

Sidebands

The Newsletter of the EAST GREENBUSH AMATEUR RADIO ASSOCIATION



www.egara.club

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Coming to the Rescue with RCSAR

Every job and hobby has certain tools it relies on. For Amateur Radio, it's things like antennas, tuners and transceivers. For Search and Rescue teams, the tools are living and breathing -- search dogs. And EGARA members got a chance at February's club meeting to learn the important role these canines play during a presentation by the Rensselaer County Search and Rescue team.

"We search for lost or missing people any time day or night, rain or shine," said RCSAR member Jim Pendolino, KC2HRO, who also belongs to EGARA. "Our team is trained in many skills, including Search Tactics, Wilderness Survival, Cliff Rescue, First Aid, Man Tracking, Map and Compass, and so forth. And, our dogs are highly trained in trailing and tracking."

The team relies on different types of dogs, depending on their needs. Trail dogs are trained to follow a specific scent and are used when a piece of clothing or other item contains the scent of a missing or lost person. Air scent dogs are used when the search is underway for more than one person, or if a sample scent is not available. Meanwhile, Cadaver dogs are only used when the search is underway for someone who is believed to be deceased.

"Bloodhounds have the ability to smell scents 40 times better than humans can," said Pendolino. Following the membership meeting, he gave a tracking demonstration using "Ginny," one of the team's Bloodhounds. With his daughter, Gina, hiding in the shadows of a nearby storage building, Ginny quickly followed her trail to lead Jim to his daughter. "We once tracked down a woman with Alzheimer's who had walked from Massachusetts to Pownal, Vermont."

In addition to canines, RCSAR also uses sophisticated computer tracking software and GPS units that allow search teams to record the ground they've been over. Communications take place using a dedicated statewide EMS channel of 155.220 mhz.



Members of the RCSAR team with their tracking Bloodhound "Ginny"

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According to Pendolino, the team's dogs usually serve for 10 to 12 years, and the group is constantly on the lookout for young pups that can be trained to take over as their older dogs retire.

RCSAR began in the early 1970s and has become a valuable resource for the region's police and fire departments, serving an area roughly 120 from Albany. Its work has been recognized by the Governor of Massachusetts and its State Police, the New York State Legislature, and the United States Congress. It is an all-volunteer private 501 3c charity organization receiving no direct government funding and relying on donations for support.

More information can be found on the RCSAR website at: <https://rcsar.com>.

Next EGARA Meeting - March 13th @ 7 pm - Basic Test Tools for Your Shack

Building a Better Shack

By Bryan Jackson, W2RBJ

For many of us, I'm sure our shacks can become a hodgepodge of gear and wiring as we add pieces to it over time. After several years of adding equipment, coax, and accessories, I found myself facing something that looked like it was created by Rube Goldberg (for you younger readers, Google it). Clearly, it was time to do something.

The centerpiece of my original setup was an old desk that was sitting in the basement, where my shack is located. In the beginning it held my Kenwood TS-690 transceiver, a small power supply and an autotuner. Desiring more power, I later added an Ameritron 811H power amplifier and a heavy duty TenTec manual tuner to handle the extra RF. Then I found a nice Astron power supply to better provide for my DC power needs. But, with no place on the desk to put it, I added a shelf above. Soon after, I added a large RF/SWR meter, a clock, speakers and a desk mike. The final straw was the addition of a new Yaesu FT-DX3000 rig.



Ye Old Shack

Being stuck inside as the cold winds of January blew, I decided now was the time to fix my cluttered mess. My first step was to figure out a nice orderly design to accommodate all the gear I had accumulated. I considered building something of my own, but quickly ruled that out given the time involved and my less than adequate carpentry skills. Instead, I turned to the Internet for some ideas. Within a short period of time I found a piece of furniture that seemed to fit my needs exactly -- a Studio RTA Producer Station. Although designed as an audio work station for musicians, the layout appeared to also be perfect for my requirements, including built-in 19 inch rack rails. Better yet, the unit was on sale for \$100 off the \$499 list price and offered free shipping to boot. I took a deep breath and ordered it. Of course, I later saw it on sale for \$379 with free shipping. Such is life.

A week or so later, a truck pulled up and the driver unloaded a pallet with two large boxes on it. I made space in the garage and then called my son for a hand getting the various pieces down to the basement where I could assemble it. In the meantime, I took the opportunity to clean out and reorganize the basement -- another long overdue project. Now that I had room to work, I began building my new shack. The RTA unit took roughly four hours to put together. I then spent another couple of days positioning my gear and figuring out my wiring and coax runs. I was especially pleased that the 19 inch rack finally allowed me to mount the Astron power supply the way it was meant to be.

