

President Emeritus - Bryan Jackson, W2RBJ President - Patrick Negus, W2PMN Vice-President - Walt Snyder, N2WJR
Secretary - David Jaegar, Jr. - K2DEJ Treasurer, Pete Brickman, KD2YLG
Board Members: Tom Scorsone, KC2FCP - Bryan Jackson, W2RBJ - Don Mayotte, KB2CDX

Repeater Antenna Relocation Gets OK

EGARA has received approval from WTEN to relocate its 147.270 mhz repeater antenna to the station's former analog tower on the Helderberg Mountains. The antenna is currently mounted on a 40 foot Rohn tower that is adjacent to the analog tower -- but its coverage area is compromised because it is blocked by higher terrain just to the east of the site. As a result, the repeater's reach into Albany and the East Greenbush area is subject to dropouts, dead spots and interference.

"WTEN's Chief Engineer, Steve Pingelski, has been great to work with and he's been very supportive of the club's repeater project," said EGARA Board member Bryan Jackson, W2RBJ. "He helped us with minor revisions to the use agreement and assisted us in the approval process with Nexstar, which owns the station."

The surrounding terrain rises to almost 1,600 feet, while the current antenna elevation is around 1,540 feet. The proposed relocation will place the antenna above both the surrounding terrain, as well as above nearby trees which also interfere with the signal. Jackson said it was hoped the original installation would provide suitable coverage, but the higher terrain blocked the signal more than anticipated.

Bob Isby, who runs Algonquin Communications, was kind enough to install the Rohn tower and antenna for the club. He has also drafted the plans for the relocation to the old WTEN tower and provided technical materials to support the proposal. The club hopes to complete the relocation project before winter weather sets in.



Bob Isby working on the current repeater antenna tower this past July.

Plans are to move it to the former WTEN analog tower seen to the right.

In This Issue

Page 1 - Repeater Progress / New Mower
Page 2 - Club Week Event
Page 3 - On the Beam News & Notes
Page 4 - Meeting Minutes
Page 5 - Shortwave a Mouse Click Away
Page 7 - Why 50 Ohms?
Page 8 - Capital Region Radio Pioneers
Page 13 - Hamfest Sponsors
Page 14 - Calendar / Classifieds / Pro Tip

Grazing in the Grass at the WTEN Site

EGARA's partnership with WTEN includes the club's maintenance of the station's former analog transmitter site in return for allowing the club to use the facility to house its VHF repeater. Over the summer, club members removed years of overgrowth and brush from the grounds, as well as cleaned the building. i

To help maintain the grounds, the club received a donated push mower that was secured by Dave Smith, WA2WAP. In October, EGARA Board member Bryan Jackson, W2RBJ, was able to also secure a John Deere riding mower to make the yard work easier. Club Vice President Walt Snyder, N2WJR, donated use of his truck and trailer to bring the riding mower to the WTEN site.



Next Event: Club Week!

The National Amateur Radio Alliance is kicking off a new event -- Club Week! And, EGARA is planning to participate.

EGARA will kick off this new Amateur Radio event on Saturday, November 1st at 10 a.m. with free pancake breakfast at the Search and Rescue Building, followed by members getting on the air using the club's HF station that's set up at the location. Members are also encouraged to consider bringing their own gear to operate in other modes such as FT8 and DMR.

Club Week is designed to promote contact between Amateur Radio clubs, help new operators get on the air, and to provide the public with a chance to see Amateur Radio in action. As the event runs through Saturday, November 8th, EGARA members are invited to operate during the week from their home stations too. Logging contacts is also requested to help assist the club in sending out QSL cards.

While the primary goal is to contact other clubs and exchange QSL cards, this unique on-the-air event also looks to serve many additional purposes, including:

- Encouraging real conversations between operators;
- Providing opportunities to operate in public places and engaging with the community;
- Helping new hams to overcome mike fright and build confidence;
- Promoting activity across all bands and modes;
- Introducing new and Technician-class operators to the excitement of HF.

Unlike a contest, Club Week isn't about points or logs — it's about participation, connection, and fun. Clubs can operate from their shack, a member's home, a park, or any public location. It's a relaxed, friendly event focused on making contacts, getting to know other clubs and sharing the spirit of Amateur Radio.

Participants are also encouraged to send and respond to QSL cards, offering a great way to engage new operators and keep the tradition alive.

The National Amateur Radio Alliance (NARA) is a national nonprofit membership association dedicated to empowering hams, supporting clubs, and promoting the growth of amateur radio. Whether operators are just getting licensed or have been active for decades, the alliance offers support to all.

NARA describes itself as a national association built for today's ham radio community, with its focus on four key areas: resources, engagement, outreach, and advocacy.

NARA's mission is to promote the growth and sustainability of Amateur Radio, developing initiatives that foster engagement, build community, promote learning, and support public outreach opportunities. Through strategic partnerships and innovative approaches, it seeks to expand Amateur Radio's to ensure the hobby remains vibrant and relevant for generations to come.

After the event, NARA is encouraging clubs to submit a post-event summary and photos through its website so it can feature club activities and share them with the broader Amateur Radio community.

