August 2026

15th Edition

SWR Magazine 1:1

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HOW TO BUY A USED HAM RADIO

PRACTICAL GUIDE

ACCESSORIES THAT REALLY MAKE A DIFFERENCE

PEBBLE HF

THE MAGIC OF HOMEBREWING

THE EGGBEATER

THE ANTENNA THAT REVOLUTIONIZED SATELLITE COMMUNICATIONS

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Introduction

On the Cover

Sujaree “Alice” Tunksook (HS5BQT) is a female ham radio operator from Thailand with a passion for international communications and promoting amateur radio. With an active presence in the worldwide amateur radio community, Alice is recognized for her welcoming spirit on the air, her interest in DXing, and her constant support for those who share the passion for this fascinating hobby. Through her activities and online presence, she continues to strengthen the bonds of friendship that make amateur radio a truly global community.



SWR Magazine

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SWR Magazine
Connecting Passions. Inspiring Operators.
Published by the Caribbean Amateur Radio Group

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SWR Magazine
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Contact
info@swrmagazine.org
publisher@swrmagazine.org



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Amateur radio reminds us that distances exist only on maps. Every signal traveling through the air proves that curiosity, friendship, and the desire to communicate will always find a way.

DXE-3X10 SkyHawk

Efficient directional performance for HF without complications



The DX Engineering DXE-3X10 SkyHawk is a directional Yagi antenna designed for the 20, 15, and 10 meter bands, specifically aimed at HF operators looking for solid performance in DXing and contesting. Its computer-optimized design provides over 7 dBi of gain across all bands, along with an excellent front-to-back ratio that significantly improves directivity and rejection of unwanted signals.
One of its strong points is its construction: lightweight, wind-resistant, and with virtually zero torque on the mast, making it ideal for moderate tower installations without the need for complex support systems. It also uses corrosion-resistant materials and stainless steel hardware, ensuring long-term durability.

In practice, it is a "plug-and-play" antenna: it requires no fine tuning after assembly, which makes installation easier even for radio amateurs with less experience in directional antennas. In summary, the SkyHawk 3X10 is an excellent option for those who want to step up to an efficient, reliable, and relatively easy-to-install triband beam, with a very attractive balance between performance and complexity.

DX ENGINEERING

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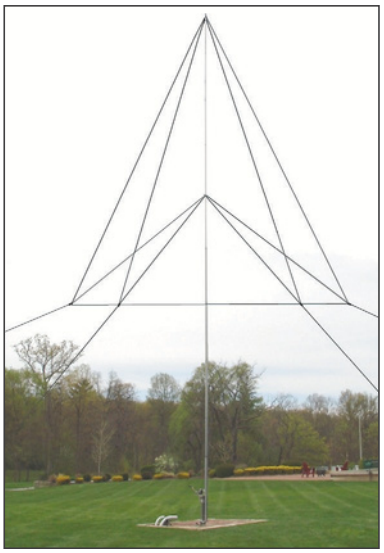


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Make the Change to a More Satisfying Ham Radio Purchasing Experience

EDITORIAL

UN VERANO DE SEÑALES, PROYECTOS Y NUEVOS HORIZONTES



Photo by: cq.sk/en/iota-contest

Contributors:

Mark Rosneck, KB0US
Lew Nyman K1AZE
Jaime Collado HI8JCT
Terry P. Rossy N2LQH
Yanira Maldonado, WP4QOE
Julio Mercado WP4PUX
David Beckler N0SAP
Abimael Padro KP4RY
Norberto Nosti EA1JAB

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When we began the SWR Magazine adventure, the true challenge was not publishing the first issue. Creating a magazine is a dream that can become a reality through enthusiasm, dedication, and countless hours of work. The real challenge was always something else: keeping it alive over time, growing issue after issue, without ever losing the essence that gave it life.

Today, more than a year later, we can look back with tremendous satisfaction. What began as an idea driven by a passion for amateur radio has grown into an international community. Every month, new readers join us, and our family of subscribers continues to expand across different countries. We have had the privilege of working with sponsors who believe in this project and provide their continued support, allowing us to move forward with the same excitement and enthusiasm we had on day one.

But above all, this magazine exists because of our contributors. Every article, every technical project, every story, every photograph, and every shared experience represents hours of dedication and a genuine desire to bring something valuable to the amateur radio community. To all of them, I extend my deepest and most sincere gratitude. You have transformed SWR Magazine into a publication rich in content, diverse in perspectives, and valuable to ham radio operators of all experience levels.

On a personal level, I must confess that SWR Magazine has transformed the way I experience amateur radio. It is no longer just about turning on a radio, building an antenna, or making a DX contact. Today, amateur radio also means sharing knowledge, discovering the stories of fellow operators, learning new techniques, and serving as a bridge that allows more people to express their ideas and showcase their projects.

