV rebroadcasts and websites can be vulnerable to hostile regimes shutting them down. But VOA does not intend to follow the BBC World Service’s lead and reintroduce shortwave broadcasts to this region.

“Our research indicates there are few shortwave sets in use in that part of the world, so it’s not in our current plan to add shortwave broadcasts,” said Bridget Ann Serchak, VOA’s director of public relations earlier this year. “However, we have begun a satellite TV channel to provide additional content for audiences in Ukraine and are exploring other methods of transmission.”

-continued on page 11-

Need to Join ARRL? Do It Through EGARA!



Joining ARRL through EGARA helps both you and the club! New ARRL memberships processed through the club gives it the opportunity to retain \$15 of your dues -- with no increase in your \$49 membership fee!

Renewing your ARRL membership through the club also helps, by allowing the club to keep \$2 of your annual dues.

Whether you’re looking to become a new ARRL member or renewing your existing membership, see EGARA President Bryan Jackson, W2RBJ to complete your application.

On the Beam

News & Notes

FEMA Report Predicts Increase in Emergency Challenges

FEMA released the 2022 National Preparedness Report, revealing the impacts that climate change and associated natural disasters continue to have on emergency management capabilities and communities across the country. The findings reinforce the need for reliable communications during emergencies, and support the need for programs such as the Amateur Radio Emergency Services program (ARES).



The report focuses on:

- The nation's changing risk environment, driven by climate change, physical and technological vulnerabilities, and inequity;
- Preparedness indicators and measurements of national capability levels; and
- Management opportunities that can assist communities in managing risks and addressing capability gaps.

The report identifies the challenges that emergency managers face in addressing a changing risk environment, and how they can meet those challenges to help achieve a more prepared nation. Emergency managers and whole community partners across the nation can look to this year's report to help support decisions about program priorities, resource allocations, and community actions.

The report is available online at: https://www.fema.gov/sites/default/files/documents/fema_2022-npr.pdf

VE Exam Session Set for March 4th

EGARA will hold its next FCC license test session on Saturday, March 4th at the East Greenbush Community Library. The session will begin promptly at 11:15 a.m. and all exams for all license classes -- Technician, General and Amateur Extra -- will be given.

Test applicants **MUST** have an FCC Registration Number **BEFORE** taking their test. It is available at no charge by visiting: <https://www.fcc.gov/new-users-guide-getting-started-universal-licensing-system-uls>.

The test fee is \$15 and applicants must also bring a valid ID. Amateur license holders who are looking to upgrade must also bring a copy of their current license in order to get credit for successful completion of previous exam elements.

Complete exam information and requirements can be found on the EGARA website at:

www.EGARA.club/ve-exams-sessions

EGARA January Meeting Minutes

- The JANUARY meeting of the EGARA was called to order at 6:55. There were 22 members in attendance
- President Bryan Jackson, brought meeting to order
- Pizza and beverages were offered
- A raffle was offered and membership dues were collected. Thank you everyone who bought tickets and paid 2023 dues.
- Inside maintenance of the Masonic Lodge is ongoing and members who are available to help are urged to do so.
- Items for sale, purchase or trade in Sidebands, the club newsletter, should be submitted to Bryan Jackson.
- Steve VanSickle, WB2HPR, gave an update on the restoration of the CCA 1000-D transmitter we received from the old WABY building.
- Winter Field Day was discussed and members were asked to sign up to help set up and operate.
- Dave Smith did a Demo of a 2 meter tape measure yagi antenna.
- New member Patrick Negus was welcomed.
- The meeting was adjourned at 7:45 PM
- Submitted by Dave Smith, WA2WAP - Secretary

Annual
Membership
Dues



PAID

It's a new year and it's time to show your support for your club!

Dues remain at just \$15 for individuals and \$25 for families.

Pay your dues during any club meeting or online through the club's website at www.EGARA.club.

If you've already paid... thank you!