To learn more about Club Week, visit <https://usnara.org/club-week.php>



On the Beam News & Notes

Government Shutdown Derails Amateur Licenses at FCC

The federal government shutdown is holding up processing of new licenses and upgrades at the FCC. In addition, it has affected the CORES system, stopping the issuance of FRN numbers that are required before applicants can take their Amateur Radio license tests.



ARRL is still accepting completed test applications and results, but is holding them until the FCC resumes operations. As a result, those passing their Technician test are not being issued their licenses and call signs. Fortunately, currently licensed Technician and General class operators who successfully pass their upgrade tests can immediately use the privileges of their new higher class by adding "AG" for General or "AE" for Amateur Extra to their call sign until the FCC license database can be updated.

EGARA Lends Supports to Antenna Legislation

EGARA has gone on record in support of the federal "Amateur Radio Emergency Preparedness Act" (ARERA), the proposed legislation that would prevent homeowner associations (HOAs) from enacting blanket bans on amateur radio antennas. The club submitted letters of support to the U.S. Senators who represent New York, as well as to the local members of the House of Representatives.

At the club's October meeting, Dave Galletly, KM2O, presented an overview of the legislation and requested that club members also contact their federal elected lawmakers in support of the proposal.



The bill aims to allow the installation of antennas, while still permitting HOAs to enforce reasonable safety and compliance rules, such as those for structural safety and adherence to local building codes. The ARERA would also establish a clear approval process and give amateur radio operators a right of action for disputes.

Bipartisan companion bills (H.R. 1094 in the House and S. 459 in the Senate) were reintroduced in early 2025 and both bills have been referred to their respective committees for consideration.

Club Website and Newsletter Entered in ARRL Contest



ARRL has been declared 2026 as "The Year of the Club" and as part of its celebration the League is running a contest to honor the club with the best website and newsletter. EGARA has submitted both its "Sidebands" newsletter and its website -- www.EGARA.org -- for consideration.

The club's submissions included a full year of newsletters, as required by the contest rules, as well as a statement summarizing its mission and goals. Submission of the website included a similar mission statement, as well as the website's URL address.

Winners will be notified in May 2026 and announced in QST magazine as part of ARRL's Year of the Club celebration. They will also be presented awards at the Huntsville Hamfest in August 2026.

EGARA September Meeting Minutes

- The meeting was called to order at 7:00 PM;
- Introductions were made by all members (17) and guests (4) present;
- **President Patrick Negus, W2PMN made his report:**
- **Old Business:**
- President Negus noted that Search and Rescue would be allowing the club to install an antenna in the attic of the building and that an antenna and coax would need to be purchased. Member and President of the RCSAR, Jim Pendolino, KC2HRO stated that he would do the installation;
- **New Business:** President Negus had no new business to report;
- **Vice President's Report:** No report from the Vice President was made;
- **Treasurer's Report:**
- Treasurer Peter Brickman, KD2YLG reported on the balance in the club's bank account and that the club obtained two new members from Community Day;
- **Board of Directors Report:**
- Board member Bryan Jackson, W2RBJ noted that he had purchased a John Deere riding mower to be used at the WTEN tower site to maintain the grounds and that it ran well;
- Jackson also noted that a Wi-Fi controlled AC kill switch was purchased for the repeater that would be installed.;
- Jackson stated that as of the meeting date he was waiting to hear from Channel 10 regarding relocating the repeater antenna;
- Jackson noted that the East Greenbush Community Day went well despite the club not being able to operate from the Red Barn due to noise in the building. The club's new vertical antenna was used and seemed to perform well, receiving a Europe-only QSO Party as well as stations in Spain and Costa Rica;
- Jackson reported that the Erie Canal Bicentennial POTA station went well with several members operating and noted that the logs from the event were sent in. Jackson added that the upcoming USS Slater Special Event Station was scheduled for Columbus Day, Monday October 13th from 10 AM to 4 PM;
- **Member Updates:**
- Multiple members discussed possible locations for the upcoming Christmas Party. The discussion concluded with member Bryan Jackson, W2RBJ stating that he would reach out to the Schodack Diner to see if they were able to accommodate the club;
- President Negus, W2PMN noted that there would be a School Club Round-Up in the coming weeks providing an opportunity to make contact with younger hams;
- Dave Galletly, KM2O made a presentation about a federal bill to prevent HOAs from being able to restrict amateurs from being able to install outside antennas at their homes in HOA communities. The proposal before the House of Representatives and the Senate was called: H.R. 1094 & S. 459. He urged members to submit letters to their Congressional representatives in support of the legislation;
- Pete Sochocki, NY2V made a presentation on Standing Wave Ratios (SWR) and Antenna Tuners;
- The meeting concluded at 8:00 PM.

Minutes recorded by Secretary, David Jaeger, K2DEJ

The World Is at Your Mouse Click

Tuning to shortwave radio over web-connected receivers

By James Careless

Even with the loss of the Voice of America, the international shortwave radio bands are still alive with stations worth listening to. But what can you do if you don't have a shortwave receiver, and/or live in an urban area where reception is difficult?

The answer is to use the Internet to access remotely tunable shortwave radio receivers located around the globe. By going through these websites — which are free to use — you can get a taste of what's on the air worldwide.

That's not all: Shortwave radio receivers that are based far away from your location may allow you to hear international stations that you would never be able to receive at home. And if you do already have a shortwave radio, these web-based remotely tuned radios can help you confirm what you're picking up at your own location.

