Sidebands

The Newsletter of the EAST GREENBUSH AMATEUR RADIO ASSOCIATION

W2EGB

www.egara.org

September 2026

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A Busy Summer for EGARA

Although there are no club meetings during July and August, members found themselves busy working on a number of projects over the Summer. They included equipment maintenance, care of repeater sites, organizing Hamfest supplies and installation and upgrades to the club's new UHF repeater.

The new UHF repeater was installed in late June at the Helderberg Mountain tower site owned by WTEN. The long-planned project literally got off the ground when Bob Isby, K2RHI, secured a high-gain, commercial grade 8-bay antenna for the club. Bob, who owns Algonquin Communications, braved winds of up to 40 miles an hour to mount the antenna 110 feet above the ground and adjacent to the club's VHF antenna which is used for its repeater on 147.270 mHz. In addition, he re-tuned the UHF duplexer to 444.850 mHz after it was determined there was interference on the original UHF frequency that had been selected.



Bob Isby and Barry Leet prepare the UHF antenna for installation.

To further enhance the performance of the UHF repeater, Bob donated a 100 watt linear amplifier that allowed the power to be boosted beyond the stock 50 watt output of the Yaesu DR-2X repeater. And, to ensure a clean signal, he added a "circulator" to the system to trap harmonics being caused by nearby FM broadcast transmitters.

Assisting with the UHF project were Barry Leet of Capital Digitronics, and club members Don Mayotte, KB2CDX, Steve VanSickle, WB2HPR, Walt Snyder, N2WJR, Bryan Jackson, W2RBJ, and Chris D'Allaird, AK2CD.

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Sidebands Wins National ARRL Award

The club's "*Sidebands*"newsletter has been voted among the top three in the nation by the American Radio Relay League in the medium-size club category.

"The judges felt the newsletter had a good mix of club, ARRL, and general ham radio information on a variety of topics in a variety of formats – feature articles, news, tips, classified ads. There is also excellent, engaging follow-through on ongoing matters and projects," said Becky Schoenfeld, W1BXY ARRL's Director of Publications and Editorial.

The award was announced at ARRL's event in Huntsville and a plaque is set be presented to the club at its September meeting.

Membership Meeting - September 10, 2026 - Program: ARRL Update

A Busy Summer for EGARA...

Other projects handled by club members included maintenance of the repeater site, including mowing the lawn, trimming weeds and brush, cleaning the building, and repair and upgrades to equipment.



Newest club member Eric Ensign, KE2ICO, gets the riding mower tuned up

The club's newest member, Eric Ensign, KE2ICO, used his mechanical skills to repair the club's riding mower which is used to keep the yard at the repeater building in good shape. His work included cleaning and adjusting the mower's carburetor, repairing the fuel line and replacing the belt and blades on the mower deck. The club also purchased new front tires for the machine to replace the two which were well worn.

Other work at the repeater site included cleaning the building, replacing burned out lights, and installing a battery backup system on both the UHF repeater, its linear amplifier, and the building's security cameras. In the event of an electric outage, the system will switch over and provide power using a pair of 100 amp hour maintenance-free Lifepo4 lithium iron phosphate batteries. A smart charger is used to keep the batteries at peak performance.



Bob Isby rigs the UHF antennas at the 110 foot level while wrestling with 40 MPH winds



Chris D'Alliard, AK2CD, checks the 444.700 repeater

In August, club members also visited the 444.700 mHz repeater, which is also located on the Helderberg Mountains. The machine, was cleaned and checked for proper performance. The repeater's Trustee is former club president Tom Scorsone, KC2FCP, who also is the Trustee of the 145.110 mHz repeater located at Hudson Valley Community College.

In addition, club members handled projects at the Rensselaer County Search and Rescue Building, where club meetings are held and equipment is stored. These included work parties to clean the building and to organize Hamfest supplies in preparation for next year's event.



Dave Smith. WA2WAP, cleans the kitchen at the repeater site.



Don Mayotte, KB2CDX and Pete Brickman, KD2YLG, clean at the Rensselaer County S&R Building.

With Summer now quickly fading, EGARA will return to its schedule of regular monthly meetings on the second Thursday of each month.

On tap for the September 10th meeting will be the presentation of the ARRL award given for the club's *Sidebands* newsletter, an update on ARRL activities by Dave Galletly, KM2O, and a review of club business during the past two months.