The History of Ham Radio: Relaying in the DX Age

Chris Codella, W2PA, author, John Pelham, W1JA, editor, Phil Johnson, W2SQ, editor

(Editor's note: By special arrangement with the authors, Sidebands is pleased to present this multi-part series on the history of ham radio. Subsequent chapters will be published in future monthly editions of the newsletter)

In spring 1926, Fred Schnell resigned as ARRL communications manager after six years in the job, which included holding its former title, traffic manager. He was leaving to join the C. F. Burgess Laboratories in Madison, Wisconsin, well known for its batteries and other radio apparatus.

Citing the "faithful, efficient and progressive manner" in which Schnell worked as a League official, the ARRL Board extended its appreciation and best wishes for his future endeavors.

F. E. (Ed) Handy, who had filled in temporarily during Schnell's Navy stint, now took over the position permanently. When Schnell left Hartford and the first district, his rather well known call sign, 1MO, became available. In what was likely an inside arrangement, the call was quickly assigned to Handy's (formerly Schnell's) secretary, the newly licensed Dorothy Menk, a worthy recipient. Meanwhile out in Wisconsin, Schnell became 9UZ. A year and a half later, Don Mix, 1TS, operator of the first WNP expedition, joined him at Burgess.



November 1926 QST cover illustration

The Communications Department had grown significantly in scope beyond the League's foundation in relaying messages and now concerned itself with all on-air activities. The two most popular activities, DX hunting and traffic handling, served to promote investigation of the new shortwave bands.

Warner noted that, although the pursuit of DX had become all the rage, it should not subsume other amateur activities such as casual contacts. Friendly on-air relationships were what built up the spirit of amateur radio, something he thought was now "precious near gone." He called on amateurs to "be more human; learn to talk; use your station as an instrument for the cultivation of friendships; give heed to the spirit of Amateur Radio and learn that there is something in the game far more precious than the eternal hollering for QSL cards."

The old trunk line system for handling traffic had died back around 1919 with the war shutdown, the rise of CW and longer-distance contacts. Instead, the system became a net where everyone could work everyone else directly, or a free net, where the practice was to pass a message to the furthest station contacted in the desired direction. With the opening of the shortwaves, everyone spread out into the new allocations. The number and distance of workable stations increased, and it became more difficult to find another station for handling messages.

In 1925, 6PS suggested an effective solution to the problem: a five-point plan, in which each station arranges skeds with four others in each of the four compass directions, chosen for reliability but at some significant distance. The scheme ensured that there would always be someone to pass messages to and, depending on the frequency of skeds, a message would never wait long to get passed on.

Rather than a nationally coordinated system of relaying, message handling had thus become more of an everyday practice with simple contact rules in which a subset of hams took part. Nationwide connections and flows of messages emerged from the activities of individual amateurs.

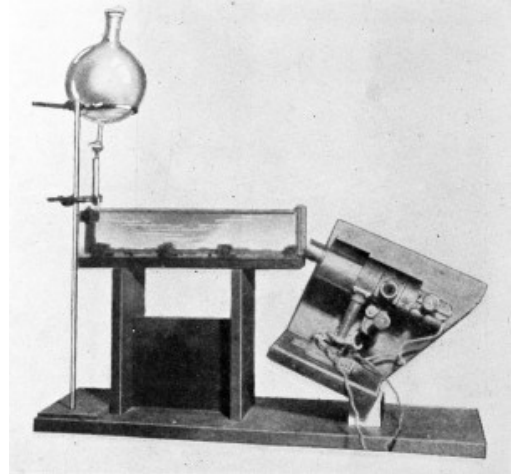
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History of Amateur Radio...