How remote receivers work --

Although the equipment used varies from site to site, the principle of remote radio tuning over the web is pretty constant.

The person who runs the website creates an interface — often styled to resemble an actual radio receiver — that the listener can interact with using the mouse. This form of control allows them to choose the frequency, control volume and often set various filters that improve the intelligibility of the signal being listened to.

So where do you find such radios? Well, you can always do a Google Search. However, it will save you time to surf to ***Globaltuners.com***, ***SDRSpace.com*** or ***WebSDR.org***. These are Software Defined Radio sites -- better known as "SDR".



A mounted Optibeam OB9-5 antenna monitors the 10m, 12m, 15m, 17m and 20m radio bands, anchoring the remote listening setup on Mount Rigi in Switzerland.

One truly cool site is the KiwiSDR map site at <http://rx.linkfanel.net/>. As the name suggests, this link takes you to a world map of clickable KiwiSDR remote receivers. The KiwiSDR platform is unique in that it supports up to four independently-controlled connections — each user gets to control their own audio and waterfall channels.

While the KiwiSDR offers independent sessions, other remotely-accessible SDRs may not. For instance, some setups are designed for only one user at a time, or they force all users to share the same frequency. In these cases, proper etiquette is crucial; don't just log on and start tuning around!

SDRs also can pick out signals that are just peeking out of the background electrical noise in urban and suburban neighborhoods. For instance, this noise-free method allows listening to stations from places like southeast Asia that might be otherwise unreadable.

- continued on page 6 -

Tuning to shortwave radio over web-connected receivers...

For your first stab at using a remotely tuned radio, try the online receiver operated by Jeffrey W. Chilton (Amateur Radio call sign KM4QH) in Reston, Va. Its online interface is modeled directly on a classic Drake R8 radio receiver which you can operate using your mouse.

As for ideas where to tune to? The free website *Short-wave.info* can tell you which shortwave stations are on-air now, and help you identify any that you may come across. But be aware that the times cited on this website use Universal Coordinated Time or UTC, which is the same as Greenwich Mean Time set in England. Just ask Google “what is the current time in UTC” to find out what it is right now (look for answers that use a 24-hour clock). This will help you figure out what stations to chase.

Supercharged --

When it comes to remote shortwave listening — in this case, as a sidebar to a multiband Amateur Radio station — it is hard to beat the setup operated by Wolfgang Sidler (HB9RYZ) and Fredric Furrer (HB9CQK) on Mount Rigi in Switzerland.

Located at a height of 5446 feet above sea level, the remote radio station uses a former Swiss Army radio mast to host a full range of amateur radio Yagi antennas on a rotatable mount.

The station also has a range of Amateur Radios that can be accessed online, as well as remote software defined multi-band radios.

“The army was going to tear this mast down in 2018, until myself and Frederic heard about it,” said Sidler.



Wolfgang Sidler, HB9RYZ, who runs the Swiss SDR system with Fredric Furrer, HB9CQK on Mount Rigi

“We signed a rental contract with them, and now we have used this site for five years — the highest and most modern Flexradio 6700 remote amateur radio station in all of Europe — to let people free of charge worldwide listen to signals, and see how well their own Amateur Radio broadcasts are being received in Switzerland. Every Amateur Radio operator can experiment with sending their own signal and receiving from Europe.”

As the Swiss Remote DX Amateur Radio station website details (<https://www.hb9ryz.ch/>), maintaining the tower during Switzerland’s harsh and windy winters is not a job for the faint-hearted. But the results are well worth it.

“You can reach and hear almost everything here in Switzerland,” Furrer said. “If there is a very rare Amateur Radio station somewhere in the Pacific, we can always make contact. For example, Wolfgang and I managed to work in Guam on the magic 6m band, as well as one in Hawaii. That’s very, very rare in Switzerland, and it’s only because we have access to this amazing remote facility.”

Worthwhile, and free -

If you take anything away from this article, it is the idea that trying shortwave radio listening using online remote radios is a worthwhile experience.

Better yet, it is also free.

Why Is 50 Ohms The Standard?

Many of the things technical people deal with have names or origins that are not necessarily clear or have been forgotten. One question that many hams often wonder about is why is Amateur Radio gear and coax use an impedance that is usually 50 Ohms?

What Do You Want To Carry?

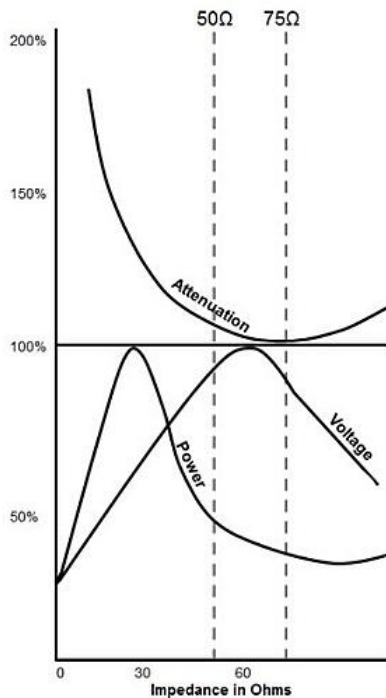
But first of all, why 50, or any other number? The answer can be shown in the graph. at the right. This was produced in 1929 by two researchers, Lloyd Espenscheid and Herman Affel, working for Bell Labs.