Features that RTA thoughtfully included are access pass-throughs and a wiring trough on the backside of the unit, resulting in hidden wiring and a clean look from the front (although the back still looked a bit like spaghetti junction when I was done). To consolidate AC wiring, I mounted surge suppressor power strips to the rear as well. And, because the desk is built with a solid metal frame, I also used it as the common grounding point for all of my equipment, with the frame then attached by heavy copper cable to my external earth ground.



Ye New Shack

Finally, because the entire desk has wheels on the underside, it was easy for me to move it into place once I was finished installing my gear. This mobility also makes it super easy to access the rear when I need to make any modifications or additions.

The only addition I made to the base unit was to add a 19 inch locking rack drawer below the power supply, since I had plenty of room to do so. Meanwhile, the old desk was re-purposed to be a work bench of sorts.

I'm pretty happy with my new shack and pleased that I was able to do it for a reasonable cost. My wife's even happier because the basement is now cleaned up. A win-win!

Museum Spotlights Mics and More

By Ken Deutsch

One visitor to the Mic Museum lay down on the floor and said to owner Bob Paquette: "I died and went to heaven!"

Anyone who appreciates radio's history would feel overwhelmed staring at more than 1,000 microphones that date back to the late 1800s. Paquette began his impressive collection in 1950, but the 83-year-old didn't put it on display until 1970. Along the way, he also picked up some mic enclosures, transformers, preamps, test equipment, spec sheets and related paraphernalia. Other mic-related exhibits include patent applications, catalogs, broadcast periodicals, technical papers and a few transmitters for good measure.



The collection, arranged chronologically, resides at Paquette's business, Select Sound Service in Milwaukee. Paquette stands next to a WLW mike used when the station broadcast with 500,000 watts.

THE ACID TEST

Paquette has learned a thing or two over the years.

"One of the very early mics was called the 'liquid transmitter,' and it was made by the company later known as AT&T," says Paquette. "The thing you talked into was a long funnel on a little structure that sat on a base. There was a pin hanging down into a cup of acid and water and, when you spoke, it agitated the pin up and down. So that is what they used in the late 1800s."

According to Paquette, microphones became more practical between 1920 and 1930, as radio found its way into homes, increasing demand for a device to pick up and amplify human speech. Behind him in the picture above is a shelf full of microphones that once found their homes at radio stations. Paquette loves to talk about his mics.

"At that time, there were about 80 companies that made microphones of one type or another," he said. "Everyone was building them in their basements, but of course a lot of these companies disappeared. The biggest early names were Shure, Turner, Electro-Voice, RCA and Western Electric."

In pictures of radio studios from the roaring '20s, one would likely see the "candlestick" microphone, which was based on the telephone model of the day. There was no "on" or "off" switch. When you hung up the receiver, the device was no longer broadcasting. When it was off the hook, the talent was on the air. Only later was a "press-to-talk" feature added.

"All mics were of a carbon design at first," says Paquette. "Radio stations and the first recording studios used the same models, which were all omnidirectional. Then Western Electric came out with condenser mics, designed primarily for movie studios. The first dynamic mics were available for radio around 1931, and people liked them because they didn't need a power supply. You could buy a little three-tube preamp and when the station had a remote broadcast, the engineer would run the audio through a mixer to a phone line to get the signal back to the station."

In the early 1900s, the general population was not familiar with the principles of electricity, other than what could be read about prisoners being electrocuted in various penitentiaries. Thus, when confronted with a microphone with a wire hanging off of it, the average civilian might head for the hills. This perception would change with time.

A more serious problem lay in that the transmitting gear was fragile, and there was no such thing as compression on the mics. An over-enthusiastic announcer could yell into the mic, blow the tubes and kick the station off the air.

"By the Big Band era of the 1930s, stations used double-button carbon mics," says Paquette. "They were about two to three inches in diameter and an inch and a half from front to back. The pick-up was spring-loaded within the housing."

America joined World War II in 1941 and by that time, RCA ribbon mics were available. The physics involved a magnet coupled to a metal frame with a space in the middle for the ribbon to move, providing the modulation.