The 200-Meter DX Doldrums, Explained (at Last)

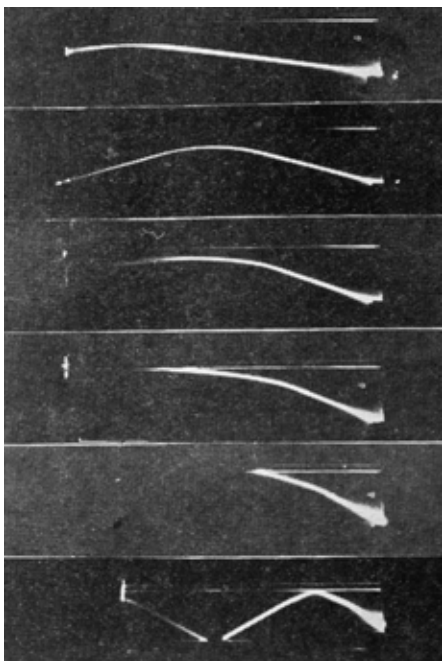
Building upon a few years of amateur shortwave experience and a new understanding of atmospheric phenomena in the scientific community, Chester W. Rice of GE Research combined theory and experiment to present the first comprehensive explanation of sky-wave propagation in a two-part article in QST.

Rice explained how ionization in the Earth's atmospheric layers occurred and changed with time of day and season. He then derived how such layers could bend electromagnetic waves back toward the surface by showing, in painstaking mathematical detail, how the velocity of waves is affected by electron concentration in the high atmosphere. This model described skip distance as a function of radiation angle and frequency, predicted minimum and maximum ranges, explained why signal fading occurs and suggested how to avoid it, and advised which wavelengths to use for any chosen distance for a given time of day and season. The only variable he neglected to account for in his technical tour de force was the solar cycle. He went so far as to construct a vivid, visual demonstration of wave bending using fluorescent liquids of different densities. This setup could render a light beam visible as it traced various paths that changed depending on angle. Rice's contraption could even simulate multiple reflections between earth and sky!



Rice's optical reflection apparatus

But as amazing as Rice's exposition was in all its many details, one bit of analysis stood out from the rest because it explained the long-lived conventional wisdom that longer waves carried further. His model showed that at wavelengths greater than 214 meters, range did indeed increase with longer wavelength. But it also showed that at wavelengths shorter than 214 meters, it increased again because of enhanced sky-wave propagation—something unseen all those years ago because no one anticipated that the observed trend would reverse itself. Rice's model predicted that 200 meters was very close to being the minimum range wavelength!



**Photos from Rice's simulator
in operation**

ARRL secretary Kenneth Warner caught this gem and highlighted it in his editorial the following month, writing, "Here is the whole story of radio in one chart," referring to Rice's graph showing a range minimum at 214 meters. He then added, "It is pointed out that the world's worst wavelengths for DX in term of miles per watt are those waves just above 200 meters where we amateurs so long congregated. We've often heard that when amateurs were first given 200 meters it was regarded as a useless wavelength, but even the people responsible for the assignment could hardly have known that of all the wavelengths in the spectrum it was the worst..."

Since Marconi, all the work at 200 meters and above had merely hinted at atmospheric refraction of radio waves—a way of explaining fading effects and other freaks, as they were called. Conventional wisdom held, and observations supported, the assertion that such effects disappeared entirely at that wavelength. No one saw through the 200-meter wall. Not only did the effect not disappear, it got stronger. Ironically, a complete understanding of the sky wave phenomena would not and could not emerge until experimenters ventured down below 200.

In the spring of 1927 Ed Handy wrote at length about the virtues of the still-underused 20 meter band. Sounding a little like an infomercial pitch man from the future he asked,

-continued on page 9-

History of Amateur Radio...

“Are you looking for a new and thrilling experience with your outfit—something a little bit different? In trouble with QRN? Well that’s not unavoidable you know. Even though no one has yet devised a simple and wholly successful static eliminator, there are ways around the difficulty. If you are tired of the increasing QRN in evenings, if you are one of those who complain bitterly about 40-meter QRM and the DX-hounds who inhabit the 40-meter region, it is earnestly suggested that you try a new and higher frequency band.”

Operators were standing by.