They were going to send RF signals (4 MHz) for hundred of miles carrying a thousand telephone calls. They needed a cable that would carry high voltage *and* high power. In the graph, you can see the ideal rating for each. For high voltage, the perfect impedance is 60 ohms. For high power, the perfect impedance is 30 ohms.

This clearly means that there is NO perfect impedance to do both. What they ended up with was a compromise number, and that number was 50 ohms.

Note that 50 ohms is closer to 60 than it is to 30, and that is because voltage is the factor that will kill your cable. Just ask any transmitter engineer. They talk about VSWR, voltage standing wave ratio, all the time. If their coax blows up, it is voltage that is the culprit.

So why not 60 ohms? Just look at the power handling at 60 ohms - below 50%. It is horrible! At the compromise value of 50 ohms, the power has improved a little. So 50 ohm cables are intended to be used to best balance transfer of both power and voltage, like the output of a transmitter. For a smaller strength signals, like video, or receive antenna signals, the graph shows that the lowest loss occurs at 75 ohms.



Cable Size

Next, manufacturers needed to design and build the cable to the right impedance – and in a manner that sections and ends can be reliably connected. Calculations led to a ratio of inner conductor to outer conductor that results in the characteristic impedance for cables of varying sizes. For cable of 50 Ohms, for example, a center conductor of one-inch would require an outer conductor of 2.3 inches. This can be scaled up as a ratio for the larger coax cables used in the highest power applications.

On the other hand, perhaps you may have heard of some cable and/or rigid line having an impedance of 51.5 Ohms. This came about because in the early days, the easiest materials available for the center conductors were common $\frac{3}{4}$ -inch rods – and outer conductors made from 2-inch water pipes. (One can only recall that often transmission line is referred to as “plumbing”). It so happened that they ended up measuring as 51.5 Ohms.

Getting Down to 50 Ohms

As precision manufacturing processes improved (or maybe water pipes changed a bit), 50 Ohms became adopted as the standard, although 51 or 51.5 Ohm cable can still be found, and occasionally 52, or even 53 Ohm products.

Another change was flexible coax made possible by materials like polyethylene. With its dielectric constant (2.3), filling a 77 Ohm air-filled cable with polyethylene resulted in an impedance of 51 Ohms. A slight change in dimensions and 50 Ohms became the common, default impedance for coax designed to carry higher powers.

And that is why your coax cable is 50 Ohms.

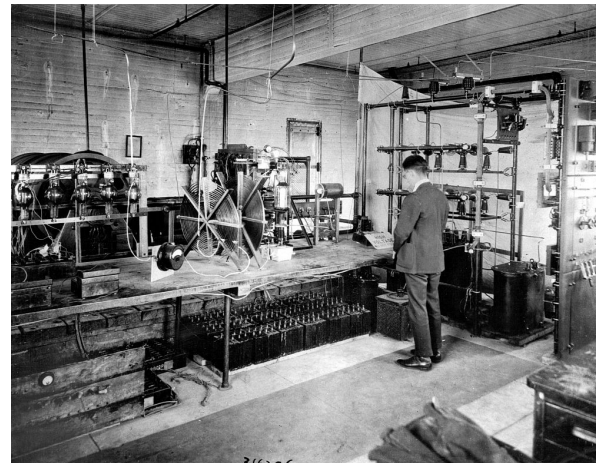
Capital Region Was Proving Ground for Radio

November 2025 marks 105 years since radio first became a reality for the general public. That's when Westinghouse station KDKA in Pittsburgh went on the air; its first broadcast was the news of Warren G. Harding's electoral victory in that year's presidential race. But Pittsburgh wasn't the only place where major advancements were made in radio -- Schenectady had already been leading the way years before with engineers at General Electric experimenting with wireless technology.

General Electric had been one of the giants of the electrical industry ever since its founding by Thomas A. Edison in 1890 under the name Edison General Electric. After conquering the worlds of power generation and transmission and electric lighting, G.E. entered the radio field in 1919 when it joined the partnership with Westinghouse Electric Corporation and American Marconi in the formation of the new conglomerate, RCA – The Radio Corporation of America.

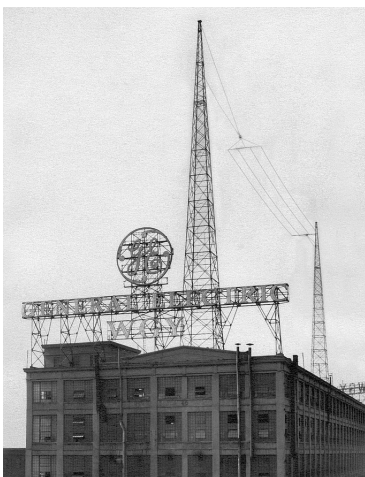
At the dawn of broadcasting in 1920, a handful of crudely-equipped radio stations were using telephone-mouthpiece microphones and wind-up phonographs to feed their scratchy programs to makeshift homebuilt transmitters. Their early vacuum tubes were low-powered, unstable, expensive and short-lived. All that changed over the next decade. By 1929, stable, powerful transmitters, elaborate studio equipment and high-fidelity microphones were delivering quality programs to listeners. Most of those technological improvements were developed by just three companies: AT&T, Westinghouse, and General Electric.