Amateur Radio (illegally) Aiding Yacht Racers

By Dan Romanchik, KB6NU

The Golden Globe Race (<https://goldengloberace.com>) is a 30,000 mile, non-stop solo yacht race to celebrate Sir Robin Knox-Johnston's historic 1968/9 world first solo non-stop circumnavigation of the world. There are 18 sailors in the race, which started on July 1, 2018 from Les Sables-D'Olonne, France.

Amateur radio is at the heart of the latest controversy surrounding the race. Scuttlebutt Sailing News reported the following on January 21, 2019, the 205th day of the race:

"Sailors have been making use of the Amateur Radio net for decades, and while National telecommunication authorities have often turned a deaf ear to unlicensed operators using made-up call signs while at sea, warnings from a National regulator to Golden Globe Race skippers has created intrigue into an exciting finale for race leaders.

"Modern navigation and routing tools are restricted from use in the 2018-19 contest, limiting GGR skippers to the type of equipment available for the inaugural non-stop round the world race in 1968-69. That includes Amateur Radio. The skippers have been using this free communication system to gain weather forecasts and maintain contact with their teams, which is allowed under the Race Rules. However, it is the responsibility of each skipper to ensure that they abide by National and International regulations which Jean-Luc Van Den Heede and Mark Slats, in first and second in the race, have not been doing. [Author's note: neither Van den Heede or Slats have valid amateur radio licenses]

"Said the warning, 'You use an amateur callsign and are making connections with amateur radio operators. The call sign letters are not registered, and thus illegal. I ask you to stop. If you have a legal amateur call sign then I urge you to present it.'"

As a result of this warning, Slats is considering dropping out of the race, even though the race is nearly complete. Yachting Monthly reported:

"Mark Slats, who is less than 50 miles from Golden Globe Race leader Jean-Luc Van Den Heede, has announced he is thinking about retiring from the race after being banned from broadcasting on the Ham Radio Net. Race organisers said the Dutch skipper does not have the required licence, and has been warned by the Dutch authorities to stop broadcasting, which has left him unable to communicate with his shore team.

"Under the rules of the race, all of the entrants are able to use this free communication system to gain weather forecasts and maintain contact with their teams, but, it is the responsibility of each skipper to ensure that they abide by national and international regulations."

It's not only the yachters that are flouting the rules, it's the amateur radio operators who are communicating with them. According to Yachting Monthly, OFCOM, the UK regulator issued the following warning: "Fair warning both to unregistered GGR skippers and to legitimate Ham radio operators communicating with them. In Britain, the Ham Radio net is controlled by OFCOM, which recently revoked more than 500 licenses for non-compliance. This includes communicating with unregistered Ham radio operators. The maximum penalty is 6 months in prison, a £5,000 fine and loss of their licence."

This is a fascinating story, and I wish that I'd found out about this sooner. It would be interesting to listen in on some of these communications. One question I have is why these guys failed to obtain a valid amateur radio license? The Golden Globe Radio website notes, "[The race] will be sailed under the auspices of the Royal Nomuka Yacht Club in the Kingdom of Tonga. His Royal Highness, Crown Prince Tupouto'a Ulukalala is Patron of the Race." They probably could have issued valid amateur radio licenses to all the racers.

If any of you have heard the communications or know any more about the technical details, I'd love to hear from you.

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Dan Romanchik, KB6NU, is the author of the KB6NU amateur radio blog (KB6NU.Com), the "No Nonsense" amateur radio license study guides (KB6NU.Com/study-guides/), and one of the hosts of the No Nonsense Amateur Radio Podcast (NoNonsenseAmateurRadio.Com). His wife sometimes thinks that amateur radio has become too much of a habit for him.

Mike Museum...

Finally microphones could be bidirectional, which helped with noise cancellation. Instead of picking up audio on all sides of the microphone, these were more selective, allowing audio only from front and back.

One of the first widely used models was the RCA type 44. Later, that company developed the 77 series that culminated in the 77 DX multi-pattern model, still sought after today. The users of these treasures could select an omni-directional, bi-directional (a figure eight pattern) or unidirectional pattern.

Displays include German-made microphones, including what is probably a very rare original Telefunken Ela M301. Various other contextual displays throughout the museum include pictures of FDR doing his “fireside chats,” and of Dwight Eisenhower, among others.

By the 1960s, radio stations began diversifying their programming into more specialized formats such as middle-of-the-road, top 40, country and easy listening. It became evident that different formats might be enhanced with certain microphones. While the 77 D might be perfect for a soft-spoken announcer, a screaming DJ might need something more rugged, such as a dynamic mic. Electro-Voice made a very durable model, the 664, which was heavy and shaped like a thick cigar. The Shure SM5, nicknamed the “Fat Albert,” was a cardioid design that could stand up to loud levels, as could the SM7, a refinement on the earlier design.