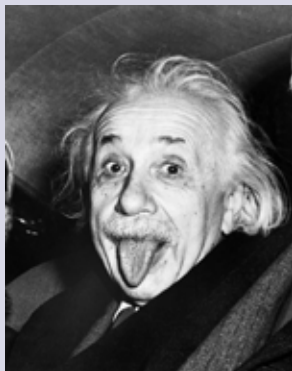
Conventional wisdom held that 20 meters was only useable in the daytime. With the solar maximum drawing ever closer, the time was just right for exploring the higher bands. The 20 meter band was 2,000 kHz wide, from 14,000 to 16,000 kHz. Handy called for amateurs to keep accurate logs and send reports to HQ so that everyone could learn about signal behavior on 20, day and night.

Warner also did not believe amateurs were making enough use of 20 meters. But it was not all that surprising since it simply continued the historical propensity of hams to initially resist moving lower in wavelength. A few years earlier amateurs hardly ventured below 200 meters even though, at one early point, they could have operated anywhere they wished down there. Later, when the new allocations arrived, they needed prodding once again to try out 80 and then 40 meters. Now those bands were congested and the wide-open space at 20 meters was hardly being used. Anticipating a commercial play to grab more shortwave spectrum, it was time for hams to make use of what they had been given, lest it be lost.

Whether it was QST’s reach or simply on-air word of key, the activity on 20 increased substantially in only one month. Members responded beyond expectations to Handy’s and Warner’s calls for reports and activity. In fact, later that summer 5ACL wrote to complain that the QST publicity about great conditions on 20 were ruining it! When everybody comes down it would be as crowded as 40 is now, he predicted, pleading:

“Let nature take its course. The bright boys will QSY quickly enough and the rabble will be blissfully unconscious as usual. Come on and let’s keep one secret at least. What sa?” Then, as a postscript he admitted, “Stu late now OMs. Let’s all go to 5 meters.”

Quote of the Day



“I am often asked how radio works. Well, you see, wire telegraphy is like a very long cat. You yank his tail in New York and he meows in Los Angeles. Do you understand this?

Now, radio is exactly the same. Except that there is no cat.”

--Albert Einstein

*Time to Upgrade Your Shack?
Get It From a EGARA Hamfest Sponsor!*



VOA Today...

No major shortwave revival

One thing seems certain: A global rebuild/expansion of VOA's shortwave infrastructure is not in the cards.

"In some areas shortwave is not considered as important as it used to be, mainly due to the proliferation of other media platforms such as internet and satellite-based systems and the media consumption habits of the target demographic in those areas," Straub said.

"However, in other geographical areas such as Africa, shortwave continues to be very important, as evidenced by the addition of USAGM shortwave capability to this area."

This is a position that makes sense to Dan Robinson, much as he wishes it didn't.

"There's a difference between what I would like to see as someone who was always interested in shortwave and saw the impact that it used to have, and what I think makes sense today," he said. "At the same time, much of the shrinkage has been driven by VOA, BBC and other broadcasters pulling back from shortwave and their listenership falling as a result, not vice versa."

Acting Chief of Staff Gary Butterworth noted that VOA's second-newest language, Rohingya, launched in July 2019 exclusively on shortwave and medium-wave.

"It's certainly true that the world seems to be moving on from these bands, but they're not entirely dead yet, and we certainly haven't forgotten about them," he told Radio World.

What remains to be seen is how the apparent drop of a new "Iron Curtain" across parts of Eastern Europe affects the West's ability to reach listeners there. Even today, shortwave's advocates say that SW remains the cheapest, easiest to conceal and hardest to block option for listeners in Ukraine, Russia and other countries of interest to Vladimir Putin.



VOA's former Bethany Station in Ohio is now home to the National Voice of America Museum of Broadcasting,

Davie: BBC Plans for Future Without Broadcasting

BBC Director-General Tim Davie looks toward an IP-only future for storied broadcaster

What happens if the British Broadcasting Corporation stops broadcasting? According to BBC Director-General Tim Davie that question isn't rhetorical, and instead points toward the future of one of the world's most storied broadcasters which served both domestic and shortwave listeners.