At that time, G.E. was a veritable cradle of radio technology. It had dabbled with radio as early as 1912 when it operated its experimental station 2XI. Its radio research activities were led by some of the world's most capable engineers and scientists – among them Dr. E.F.W. Alexanderson, Dr. Charles Steinmetz, Irving Langmuir, and A.D. Ring.



WGY's first 1,000 watt transmitter

In 1920, the company realized that the operation of a radio broadcast station would provide it with a real-world laboratory for the development of broadcast transmitters and antennas. Additionally, as a manufacturer of RCA's first radio receivers, G.E. -- like Westinghouse with its station KDKA -- saw value in operating a broadcast station to provide quality programming to the public, which would in turn promote the sale of radio receivers. Such a station, blessed with near-unlimited funding by one of the world's largest corporations, could also serve as the laboratory where much of those technologies could be tested. Indeed, during the 1920's, G.E. would invest nearly \$10 million towards the study of RF propagation, transmitters and power vacuum tubes.



WGY's antenna atop Building 40 in Schenectady

WGY: Schenectady's Radio Laboratory --

And so it was that, late in 1921, G.E. began construction of a new broadcasting station at its manufacturing campus in Schenectady. It was the 40th broadcasting station to grace the country's airwaves, authorized for a power of 1,500 Watts – which at that time made it the most powerful station in the country. The call letters WGY were assigned at random by the U.S. Commerce Department, which originally oversaw broadcast licensing. But the staff at WGY quickly used the call sign to their advantage, declaring that the “W” stood for Wireless, the “G” for the first letter in General electric, and the “Y” for the last letter in Schenectady.

In the early part of the 1920's, WGY – along with most other broadcasters – shared the single frequency of 360 meters (833 kHz). In 1923, it moved to 790 kHz, at first sharing time with WHAZ in nearby Troy, but by 1928 it enjoyed exclusive use of the channel. Eventually WGY moved to its present 810 frequency in 1941 with the nationwide adjustments required by NARBA treaty.

- continued on page 9 -

Capital Region Was Home to Radio Pioneers...

WGY's two-room studio was located on the fourth floor of G.E. Building 36. Its transmitter was squeezed into the elevator room of Building 40 a half-mile away. Two 150 foot towers were constructed on the top of building 40 and a flat-top wire antenna was suspended between them.

That first transmitter was a "haywire" contraption – consisting of open wooden frames supporting coils, wires and vacuum tubes. Dr. W.R.G. Baker (honored by Channel 6's call sign WRGB) was in charge of radio transmitter development and he built the transmitter. Meanwhile, William C. White, head of the vacuum tube division, hand-built the tubes. White later said, "It was a crude affair and, as we look at pictures of the equipment at that time, it is a wonder that it ever stayed together." Even after WGY went on the air, the transmitter was continually being altered as new circuits and tubes were tested.

In the first years of commercial broadcasting, WGY was continually being used for experiments with new vacuum tubes, receiving circuits, transmitting circuits, short wave, television and many other aspects of the radio science. In August of 1922, WGY was the first station to use a condenser microphone, another new G.E. development.

G.E.'s publicity manager, Martin P. Rice, was named WGY's first manager of broadcasting, and Kolin Hager became the first announcer. WGY debuted on February 20, 1922, with a test concert from 7:45 to 8:50 PM. Hager opened the program by saying, "This is station WGY -- W, the first letter in wireless, G, the first letter in General Electric, and Y, the last letter in Schenectady."

The short program consisted of live music with announcements of song titles and other information. The next day, WGY made its first remote broadcast—a speech by Governor Nathan Miller from Schenectady's Union College. On June 26, WGY broadcast the first recording of a live event - an address by radio inventor Guglielmo Marconi, the first of many broadcasts that would use the G.E. Pallophotophone sound-on-film photographic recording process.



Kolin Hager, the first voice heard on WGY

WGY's comparatively powerful signal reached across the continent in those early days of uncrowded radio bands and scant electrical interference, and signal reports were being received from Cuba, England and Alaska. WGY quickly gained a nationwide following because of the quality of its broadcasts.



"Kilowatt", WGY's cat mascot, engaged in the world's first trans-continental on-the-air cat fight with the dog mascot of an Australian shortwave station.

Radio Gimmicks --

Not all programs on WGY were serious. Some programs were simply technical "stunts". In June of 1930, WGY broadcast the song "I Love You Truly" around the world via a series of shortwave rebroadcasts. The Schenectady signal was repeated in The Netherlands, Java and Australia, before finally being received again back in Schenectady. The station announced, "The music you are hearing has gone completely around the world".

On one occasion, a cat placed in front of a microphone in Schenectady had a fight with dog placed in front of a microphone in Sydney, Australia. On another night, a radio bridge game was held, with the players being located in New York and Argentina.

Early Networks --

In 1922, WGY was one of the first stations in the country to participate in "chain" broadcasting – connecting multiple stations together by telephone line to broadcast a single program. This soon led to the commercial radio networks. Those first network broadcasts used Western Union and Postal Telegraph lines to connect WGY, WJZ and WRC for broadcasts of the World Series games.

- continued on page 10 -

Capital Region Was Home to Radio Pioneers...