Walt Snyder, N2WJR, in his usual supervisory pose

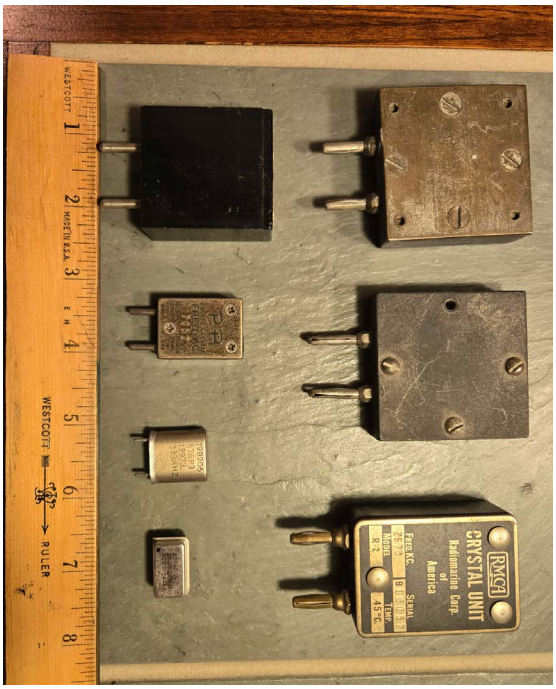
Crystal Control? – What's THAT????

By Steve VanSickle, WB2HPR

Last week, during a discussion of vintage boat anchor radios, a discourse arose on the 1960's technology used to keep an amateur novice transmitter within its assigned frequency allocation. At the time, FCC rules for novices forbid the use of a VFO (Variable Frequency Oscillator), and mandated the use of a piezoelectric crystal to control a transmitters frequency.

If you're not familiar with the term "piezo-electric", the name refers to a unique property of Quartz: the application of an electric field that produces mechanical movement. This causes an electric disturbance at a specific frequency, which again creates a corresponding mechanical movement. This phenomenon continues until internal losses cause it to cease – unless the device receives another electric pulse which causes a continuous oscillation at a particular frequency. This highly-stable electrical property is used in a low-level oscillator, which, when amplified, can be can be used for transmitter frequency control. The resulting RF signal is very stable in frequency, within the limits of the crystal properties, over a wide range of temperature and outside mechanical shock.

As a novice ham radio operator, to change frequency, it was necessary to change the physical crystal – and they were usually supplied in a protective holder -- commonly known as the venerable FT-243. This simply plugged into the crystal socket of the novice CW transmitter. After the end of WW-2, many such crystals became available on the surplus market, and found their way into amateur service – at prices that were but a fraction of prevailing market prices for new ones.



Examples Of Crystals Used In Rf Communications

Top row: Early examples of home built holders (ca: 1935); Large holder made for merchant marine service (ca. 1950)

Bottom row: WW-2 military surplus, FT-243 amateur band crystal (1960's) metal case hermetically sealed unit for land-mobile radio service (1970's), late model hermetically cased temperature compensated precision crystal oscillator.

When operating a novice station, the operator had to call "CQ" on the crystal frequency – (example: 7155 kHz) then tune their receiver up and down the 40 meter band to listen for a reply. Hearing no reply, the process was repeated until another station was heard sending your call sign – (ah, sweet success!). Sometimes, it was necessary to use a crystal on another frequency if the first frequency was in use. Every CW contact thus made was using this "cat and mouse" procedure. Believe it or not, this seemingly crude and time consuming process worked quite well – many, many contacts with all states (WAS) could be achieved, as well as world-wide DX. This system served to train new hams in the art of listening, for if you couldn't hear 'em, you couldn't work 'em!

Even today, crystals still play a vital role in RF communications. Although not mandated for novice operation any longer, they are the basis for all RF signal generation in our current state-of-the-art equipment – as well as cell phones, broadcast, satellite equipment, automotive, computers – even the watch on your wrist. Sadly, most of the crystal manufacturers are long gone, due to inexpensive imports and sub miniaturization and the use of synthesized oscillators (VFOs) like we commonly use nowadays.

So the next time you use your rig, remember: somewhere inside there's a tiny piece of quartz vibrating at a precise frequency – keeping time – ensuring that your rig is precisely tuned to the VFO display. The pictures to illustrate how the physical crystal has evolved – from hand-assembled and ground during the 1920's to present day.

'til later – 73!

When All Else Fails Could Amateur Radio Be In Line for the Ultimate Test?