Neumann was, and still is, a German company known for its high-quality condenser microphones. In 1949, it released the U 47, later supplanted by other models such as the U 87. “I have a pair of U 47s,” said Paquette. “I was offered \$15,000 for them, but I’m not going to sell.”

SETTING THE TONE

Looking around the museum, you can’t miss the dozens of call letters crowning some mics, stamped or painted on others — WLW, WOR, WABC, WGN, WLS, WTMJ, KWRT, WNJR, WCLO, KYUM, WLDB, WISN, WPAY, WMAQ, KFZ, WRNY, etc. — and numerous iterations of the major radio broadcasters, NBC and CBS. That doesn’t even count the number of loose flags and other station memorabilia such as a set of NBC tone chimes.

Paquette says, “You know, in the early days you could pick your call letters to suit the station. WLS stood for ‘World’s Largest Store’ and WGN stood for ‘World’s Greatest Newspaper.’ I have those mics, and even one from the Moody Bible Institute, which was WMBI. We also have a local mic here from WTMJ, which stood for ‘The Milwaukee Journal.’”

Perhaps the queen of the collection is an enormous diva of a microphone apparatus from Powel Crosley’s Cincinnati-based monster 500 kW station, WLW. In its prime, it could be heard across almost half of the 48 contiguous states. That microphone was one of the instruments bringing entertainment throughout dozens of states.

He then points to two windows in the front, “Inside, there is an early on-the-air light. They’d tell the announcer to go out by the mic and prepare, and the bottom window would light up and say, ‘PREPARE.’ Then, when it was time, the upper window said ‘BROADCAST.’ Then he knew it was time to talk.”

So how did Paquette come across all of this history? “It just happened over 53 years of collecting,” he replies, sheepishly. Much of it was just luck and being in the right place at the right time. “I put this collection together over 50 years of collecting,” he says.



The collection includes early mikes used by WGY and KDKA, among many other pioneering stations

EGARA February Meeting Minutes

- The February meeting of the EGARA was called to order at 7:05 PM by Treasurer Bryan Jackson, W2RBJ. The Treasurer's report was presented and approved by the membership. Monthly expenses include insurance premiums and web site hosting. Dues were accepted, and can also be paid online using Paypal. A five-year renewal option is being considered. ARRL memberships are being processed through the club and EGARA receives a small stipend for handling paperwork. Attendees are reminded to sign the attendance roster to receive credit for rewards points.
 - Tickets were drawn and prizes awarded in the monthly raffle, including a variety of tools, and an ARRL tote bag.
 - New member Fred Carroll, AJ4CN was recognized and welcomed to the club.
 - The April meeting features annual elections of officers. Anyone interested in running for a position is encouraged to self nominate and notify club Secretary Steve VanSickle. Also, we will be finalizing plans for the annual hamfest, and plans call for a Yaesu FT-891 HF transceiver to be the grand prize.
 - The Hoosick ARC is seeking an alliance with EGARA to support various activities. An exploratory meeting is planned.
 - Dave Smith, WA2WAP donated a laptop computer for use at the club's Field Day. The annual hamfest list from Tony Pazzola, W2BEJ can be found on line and will be added to the EGARA website.
 - The Race for Literacy is May 5th and EGARA will be providing radio communications. Details will follow.
 - After the formal meeting was concluded at 7:35, Jim Pendolino, KC2HRO led a presentation about the Rensselaer County Search and Rescue. The discussion was lively and concluded with a tour of the RCSAR mobile command post and a meeting with the bloodhounds. (Additional details will be found in this issue of Sidebands.)
 - The meeting was adjourned at 9 PM. As customary, refreshments of coffee, soda, and pizza;
- de Steve VanSickle, Secretary

New Dues Options Give Multi-Year Discounts

EGARA members can now save money on their dues when they take advantage of multi-year discounts.

One year memberships remain \$15 for an individual and \$25 for a family --
but new two and five renewal options offer the following savings:

Two years: Individual \$29 (save \$1) and Family \$48 (save \$2)
Five years: Individual \$70 (save \$5) and Family \$115 (save \$10)

On-line payment at www.EGARA.club/dues is convenient, quick, safe and convenient!