"For the BBC, internet-only distribution is an opportunity to connect more deeply with our audiences and to provide them with better services and choice than broadcast allows. It provides a significant editorial opportunities. A switch off of broadcast will and should happen over time, and we should be active in planning for it," Davie said.

Davie's recent speech before the Royal Television Society came 100 years and 23 days after the BBC's first broadcast, but it focused on the challenges and opportunities the broadcaster faces today. Since the UK's January 2022 freeze of the TV license fee that has traditionally funded the bulk of BBC operations, Davie has made several moves to consolidate operations to put a greater emphasis on online distribution. He noted that today's listeners and viewers are awash with choices from traditional broadcast outlets and a range of new streaming services, Davie said a change to the BBC's traditional model is necessary.

He closed his speech with a call for swift action to ensure an agile regulatory environment that can adapt to change while also guaranteeing that public-service broadcasters have access to new media platforms and technologies.

Build an All Band HF Air Core 1:1 Choke Balun

THE "UGLY BALUN"

By Rick Measures, AG6K

A balun's purpose is to allow connecting a balanced, (e.g., a dipole or driven element) to an unbalanced line such as coax which is not balanced -- thus the name, Balun. The 1:1 choke "balun" is not actually a balun. It's function is to help eliminate rf currents from flowing on the outside of coaxial cable using the principle of choke action. It's also called an "air choke."

In transmitting antennas, this is accomplished by presenting a high impedance (resistance), to RF currents flowing outside the coax shield. This forces currents in each side of a driven elements to be equal. This is especially important in beam antennas because it prevents distortion of the beam's pattern caused by unequal currents in the driver(s). In a simple dipole, the balun (choke), assures that the dipole, and not the feed line, is doing the radiating!



When you connect center fed antennas, like dipoles, V's, triangles, yagis, rhombics, loops and so on, to coaxial cable, unless care is taken, it is not difficult to end up with feeder radiation. Not only can the loss in power be quite significant, but the radiation characteristics of the antenna system will also be seriously compromised.

In laymen's terms, it won't be what you are expecting from the pattern of your antenna.

As the feedline becomes part of the antenna, currents can flow from the line into the mains and on TV cables, metal masts and yagi booms, causing a variety of EMI problems that can be very difficult to trace. Frequently these problems are simply due to unbalance - and the solution is the humble air choke.

If an antenna system is fed at center with a parallel conductor line (provided that correct installation procedures are followed) balance will be maintained, using a balun, with currents in equal and opposite phase canceling each other out.

When the connection is to a coaxial cable, without a balun, this cannot occur because currents flowing inside the cable from the connection to the inner conductor are separated from those flowing on the outside from the connection to the shield, and the result is unbalance causing feeder radiation. However, if the two electrical circuit elements (antenna and coaxial cable) are coupled using a balun, balance will be maintained.

Enter.....The Ugly Balun!..

"No costly ferrite-cores are needed, just a short length of 3 to 5 inch size plastic pipe, about 25 feet of 50ohm coax plus some nylon cable ties.

Solid-dielectric coax is best for this application because foam-dielectric has a tendency to allow a change in the conductor to conductor spacing over a period of time if it is bent into a tight circle. This can eventually result in voltage breakdown of the internal insulation.

-continued on page 13-

Build a Choke Balun for Your Shack...

The required length of the plastic pipe depends on the diameter and length of the coax used and the diameter of the pipe. For RG-213/U coax, about one foot of 5 inch size pipe is needed for a 1.8MHz to 30MHz balun. For 3.5MHz to 30MHz coverage, about 18 to 21 feet of coax is needed. This length of coax is also adequate for most applications on 1.8MHz, as 18 to 21 feet should cover all of 160 through 10 meters.

The number of turns is not critical because the inductance depends more on the length of the wire (coax) than on the number of turns, which will vary depending on the diameter of the plastic pipe that is used.

The coax is single-layer close-wound on the plastic pipe.

The first and last turns of the coax are secured to the plastic pipe with nylon cable ties passed through small holes drilled in the plastic pipe.