America's Power Grid May Be More Vulnerable than We Think

A recent article in the New York Times outlined a chilling scenario. According to experts, terrorists would only have to disable a few critical electric substations across America to plunge the entire country into darkness -- and chaos.



The basis for the analysis came from an incident that occurred in 2013 when vandals severed communication and control links to a Pacific Gas and Electric substation about 15 miles southeast of San Jose. They then used high-powered rifles to shoot holes in the station's transformers, allowing oil used to keep them cool to leak out. Within a few minutes, the transformers failed, taking electric service with them.

The Federal Energy Regulatory Commission (FERC) conducted a power flow analysis. It modeled the cascading effects of knocking out the most critical substations in each of the nation's interconnections -- those where multiple high-voltage lines come together.

"We came up with some very astounding numbers," said Jon Wellinghoff, who was then the chairman of FERC. "If you knock out nine total substations among those three grids, you can black out the entire United States."

According to Wellinghoff, which nine substations were taken offline didn't matter as long as each one was among the 10 most important in its region, and you could black out the three interconnections individually as well.

"I mean, it's not like there are particular substations. You just have to figure out what are the top 10 critical ones in each of those interconnects. Which, to do that, it's probably something that a bunch of 12-year-olds with the Internet could do pretty easily. All you have to do is look at a map of the grid and figure out where most of the wires go into the substations — that's a critical substation."

Perhaps equally disturbing is that much of the existing grid is powered by aging equipment that is technically near the end of its rated life span. Transformers are the linchpin of today's grid and it can take up to five years to build just one. Since 2021, the average wait time for a large power transformer — the kind you'd find at a major substation, capable of handling tens or hundreds of thousands of volts — has climbed from less than a year to as long as five years. The situation was only made worse when the pandemic hit, disrupting supply chains. The war in Ukraine strained manufacturers even further with one of Siemens Energy's vendors being bombed on the third day of the war.

At the same time, overall demand for electricity has begun to increase for the first time in 20 years. Because of improvements in energy efficiency -- in everything from appliances to to lighting -- the power system was able to handle the demand without needing new sources of power. That has now changed, especially because of emergence of data centers which claim as much power as a small city. Some might consider a potential attack fear mongering, but there is evidence that foreign actors have been probing for vulnerabilities in our infrastructure. And they know that imploding the American economy is more effective than guns and bombs. Taking down the power grid would be a key strategy to that end.

Without power our modern society stops -- including the nation's communications systems. Even if a terrorist attack on the grid was limited to one region, it could take weeks or even months to repair the damage and restore electric service.

So, as an Amateur Radio operator how well are you prepared? How good are your skills? How well could you respond if you were needed to handle emergency communications?

The entire point is that Amateur Radio may actually be called upon to prove its mantra that "*When All Else Fails, There's Amateur Radio*".

On the Beam
News & Notes

Donations Help Support EGARA

Membership dues are an important part of the EGARA's financial wellbeing, but donations by members and others really make the difference. Over the past year, the club has been fortunate to have received cash, goods and services worth several thousand dollars.



The largest donations have come in the form of equipment and services provided by Bob Isby, K2RHI, who owns Algonquin Communications. His company installed both the club's VHF and UHF repeater antennas and coax on the former WTEN television tower. He also donated the UHF antenna and linear amplifier for the system, as well as a circulator designed to ensure the repeater produces a clean signal. He also acquired the club's VHF repeater for the club at no cost.

Of course, the club's various repeaters would not be in service if it wasn't for the gracious donation of space for the equipment and antennas. These include Nexstar, which has donated space at the site of WTEN-TV's former analog transmitting site, and Hudson Valley Community College, which hosts space for the club's 145.110 two meter and its 224.800 1.25 meter repeaters.

Steve VanSickle, WB2HPR, has also provided the club with notable support. This includes donations of high quality coax cable and both the VHF and UHF duplexers needed for the club's repeater systems. In addition, Steve has stepped up to offer repairs of club equipment.

Dave Smith, WA2WAP, Don Mayotte, KB2CDX, and John Maddella, WB2HZT, have all donated computers to the club as it prepares to move its FCC testing session and to restore EchoLink service to its repeater system. Don has also given the club a vacuum cleaner and an antenna tripod.

Club member Santos Rodriguez Andres, NK2R, donated a classic all-band receiver to the club for its use or sale. And Coldwell Banker Realtor Alan Bynum arrange for the club to receive thousands of dollars in Amateur Radio gear and other equipment from an estate he was handling.