She's Having a Hot Time

Using "stock" photography in publications and websites is a very common practice. But unless you're paying attention, it's not always the best choice to illustrate a story.

The photo at the right is a perfect example. Unless she has asbestos for skin, she'll likely have some first degree burns by the time she's done with this soldering job. But at least she's wearing eye protection.

Oh yeah, don't try this at home.



On the Beam

News & Notes

Podcast Teaches Old Tricks to New Hams

For those just getting started on their Amateur Radio journey, ARRL is launching a new podcast aimed at answering your questions, providing support and encouragement for newcomers to get the most out of the hobby. The podcast “So Now What?” will launch on Thursday, March 7th, and new episodes will be posted every other Thursday. They will also be archived on the ARRL website.



Co-hosting “So Now What?” will be ARRL Communications Content Producer Michelle Patnode, W3MVP, and ARRL Station Manager Joe Carcia, NJ1Q. Presented as a lively conversation, with Patnode representing newer hams and Carcia the veteran operators, the podcast will explore questions that newer hams may have and the issues that keep participants from staying active in the hobby. Some episodes will feature guests to answer questions on specific topic areas.

“No other podcast is really aimed at this segment of the Amateur Radio community... that is being underserved, that is not getting the answers to the many questions they have,” said ARRL Communications Manager David Isgur, N1RSN, who will serve as the podcast’s executive producer.

Topics to be discussed in the first several episodes include getting started, operating modes available to Technician licensees, VEC and licensing issues, sunspots and propagation, mobile operating, contesting, Amateur Radio in pop culture, and perceptions of Technician license holders.

Listeners will be able to find the “So Now What?” podcast on Apple iTunes, Blubrry, or Stitcher (free registration required, or browse the site as a guest) and through the free Stitcher app for iOS, Kindle, or Android devices.

Ham Licensing Back on Track

FCC gets back to business after government shutdown

The FCC got back to the business at hand after the federal government reopened following its longest shutdown in history. The hiatus had put the licensing process on hold, forcing new hams to wait until their calls appeared in the official FCC database. Some 425 VE exam sessions were caught in the backlog, including one conducted by EGARA in early January.

Two applicants successfully completed their tests during the club’s VE session, but they did not see final approval of their licenses until the end of January and the beginning of February. Exams processed through ARRL sanctioned VE sessions alone totaled 2,700.

Although the exam paperwork submitted by EGARA went in immediately after its VE session on January 5th, the FCC gave them a filing date of January 29th. The FCC said changes in receipt dates were made “in order to accommodate the orderly resumption of business.”

Submission of some VE sessions was also delayed at the request of the Commission to give it some breathing room as it worked through the backlog.



The History of Ham Radio: Trunk Lines

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)

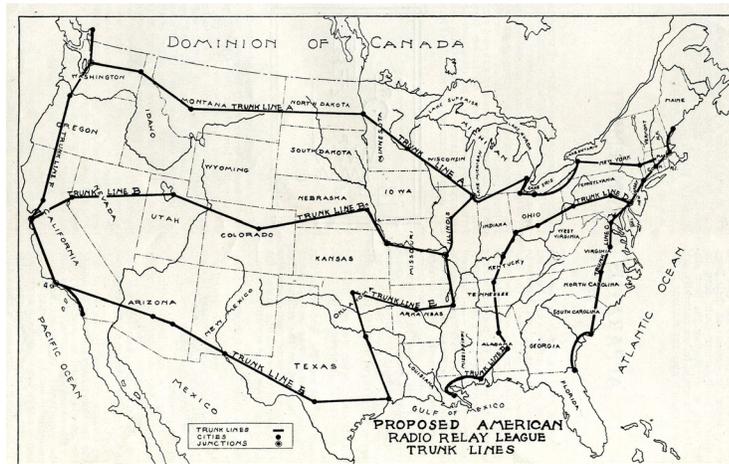
Clearly, ARRL Founder Hiram Maxim's main goal was to establish reliable relaying across the entire country. He was excited by its collaborative nature. In the third and last free issue of QST he wrote, "The co-operation of a few unknown but nevertheless kindred spirits between Portland, Maine and Portland, Oregon, by means of which the message is handed on, adds a touch to the whole scheme and makes it almost Utopian."¹ It was the primary reason for organizing the League, whose membership had just reached 1,000 in late 1915. But a great idea alone did not lead to a practical system.

The first of the blueprint items, and the only one pertaining to operating procedure, advised stations across the country to routinely announce themselves QRU (i.e., ready to receive messages) and maintain a regular schedule.