In June of the following year, WGY joined KDKA and KYW to rebroadcast a meeting of the National Electric Light Association that originated from AT&T's station WEAf in New York. In March of 1924, a MIT Alumni banquet at the Waldorf-Astoria Hotel originating at WJZ in New York was carried by telephone lines to WGY where it was rebroadcast on AM and shortwave. General Electric's shortwave signals over W2XAF and W2XAD were picked up by the Westinghouse shortwave station KFKX in Hastings, Nebraska, which relayed the program to KGO in Oakland, resulting in a coast-to-coast live broadcast. Finally, on January 1, 1927, WGY became one of the inaugural stations of the new NBC radio network.

High Power --

Although WGY's programs were well-received by listeners, it was the behind-the-scenes experimentation in high power transmission that is notable today. Scarcely two months after WGY's debut, additional tubes were added to its transmitter to raise the power to 5 kW. It was at that point that William White's tube development crew realized there was a limit to the size and power of glass tubes, as well as to the number that could be operated in parallel without creating parasitic problems and a loss of efficiency. A better solution would be needed, and work began on the development of water-cooled tubes.

In 1924, WGY moved its transmitting plant to the current location in Rotterdam. This was G.E.'s South Schenectady transmitter laboratory, a 54 acre site which also housed the company's two shortwave stations. Here, WGY broadcast from a 240 ft. high vertical "cage" antenna with ground radials instead of the usual T-type antenna of the time. This antenna was replaced with the present 625 ft. half-wave tower in 1938.



Assembling a 100 kW UV-862 tube

The new transmitter generated 10 kW using a single experimental 20 kW UV-207 - the first practical water-cooled tube. This higher power was also made possible by another G.E. development, the mercury vapor rectifier tube, which allowed the generation of higher DC voltages.

Even though 10 kW was the highest broadcasting power achieved to that time, this did not weaken G.E.'s quest for still more power. After all, G.E. was manufacturing dynamos capable of thousands of kilowatts, and so the task of creating higher-power vacuum tubes was not intimidating.



QSL card featuring members of WGY's on-air staff.
It billed itself as the "Electric City Station"
to acknowledge its Schenectady roots

William White and his development team continued their quest for bigger tubes having higher power, longer life, and better efficiency. They began development of a 100-kW water cooled tube. "WGY was never too much of a showplace because we were always trying something new in the way of new types of tubes," he said. "Some of those were screen-grid tubes, thoriated filament tubes, and mercury vapor rectifier tubes. Our own station WGY was very often a proving ground where we tried out new things."

Coincidentally, the Department of Commerce expressed an interest in exploring "super power" broadcasting, and it authorized WGY and WJZ to be the nation's first 50 kW test stations. On July 18, 1925, WGY became the first U.S. station to operate with 50 kW, more than a year ahead of WJZ. Its test broadcast was widely publicized, and thousands of letters were received praising the reception quality.

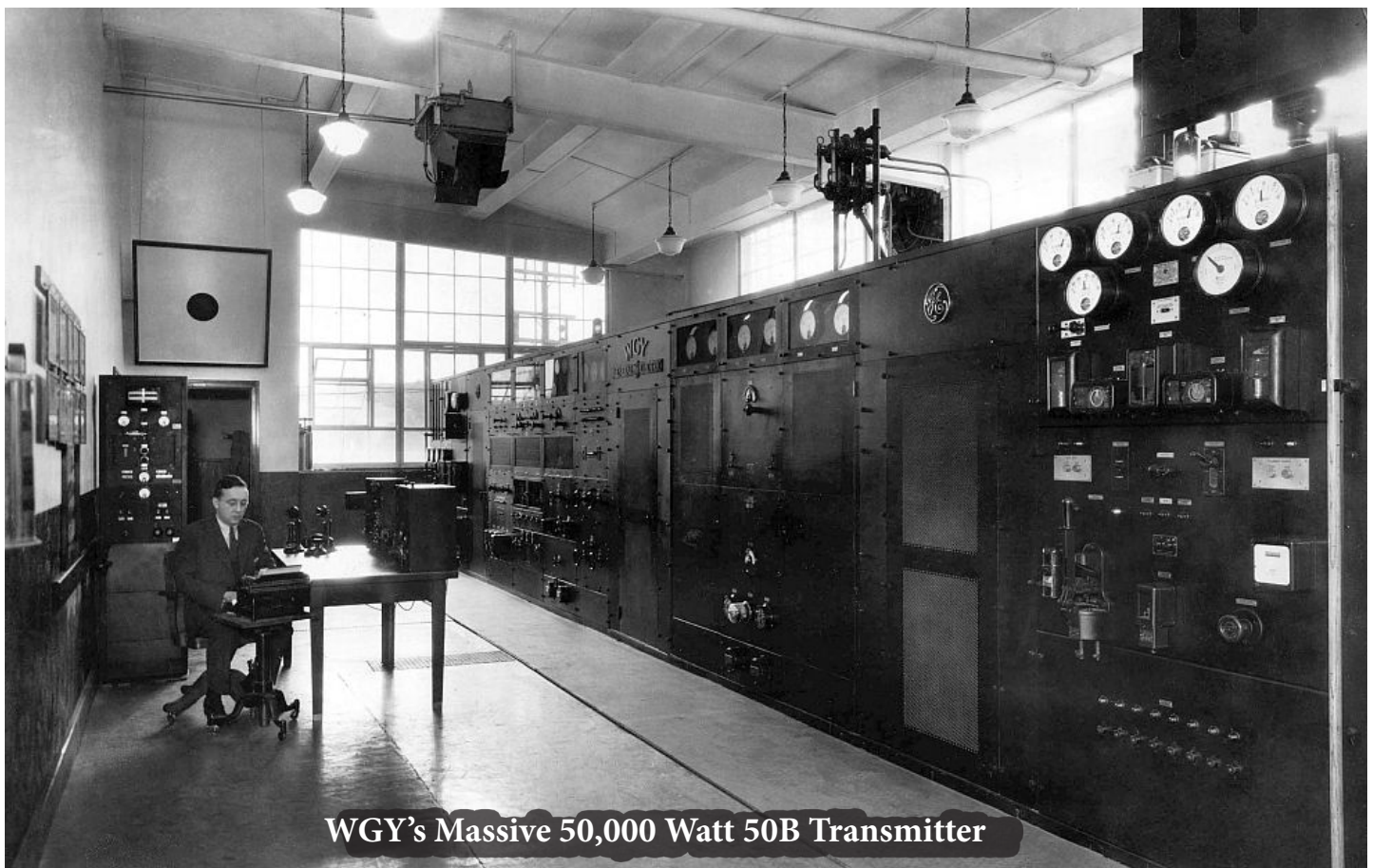
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Capital Region Was Home to Radio Pioneers...