EGARA is also grateful for the support and donations provided by Joe Ostering, N2CJF, who owns Riverview Print and Stitch. For the past several years, he has designed and printed custom T-Shirts for the club's annual Hamfest at no charge, allowing the club to present a professional look at the annual event. In addition, several members have made anonymous cash donations to the club to help support its expenses and activities.

The club has also enjoyed the support of many businesses. These include the many sponsors of EGARA's annual Hamfest, all of which are listed on the club's website homepage and on page 9 of this newsletter. And, Earl Feiden Appliances was kind enough to donate a brand new refrigerator for use at Rensselaer County Research and Rescue (RCSAR), where the club holds its membership meetings and events.

Finally, EGARA is grateful to RCSAR for its generous donation of space at its building. Since relocating to its building, the two organizations have formed a strong partnership of mutual benefit.

Since gaining its official status as an IRS-approved 501c3 non-profit educational organization, EGARA has also been able to offer charitable tax deductions for donations it receives.

EGARA June Meeting Minutes

- The meeting was The meeting was called to order at 7:00 PM and introductions were made by all members (16) and guests (1) present.

- President's Report:
- President, Bryan Jackson W2RBJ, announced that six (6) new members joined the club at the Hamfest:
- Eric Ensign, KE2ICO of Latham, John Brown, KE2GHH of West Coxsackie, George Bowen, W2XBS,
- John Batchelor, WYCR349 of Watervliet, Mikey Johnson, WSMC927 of Green Island, and Cody Fletcher, (No license Yet) of Cohoes.
- Jackson noted that the UHF Duplexer had been tuned by Steve VanSickle, KB2HPR, and was ready to be installed at the WTEN Tower Site and that member Bob Isby, K2RHI, was looking into if Wells Communications had a suitable UHF antenna for the site. Jackson also noted that the club was also looking into putting a remote Weather Station at the WTEN Tower Site.
- Jackson noted that the riding lawnmower used at the repeater site needed a belt replaced, that a new one had been purchased, and that member Eric Ensign, KE2ICO, cleaned the carb on the mower. The installation was scheduled to be completed at the next work party.
- Jackson stated that the Country True Value Hardware in East Greenbush donated five (5) gallons of Benjamin Moore Aura paint to potentially be used at the Search and Rescue building. Member Jim Pendolino, KC2HRO, stated he would bring it up with RCSAR to see if they would be interested in it.
- Jackson noted that the USS Slater had their Museum Ship's Weekend on June 6th and 7th where member Walt Snyder, N2WJR, worked the radio room for the event.
- Jackson noted that the 2026 Hamfest went well and thanked everyone who helped at the event. Jackson added that everything was well organized, efficient, and that sellers reported they did well. Jackson also added that Stewart's Shops made a late donation to the club for the event in the form of two $50.00 gift cards.
- Jackson noted that the remaining Estate Sale equipment needed to be inventoried and listed for sale online with most of the equipment sold.
- Jackson announced that Field Day would be at the RCSAR building on Saturday June 27th and Sunday June 28th with lunch and refreshments provided. Jackson noted that two Heil Headsets were being purchased for Field Day.
- Jackson closed by noting that Field Day sign-ups were needed and that a sign-up sheet would be passed around.

- Vice President's Report:
- Vice President Matt Saplin W2SAP had nothing to report.

- Treasurer's Report:
- Treasurer Peter Brickman, KD2YLG, updated members on the club's bank balances and detailed income from the club's Hamfest.

- Secretary's Report:

- Secretary David Jaeger, K2DEJ had nothing to report.

- Board of Directors Report:
- There were no comments from the Board of Directors.

- Member Updates:
- There were no comments from Members.

- A motion was made by Dave Gillette, KC2RPU and seconded by Ridge Macdonald, KB2HWL to adjourn the meeting at 7:45 PM. The motion was carried unanimously.