Maxim next added the concept of running regular tests. Aside from exercising the system and its parts, he hoped the tests would serve to bring timid operators out of their shells and get them to announce themselves. He believed there was a pervasive case of key fright among the members, similar to what we more recently recognize as a Novice's first-contact fear. But Maxim observed this condition even among some experienced operators. He considered it a serious obstacle to establishing a reliable system, writing,

... there are a great many amateurs who lack the nerve or whatever else it is to break in and send out a general QRU?. There is something akin to standing up before the crowd and making a speech, in sending a general call. Some people would rather take a thrashing than touch their key for the purpose. They feel that they cannot send well enough, or that they will become rattled or that something will happen in the form of a come back, which will disclose the awful fact that they cannot receive well. These people never entirely get over this feeling and many of them have station equipment which in the hands of an operator with more nerve, could do wonders. For this reason, any plan which calls for initiative on the part of all stations in a voluntary organization such as the Relay League, is bound to be only partially effective.

He further proposed establishing a network of trunk lines across the country linking major cities, which would serve to channel messages across the country over paths known to be reliable. In the eastern part of the country a trunk line ran south along the New England coast (Trunk Line C) branching first at Boston out to Chicago (A) and again at Philadelphia out to New Orleans (D) before continuing on to the Carolinas and Florida. In the western states, three lines beginning in Chicago (A), St. Louis (B) and Houston (E) extended west out to Seattle, San Francisco and Los Angeles, then were linked together along the west coast trunk line (F). Stations lying along these lines would collaborate in organizing themselves locally, with the best stations – Maxim dubbed them Star Stations—emerging over time through constant testing and reporting of results to ARRL headquarters via mail. District headquarters would be established for each trunk line and would each be responsible for developing their own piece of the system. The League would thus be a national federation of local organizations—the beginnings of the nested, hierarchical structure that eventually became the National Traffic System.



Although the trunk lines were only a suggestion, amateurs apparently latched onto the specific design Maxim had published, judging from the letters he received. Eager to establish the local headquarters for the lines and pass along responsibility for getting them organized, he suggested three to start with: in Chicago, San Francisco, and in the east either in Philadelphia or somewhere in New Jersey.

-continued on page 10-

The Mike Museum...

“When I started, it was 1950 — radio stations were trashing a lot of mics from the early days because things were improving technologically.”

As the collection grew, Paquette began to step up his acquisition methods. “I ran ads asking for pre-1940 mics. I’d also go to antique radio swap meets. I’d go to Hamfests as well. In the summers, I’d cover a 200-mile radius looking for mics. They were often found at rummage prices. Mics that are selling today for over \$1,000 could be had back then for \$25–\$30. The stations would keep buying new ones and I’d get the old ones when they were through with them.”

He adds that he has traded and sold a few mics, but is in general trying to continue building the collection, rather than giving away or selling anything.

And what of the future of the Mic Museum?

“I have offered it for sale for \$1 million, but no takers yet. I have a company here, Select Sound Service, with about 12 family members working here and 40 employees in all. There’s no one really interested in maintaining the collection. No one can give tours but me. But my sons want to keep the museum here because people come from all over the world to see it.”

With such a collection, it’s hard not to imagine that Hollywood hasn’t come calling in need of historical accuracy. Turns out, yes, but Paquette has a cautionary tale.

“I had a lot of trouble with Woody Allen,” he says. “I rented him 16 mics for a movie and he wouldn’t return them. He wanted to buy them, but I didn’t want to sell. I couldn’t get them back, so eventually I had to sell them to him. It took me eight years to find replacements.”

It’s not all glory in the mic collecting biz.

HE WROTE THE BOOK

Using his accumulated knowledge, Paquette authored “The History & Evolution of the Microphone,” a tome that weighs six pounds and comprises 840 pages in 8.5 by 11 inches format. There were just 500 copies printed, and it sells for \$100 plus \$10 shipping, available only through his company at www.sssmilwaukee.com. The first chapters detail the earliest efforts to convert acoustic energy into electrical energy, and the others guide the reader through various broadcast and non-broadcast uses of microphones and related equipment.

While this work covers primarily United States-manufactured products, important designs from international manufacturers are also included.

Other oddities one might see during the museum tour include a big horn-style speaker that was used behind the movie screen for the earliest “talkies.” There are wire recorders, tape recorders, recording lathes and a full replica of the B-17 bomber radio room, circa World War II.