Reception reports from listeners were highly valued during these years of developing technology, and the engineers determined that the station was being received at a distance of 500-600 miles with the same quality as most stations were heard at 50 miles.

More testing followed, with transmissions taking place during early morning hours. By October 3, WGY was permitted 50 kW operation on Saturdays and Sundays, and then after several months with no significant interference complaints, authorization was given to operate at 50 kW full time on May 8, 1926.

In 1928, GE started accepting outside orders for its 100 kW UV-862 tubes. This imposing device was a copper-and-glass cylinder measuring five feet in length and six inches in diameter, costing over \$1,000 each in 1930's dollars (\$16,000 today). Both it and the 20 kW UV-207 tube were manufactured in substantial quantities, becoming the principal higher power tube types used in the U.S. through the end of World War II.



WGY's Massive 50,000 Watt 50B Transmitter

As a next step, G.E. finalized the design of a commercial 50-kW transmitter, the popular 50B. This giant rig amplified the signals from a crystal-controlled oscillator to the 5 kW level, where the program modulation was applied. The resulting signal was then further boosted to the 50 kW level using two UV-862 tubes in its final amplifier. Its high plate voltage was rectified by a bank of G.E. mercury-vapor tubes, while other operating voltages came from motor-generators and batteries. Most of the prestigious clear-channel stations in the U.S. would adopt this transmitter after the first was installed at WGY. And many of these rigs remained on the air into the 1950's.

And still, the quest for even higher power continued as multiple UV-862 tubes were being paralleled for still more kilowatts. WGY aired tests at 100 kW in 1927, 150 kW in 1928, and 200 kW in 1930. In 1928, WGY applied to the Federal Radio Commission for authority to broadcast at 150,000 watts, but the application was denied.

- continued on page 12 -

Capital Region Was Home to Radio Pioneers...

Nonetheless, the high-power technologies developed for those tests found a home when RCA received an order to build a 500-kW transmitter for WLW in Cincinnati – the most powerful broadcast transmitter ever made to that time. With its high-power RF experience, G.E. was contracted to build the RF section, and Westinghouse was assigned the modulator. G.E.'s RF design consisted of three independent 166 kW Class "A" power amplifiers connected in series to feed the antenna. This "monster transmitter" operated reliably at WLW from 1934 until 1939, when political pressure from other broadcasters persuaded the FCC to rescind WLW's super-power experimental authority.

Two More Stations --

In 1923, the companies of the "Radio Group" -- GE, Westinghouse and RCA -- agreed that each company would operate three high power stations in different regions of the United States. Together, these stations would provide coast-to-coast coverage and stimulate the sale of radio sets. The group agreed that the stations would offer listeners the best possible audio quality and programming. Westinghouse was already operating its three stations--KDKA in Pittsburgh, WBZ in Springfield, Massachusetts, and KYW in Chicago. RCA was operating WJZ in New York and would soon open WRC in Washington, D.C. General Electric had only WGY, and so it took responsibility for opening two more stations to serve the Western half of the continental United States. Both new stations would be modeled after WGY.

G.E.'s director of broadcasting, Martin P. Rice, and its engineer in charge of technical operations Harry Sadenwater, took a tour of several Western cities during February of 1923 to select a location for the two stations. Eventually Denver and Oakland were ultimately chosen.