When It Comes to E-Skip, It's All About the MUF

The maximum usable frequency soared during a banner 2026 Sporadic-E season

By Nick Langan, Radio World

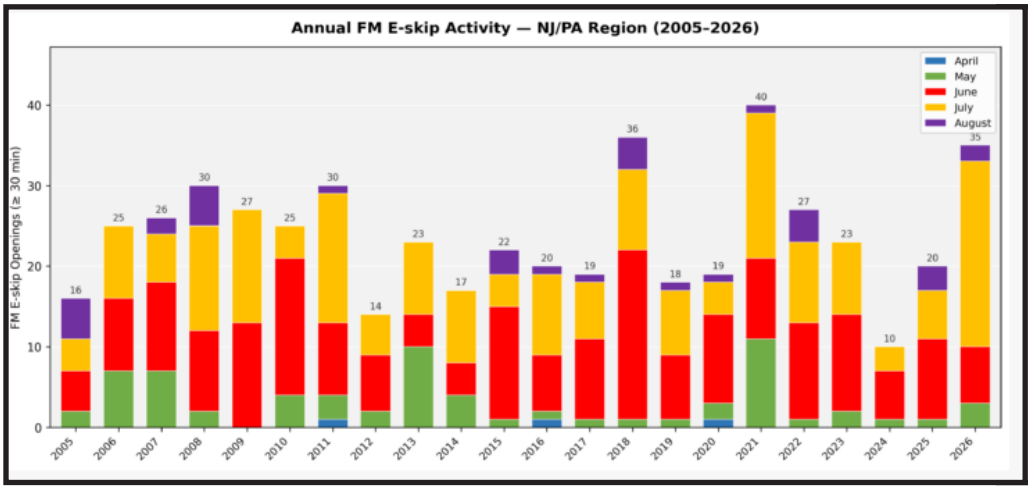
This was the summer of E-Skip.

Now that the activity for the most part has died down, we can look back on what was a remarkable stretch for Sporadic-E propagation. It started to roar during a three-day stretch in June, and a period in mid-to-late July may have even exceeded it. Rest assured, there were no conspiracies at work, causing it all.

I've kept my own records of FM E-Skip, tracking openings continuously into the 88–108 MHz band for more than 30 minutes, since I started following this crazy hobby in 2005. It is a bit of an ode to Pat Dyer, WA5IYX, who dedicated his life to studying E-Skip propagation. He kept meticulous records from 1972 up until he passed away in 2016.

My records reflect activity for the northern Mid-Atlantic, namely New Jersey and eastern Pennsylvania, based on my own observations and reports from several local long-distance radio enthusiasts, or DXers. Your mileage may vary.

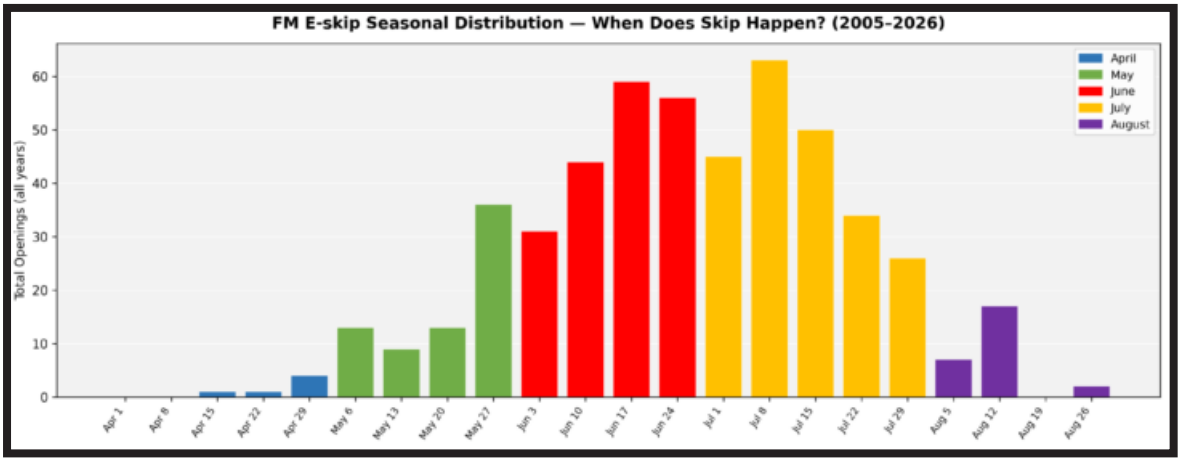
In terms of 30-minute openings — admittedly a subjective metric — I rank 2026 number three all-time, behind the extravagant 2021 season and 2018. Maybe we were due — 2024 was my worst all time. There is some season-to-season variation!



Through the E-Skip seasons in New Jersey and Pennsylvania.