Paquette owns examples of all of the above-mentioned microphones and much more, all housed in his museum. The Mic Museum is open to the public at no charge, but by appointment only. To schedule a tour in Milwaukee, call (414) 645-1672.

About the Author: Ken Deutsch still carries a Neumann TLM 127 around the house so he can practice his “radio voice.” His wife is not amused.



The collection includes much more than just mics, such as this set of NBC Network chimes

History of Amateur Radio - Trunk Lines

These were chosen because they were population centers that lay either at junctions or along more than one trunk line. One prerequisite was that each HQ should be chosen for their operator's organizational skills. Another was that they would always meet their test message schedules, or get a substitute. Stations that failed to be on the air at the right time were the biggest impediment to amateur radio relaying. Therefore the lines should operate only one night per week rather than attempt it more often at the cost of decreased reliability. The exact time of operation was left up to the discretion of each trunk line, but Maxim suggested that it should be late enough to both eliminate QRM from the little boys and to be after the time when most movies ended at theaters. But he also advocated operating at the same time all across the country in order to try to set new records—for example, to possibly complete a round-trip Chicago to Maine relay and acknowledgment in 15 to 20 minutes.

Message and acknowledgment formats should contain the calls of all the relayers so as to be able to constantly evaluate the system and detect dead ends. Finally, he asked again for help from the local amateur radio communities in figuring out who should be district HQs—ARRL HQ did not know enough about the individual stations to make that determination.

One woman stood out among the stations of the nascent relay network. Mrs. Emma Candler, 8NH (later 8ER) of Marysville, Ohio shared a station with her husband, Charles, but was by far the more active of the two.³ Trained and employed as a telegraph operator at the Marconi Company, she quickly became a proficient wireless operator when she got on the air in 1915. Early in her amateur career, tired of being referred to on the air as "OM," she one day told another amateur that she was, in fact, an "OW" and from then on was known as such to her friends. She became ARRL Central Division superintendent until after the war when a career teaching math kept her from resuming her League role.



Emma Candler, 8NH

Hams Help Keep WWV Ticking Along

WWV, the shortwave time keeping service of the National Institute of Standards and Technology, remains on the air despite the Trump administration's budget proposal last fall to silence it and its sisters, WWVB and WWVH. Congress has ignored the request, apparently realizing the importance of the service after strong protests by hams and others.

In an email to *Sidebands*, NIST officials wrote: "The NIST time and frequency broadcasts are not slated to be discontinued. NIST radio stations have full funding and are expected to be fully funded in the future."

For some eight decades, WWV has been providing accurate time signals, with several enhancements added over the years. These have included signals by WWVB that allow millions of watches, clocks and other electronic devices to be automatically adjusted to the correct time. However, WWV wasn't always a time service. It began with music and news broadcasts to show the viability of radio. For instance, on December 15, 1920 the station began assisting the Department of Agriculture in the distribution of market news to farm bureaus and agricultural organizations. A 2 kW spark transmitter was used to broadcast 500 word reports, called the Daily Market Marketgram, on 750 kHz.

Today, WWV broadcasts its time signals on 5, 10, 15 and 20 mhz from Fort Collins, Colorado. WWVH serves the Pacific region from its headquarters in Hawaii. An experimental service is on 25mhz.

To celebrate the station's 100th anniversary, a Special Event station is planned for September 28 - October 1st. The WWV Centennial Committee to mount a special event station this to the WWV site in Colorado to mark the 100th anniversary of the time and frequency standard station, the world's oldest continuously operating radio station. Dave Swartz, W0DAS, of the Northern Colorado Amateur Radio Club (NCARC) heads the committee, which is developing the plans.