The coil winding must not be placed against a conductor.

The name of this simple but effective device is a choke balun.

NOTE: Some people build choke-baluns, without a plastic coil-form, by scramble-winding the coax into a coil and taping it together. The problem with scramble-winding is that the first and last turns of the coax may touch each other. This creates two complications. The distributed-capacitance of the balun is increased and the RF-lossy vinyl jacket of the coax is subjected to a high RF-voltage. The single-layer winding on the plastic coil-form construction method solves these problems since it divides the RF-voltage and capacitance evenly across each turn of the balun".

Balun Choke Variations



Choke Baluns can take many forms, as shown above.

For more information on styles and types you can easily build for your shack, visit:

<https://www.hamuniverse.com/balun.html>

CALENDAR

February 8, 2023 - 7 pm - Monthly Club Meeting, East Greenbush Masonic Lodge, Topic: Capital District Traffic Net

March 4, 2023 - 11:15 am - VE FCC License Test Session, East Greenbush Community Library - Contact: W2RBJ@Outlook.com

March 8, 2023 - 7 pm - Monthly Club Meeting, East Greenbush Masonic Lodge.

Pro Tip: A UTC Conversion Chart

Need a way to quickly convert Universal Coordinated Time (UTC) to your local time?

Here's a chart you can clip and place in your shack for easy reference!

It includes conversion for both Eastern Standard Time (EST), as well as Eastern Daylight Time (EDT).

EST	EDT	UTC
7 p.m.	8 p.m.	00:00
8 p.m.	9 p.m.	01:00
9 p.m.	10 p.m.	02:00
10 p.m.	11 p.m.	03:00
11 p.m.	Midnight	04:00
Midnight	1 a.m.	05:00
1 a.m.	2 a.m.	06:00
2 a.m.	3 a.m.	07:00
3 a.m.	4 a.m.	08:00
4 a.m.	5 a.m.	09:00
5 a.m.	6 a.m.	10:00
6 a.m.	7 a.m.	11:00
7 a.m.	8 a.m.	12:00
8 a.m.	9 a.m.	13:00
9 a.m.	10 a.m.	14:00
10 a.m.	11 a.m.	15:00
11 a.m.	Noon	16:00
Noon	1 p.m.	17:00
1 p.m.	2 p.m.	18:00
2 p.m.	3 p.m.	19:00
3 p.m.	4 p.m.	20:00
4 p.m.	5 p.m.	21:00
5 p.m.	6 p.m.	22:00
6 p.m.	7 p.m.	23:00



For Sale...

- MFJ - 941D versa tuner (2 available) \$25 each
- Voltmeter kit \$5
Contact Don, KB2CDX at: ddm653@gmail.com

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- KENWOOD TS 520, \$225.
Contact Tom, KC2FCP at kc2fcp@nycap.rr.com

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- MFJ-9575, 10 watt 75 meter LSB transceiver
 - Dx Engineering, 200 watt 75 meter bandpass filter
 - TEN-TEC 1209, 2 meter to 6 meter transverter
 - TEN-TEC 1210 10 meter to 6 meter transverter
- Make offers for any above
Contact: John Hackert, WA2JAE (518) 381-4847, Email: Wa2jae@Arrl.net or John.hackert@Reagan.com

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- Ameritron AL811H runs 572Bs and many upgrades including grounded grids and arc protection New filter caps. \$800 or will consider equal trade.
Contact Justin, KG2RG at 518 542-1342 or email: kg2rg@hotmail.com

Sell your unused gear with a free ad in Sidebands!
Send details to:
W2RBJ@Outlook.com

The East Greenbush Amateur Radio Association

Organized in 1998, by Bert Bruins, N2FPJ, (SK) and Chris Linck, N2NEH, the East Greenbush Amateur Radio Association, an ARRL affiliate, is committed to providing emergency services, educational programs, and operating resources to amateur radio operators and residents of the Capital Region of New York State. The club station is W2EGB. The club also has several VHF and UHF repeaters open to club members and the public.