The number on top is the total number of FM openings of 30 minutes or more on the FM band.

That 2026 was so bountiful seems to be the case both anecdotally amongst DXers and through a dataset Loyd Van Horn maintains, which we've written about. If you're curious for what kind of seasonal curve FM openings have favored in that dataset, here's a chart that plots the activity by specific calendar dates. But for intense openings where the Maximum Usable Frequency (MUF) climbs, 2026 may have taken top honors.



-continued on page 8-

The Summer of E-Skip...

And when it comes to E-skip, it's all about the MUF. Typically, an E-skip cloud is dense enough to reflect lower frequencies like 50 MHz, or the 6-meter amateur radio band, but it may not reach the U.S. FM broadcast band of 88–108 MHz. As Andrew, VK3FS, explains, from time to time, the intensity of the Sporadic-E cloud ionization increases to the point where the MUF rises into the 2-meter amateur radio band, or even beyond.

Matt Sittel in Manhattan, Kan., experienced this firsthand during a major July 24 opening, using a setup of multiple AirSpy SDRs and laptops to capture full baseband recordings across all seven NWR channels. He put together a terrific video chronicling the staggering 59 NWR receptions he made that day that is worth your time. It's at: ***https://youtu.be/8wJY2Gx3DtI?si=XqftGLrbYgdEkUG3***.

By aiming his antenna into a local signal null and cross-referencing audio against NWS text archives, Sittel logged a 596-mile skip to WXJ92 in Horse Cave, Ky., which is notably short for a frequency so far up in the VHF band.

Sittel's sub-600-mile catch highlights that as the MUF rises, skip distances shrink.

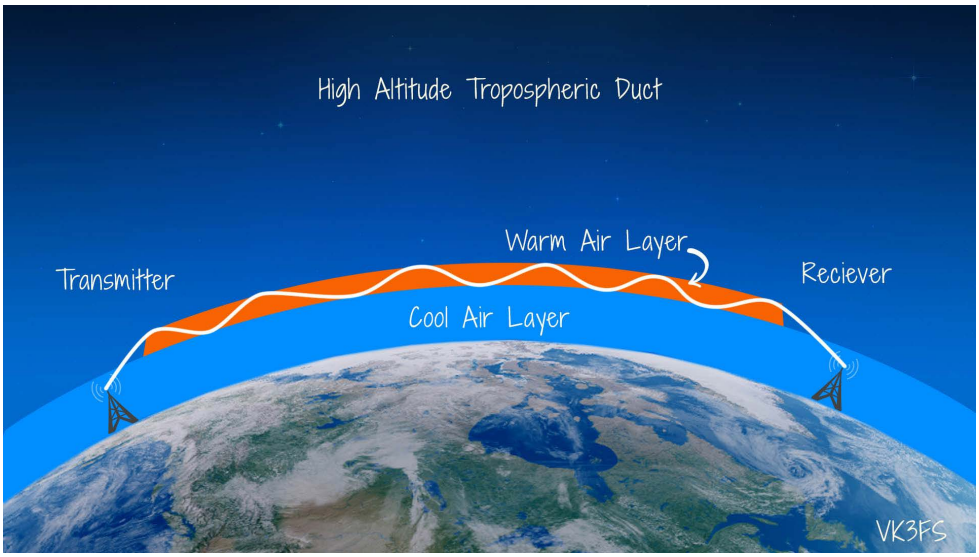
On July 20, Mid-Atlantic DXer Michael Temme-Soifer captured an outstanding example during an intense short-hop opening near Princeton, N.J., logging 88.7 WIQR(FM) from Lexington, Va., at a distance of only 294 miles. That kind of distance is not unheard of on 6 meters. But in my years observing, I've never seen a distance that short reported on the FM broadcast band prior.

Transatlantic openings even made brief appearances, with Ireland DXer Paul Logan's reception of 88.5 WHCF in Bangor, Me., on July 29. His video about it is at: ***https://youtu.be/0nNkBTCujIc?si=CFeO5FFFcjX_SrXs***. And Randy Zerr (KW4RZ) in Goldfield, Nev., said that 2026 was his best for double-hop E-Skip on FM. Check out his video of a bevy of catches from the Great Lakes and Pennsylvania on July 20. It's at: ***https://youtu.be/cN-iPO8aLa4?si=7PORerM9q-xffOCc***.