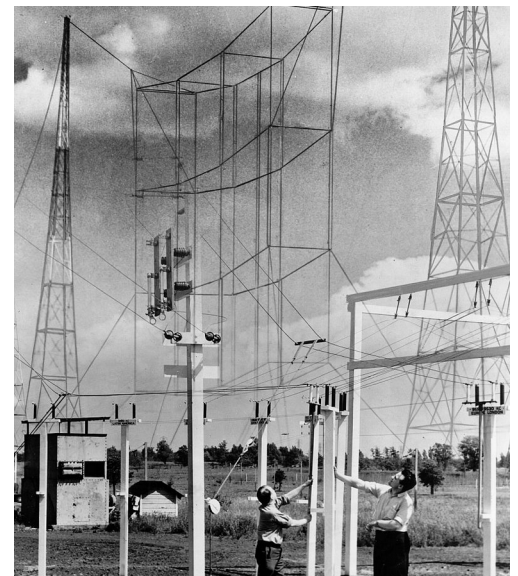
The first Western station was KGO in Oakland, California which took to the air January 8, 1924 with 1,000 watts on 312 meters (960 kHz). The 1,000 watt transmitter ran with water cooled G.E. tubes, using high level plate modulation of the intermediate high power free-running oscillator followed by a final linear amplifier. Motor generators provided all plate and filament voltages. Two operators were continuously on duty at the transmitter, responsible for keeping the oscillator on frequency (in the days before crystal control), and keeping the modulation within an acceptable range.

General Electric's third station was KOA in Denver, which went on the air Monday, December 15 1924. Much like KGO, it also went on the air with 1,000 watts at 930 kHz

Breakup of the Radio Group --

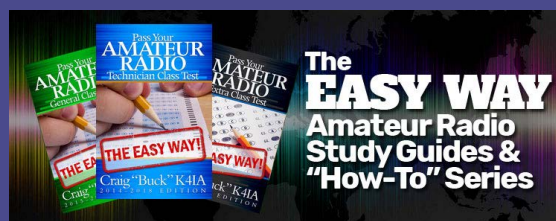
For most of commercial broadcasting's first decade, the industry and its technology were controlled in large part by the big corporations that formed the "Radio Group" -- General Electric, Westinghouse and RCA -- which was itself owned in large part by the two companies -- and to some extent AT&T. These companies controlled the biggest broadcasting stations and NBC's Red and Blue Networks. They also controlled the most important radio patents, which gave them a monopoly on the design and manufacture of radio transmitters, receivers and vacuum tubes. It was impossible for others to compete effectively against "the octopus". Finally, in May 1930, the U.S. Department of Justice brought an anti-trust suit against the four companies. The deck was about to be re-shuffled.

After more than two years of negotiations between the government and the companies, a consent decree was decided upon that resulted in General Electric and Westinghouse divesting themselves of all interest in RCA and NBC. The companies would continue to own their stations, but NBC would operate them. Shortly thereafter, G.E. would sell KGO and KOA to NBC, leaving them with WGY as their only company-owned broadcast station. General Electric, the giant electrical conglomerate, would go back to its core business of power generation and transmission, and plow new ground in both heavy industry and consumer products. But it left behind a legacy in the form of three of the country's most important AM broadcast stations. And it would continue to make advancements in radio on shortwave and in broadcast transmitter design.



GE also operated two shortwave stations from Schenectady, WGEA and WGEO. They operated with as much as 100,000 watts using curtain array antennas in the Schenectady suburb of Rotterdam. Today only the WGY transmitter remains on the site.

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CALENDAR

November 1, 2025 @ 10 am - Club Week, Free Pancake Breakfast and On Air Contact Event. RSVP to Egararadio@gmail.com.

November 13, 2025 @ 7 pm - Regular Monthly Club Meeting, Search & Rescue Building

Pro Tip: Time Out Your Radio

Nothing is more annoying then someone tying up a frequency because their PTT microphone is stuck on. One example is when someone accidentally sits on their handheld mic while driving or it's wedged on the seat.

A badly frayed mic cord can also short the PTT wire... and in the case of a desk mic w/ PTT bar, a book or other object can inadvertently be set on it causing the transmitter to key.

Not only can a stuck mic cause harmful interference to a system, especially during an emergency event, but when your transmitter is keyed, the mic is "HOT" -- transmitting any audio it hears.

Just about every modern transceiver and HT includes a programmable "Transmitter Time Out" setting. The purpose is to prevent a "stuck mic" from tying up a repeater system or simplex frequency and limit how long a private conversation will be heard.

When the timer times out, the transmitter will un-key. The factory default setting on most transmitter time out timers is disabled. A few are set at 5 minutes, which is way too much time. It is highly recommended that hams activate the time out timers on all their rigs and set them to time out (un-key the transmitter) at no more than two minutes. One minute might even be better.

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

- Two (2) Baofeng UV5-R HTs, with external microphones, charging cradles and accessories. Asking \$50 for both with proceeds going to support USS Slater.

Contact Steve @ ssyrotyn@nycap.rr.com

- Kenwood TS-690S Transceiver, 160-6 meters, with user and service manuals. Includes microphone. Runs on 12 volt PS. Great radio in excellent condition and ready to go. \$525.

Contact Bryan @ W2RBJ@outlook.com

- HyGain 2m Beam VB-28FM. 8 element, 12.5 ft long, 3 ft wide element - \$50
- HyGain 6m Beam VB-64DX. 4 element, 11 ft 9 in long, 9.5 ft wide

Contact: John C Fontana, NO2N
518-522-7961

- Kenwood TS-450S Transceiver, PS-53 Power Supply, and Hand Mic, Antenna Rotor and Vintage Motorola TN6006A speaker. Asking \$650.00

Contact: JSchabinger768@gmail.com

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