February: This Month in Radio History



- March 1, 1949: First 45 rpm record issued by RCA: Texarkana Baby by Eddy Arnold / 1972: Intel introduces 8008 processor;
- March 2, 1897: Marconi granted first wireless patent;
- March 3, 1843: President Tyler signs Telegraph Appropriation Bill;
- March 4, 1910: DeForest experimental radio broadcast from Met, NY / 1925: First radio Presidential inauguration (Coolidge) / 1982 FCC allows industry to select AM stereo standard;
- March 5, 1927: Federal Radio Commission holds first meeting / 1998: Digital Radio Mondiale forms in China;
- March 7, 1876: Bell receives U.S. patent for telephone;
- March 8, 1979: Audio Compact Disc prototype is first demonstrated;
- March 10, 1876: Bell successfully transmits by telephone / 1922: "Radio Sweeping Country-Million Sets in Use" is the headline in Variety;
- March 11, 1948: Audio Engineering Society founded in New York City;
- March 12, 1933: President Franklin Roosevelt gives first radio Fireside Chat;
- March 15, 1679: Gottfried Wilhelm von Leibniz describes binary numbering;
- March 17, 1990: ARPANET ceases to exist;
- March 19, 1918: Standard Time Act establishes Standard and Daylight time in the U.S. / 1928: Amos n' Andy debuts on WMAQ, Chicago;
- March 20, 1902: Nathan Stubblefield demonstrates ship-to-shore broadcast to multiple receivers located in Washington, DC;
- March 21, 1952: Alan Freed hosts first rock concert, the Moondog Coronation Ball, at the Cleveland Arena;
- March 22, 1993: Intel intros Pentium processor;
- March 26, 1975: The first Altair 8800 personal computer ships;
- March 27, 1899: Marconi transmits across English Channel.

CALENDAR

March 13, 2019 - EGARA Membership Meeting, Masonic Temple @ 7 pm. Basic testing tools for your shack.

May 5, 2019 - Race for Literacy, Schodack State Park, communications support.

May 11, 2019 - Annual EGARA Hamfest, East Greenbush Volunteer Fire Department - 8 am to 1 pm.

May 18, 2019 - VE FCC Exam Session - East Greenbush Library, 10 am - Tech, General & Extra Exams

Pro Tip: Grounding

Before you start your next project, read through this tip on grounding. This short overview covers one of the most fundamental topics in electronics: grounding.

Electronics Signal Ground or Circuit Common

Signal ground is the current return to the power supply. Current leaves the power supply, passes through the various electronic components, and then returns to the supply. The typical symbol for signal ground is shown in Figure 1.

Chassis Ground or Earth Ground

Chassis ground is an electrical safety requirement to prevent an electrical or electronic device's chassis from delivering an electrical shock. A long copper rod is driven into the ground outside of the building, and a wire connects the metal chassis to the rod which is at the approximate 0 V potential of the earth. The symbol for earth ground is shown in Figure 2.

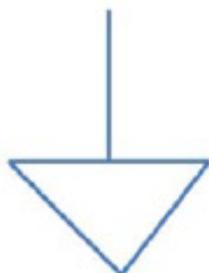


FIGURE 1: Signal ground symbol.

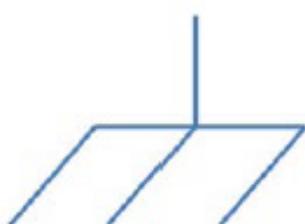


FIGURE 2: Earth ground symbol.



Want to Buy

Rohn 25 Series Tower - 40 foot crank up type
Contact Joe at Joeostering4@gmail.com

For Sale

Johnson Valiant Transmitter AM & CW - \$ 600.00
DX 60 Transmitter AM & CC With VFO - \$ 125.00
DX 35 Transmitter AM & CW With VFO - \$ 125.00
Eldico R124 Receiver - \$300.00
HQ 170 Receiver - \$250.00
Heatkit HW 2036A FM 2 Meter - \$35.00
Witson HT FM 2 Meter - \$25.00
MFJ Model 1995 Portable Antenna, 40 To 10 Meter - \$75.00

For items above, contact Tom at: KC2FCP@nycap.rr.com

Arrow Model 52-S4 - 4-Element 6 Meter Yagi antenna in good condition. \$75.00 See: <http://www.arrowantennas.com/solid/52-4s.html> for details.

MFJ Model 989C Antenna Tuner - legal limit, very little use, in immaculate condition. \$225.00 -- Originally sold for \$359.00 See: <https://www.universal-radio.com/catalog/hamtune/1332c.html>

For above, contact Steve at: svansick@nycap.rr.com

MFJ-464 Morse Code Reader/Sender - Sends and Reads 5-99 WPM, Large 2-line LCD shows send/receive messages, single or Iambic paddle or computer keyboard operation (*keyboard included*). Speaker, RFI Proof. New condition. List is \$199.99. Sell \$149.00.

Kenwood TS-690S Transceiver - Excellent condition - Covers 160 to 6 meters, all modes, 100 watts. Comes with manual, power cord, microphone. \$500.00.

For above items, contact Bryan at: W2RBJ@outlook.com

Looking to Buy, Sell or Swap?
Send your info 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.