Meanwhile, Rusty Kinner (WA8ZID) in Surprise, Ariz., wrote us to detail the success he had on six meters this season. He had just under 300 contacts on 6 meters since June 1 and 106 unique grids. "Of those grids, 24 were new grids for me," he said. "Contrast to 8 new grids in the summer of 2025 and 11 for the entire year before. I'd call it a banner summer!"

There was a 17-day stretch, he told us, with consecutive openings typically between 8 a.m. to noon local time. "I'd never seen such consistency before," Kinner told us.

What a fun season for FM DX. E-Skip may be done for now, but now I look forward to tropospheric ducting in the fall. Let's see what else 2026 has in store!



Please Support EGARA's Hamfest Sponsors and Corporate Partners!

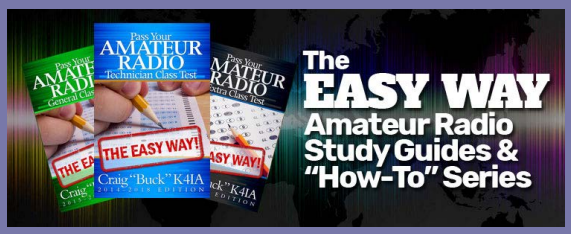
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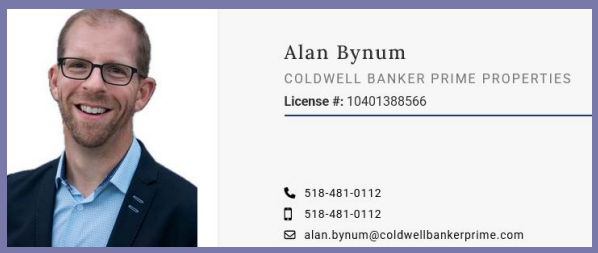


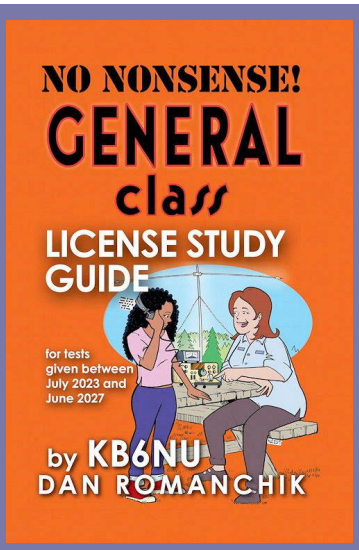
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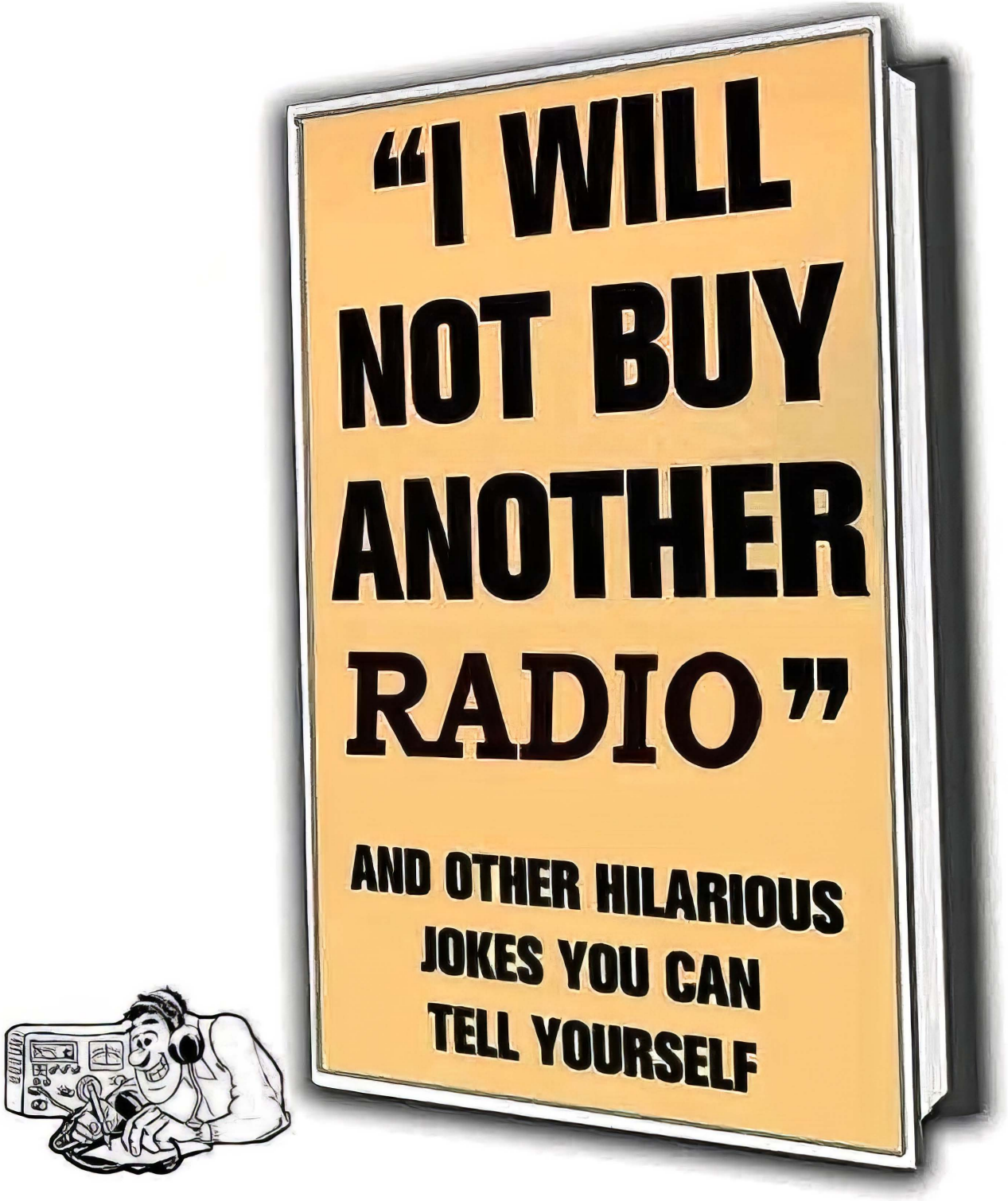
N3FJP
Amateur Radio Software

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EGARA Book of the Month Selection



CALENDAR

September 10, 2026 @ 7 pm - Regular Monthly Club Meeting, Search & Rescue Building - Club Elections.

December 10, 2026 - Annual Christmas Holiday Party, location to be announced.

Pro Tip: Turn Down that RF Gain

It might seem logical to crank up the RF gain control on your transceiver to improve reception, especially of distant stations. But what many hams don't realize is that it also turns up the noise on your receiver.



By reducing your RF gain control you can actually improve your listening comfort. Among the benefits:

- **It reduces loud atmospheric crashes and constant static on lower HF bands like 40m, 80m, or 160m.**
- **It prevents receiver overload by stopping nearby strong signals (such as during Field Day operations) from drowning out weaker contacts or distorting your receiver.**
- **It optimizes AGC performance by keeping strong local signals from driving the AGC crazy and blanketing the audio.**
- For a 1 dB increase in gain, the 3rd order intermodulation products increase by 3 dB. Therefore, if intermodulation is contributing significantly to noise, decreasing RF gain improves the Signal to Noise Ratio.

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.



GEAR FOR SALE

- Atlas Sound AD-12 Mounting flange - $8.00
- Atlas Sound GN-13 Gooseneck, 13 in. - $12.00
- Marshall V67g Condenser Microphone w/ shock mtg, pop filter, case - $75.00
- AKG P220 Large diaphragm condenser microphone with shock mount - $75
- Heil 781 Microphone with shock mount - $125
- Heil FS-1 Foot Switch w/ cable and phug - $ 22
- Heil HM-12 Microphone - $45
- Shure PG-58 Microphone - $ 25
- Heathkit HM-12 SWR Bridge - $35
- Timewave ANC-4 Noise Reduction - $100
- W2IHY I Box - $35

Contact Steve VanSickle, WB2HPR
email: stevewb2hpr@gmail.com

Kenwood TS-690 Transceiver - Covers 160 through 10 meters plus 6 meters; receive covers 0.03 to 30 MHz and 50 to 54 MHz. Power Output: 100W on HF and 50W on 6 meters for SSB, CW, and FM (lower for AM). Modes: SSB, CW, AM, FM, and FSK. Features two separate SO-239 jacks—one for HF and another for 6 meters. Perfect condition and a great performer. $525.

Contact Bryan Jackson, W2RBJ
email W2RBJ@outlook.com

Sell your unused gear with a free ad in Sidebands and online!
Send details to: EGARAradio@gmail.com