One of the greatest sources of pride for this magazine has been opening its pages to those who have always had something important to say, but perhaps never found the right opportunity to share it. We firmly believe that every ham radio operator has an experience that can inspire another, a project that can spark new curiosity, or a story that deserves to be told.

That will continue to be our commitment: to provide a publication where technology, history, experimentation, education, and friendship come together in one place. We want to continue being a source of inspiration for those taking their first steps into this wonderful hobby, while also serving as a meeting point for the most experienced operators.

As long as there are people willing to experiment, build, learn, and share, SWR Magazine will have a reason to continue growing. We aspire to be much more than a magazine; we want to be a new voice for ham radio operators, a voice that connects continents, generations, and interests through one common language: the passion for radio.

Thank you for joining us on this journey throughout our first year. Thank you for reading every issue, for recommending us, for writing to us, for contributing, and for believing that amateur radio continues to have an extraordinary future.



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SWR Magazine

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Free to read. Free to share. Growing because of you.

SWR Magazine has grown through something more powerful than paid advertising: the amateur radio community. We do not invest in advertising platforms to reach new readers. Since the beginning, our growth has been organic, steady, and driven by readers, subscribers, clubs, friends, and operators who believe in sharing good content. If you enjoy SWR Magazine, please share it with another amateur radio operator, your club, your friends, or someone just discovering the hobby. Every share helps us reach new readers around the world.

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WORLD NEWS

IARU HF 2026 Brings Together Ham Radio Operators from Around the World

The 2026 IARU HF World Championship brought together thousands of ham radio operators from around the globe for one of the premier events in the world of radiosport. Individual operators and multi-op teams logged thousands of HF QSOs, demonstrating outstanding operating skills, technical expertise, and a deep understanding of HF propagation. Once again, the event showcased amateur radio's unique ability to connect communities through technology and friendly competition. Excellent Solar Cycle 25 conditions helped produce impressive long-distance DX contacts across multiple bands. The contest also reaffirmed the important role of contesting in driving innovation, sharpening operating skills, and keeping the passion for amateur radio communications alive.

Source: IARU / ARRL

16-Year-Old Ham Radio Operator Wins Major National Programming Competition



Amateur radio once again demonstrated its strong connection to education and technology through the outstanding achievement of a young ARRL member. At just 16 years old, he earned first place in the 2026 Congressional App Challenge, one of the most prestigious national programming competitions for students in the United States. The competition recognizes talented young developers for their work in software and app development—fields where the skills gained through amateur radio often play a significant role.

The ARRL highlighted that this accomplishment illustrates how hands-on experience with electronics, digital communications, programming, and problem-solving can inspire students to pursue careers in STEM (Science, Technology, Engineering, and Mathematics). The organization also noted that many hams develop expertise in software development, Software Defined Radio (SDR), satellite communications, and digital signal processing (DSP)—skills that are increasingly valuable in today's technology-driven workforce.

This recognition once again underscores amateur radio's potential as an educational platform that inspires the next generation and prepares young people for careers in engineering, computer science, and telecommunications.

Source: ARRL

WORLD NEWS

Global Activity Surge



In 2026, the international amateur radio community continues to maintain a high level of activity, with several special events taking place on the HF bands that bring operators from around the world together during the summer months. One of the most notable is the 13 Colonies Special Event, held from July 1 through July 7 in the United States, where special event stations represent the original thirteen colonies, allowing participants to make contacts and complete the traditional "Clean Sweep."

Additional commemorative and themed events are also being held to celebrate important milestones in telecommunications history, along with radio sport and cultural activities that continue to expand global participation.

Together, these operations highlight the vitality of modern amateur radio, strengthening the international ham community and promoting interaction among operators through events that combine history, culture, and communications.

ARISS Connects Africa with the International Space Station

A historic amateur radio contact allowed students and science enthusiasts from 38 African countries to communicate with NASA astronaut Nichole Ayers aboard the International Space Station (ISS). The event, conducted on April 18, 2025, through the ARISS (Amateur Radio on the International Space Station) program, brought together more than 300 participants and demonstrated the power of amateur radio as an educational tool. The initiative combined technology, space communications, and citizen science to inspire new generations in STEM fields. This achievement further highlights the role of amateur radio as a bridge between Earth and space, bringing space exploration closer to students around the world.

Source: ARISS / arXiv





When Willie Tanner

REMINDED ME WHY I LOVE HAM RADIO

By: Jose M. Candelaria NP4ET

There are memories that remain asleep for decades until, suddenly, an ordinary scene brings them back to life. That is exactly what happened to me during this summer vacation. Among so many modern entertainment options available today, I decided to return to an old friend from my childhood: ALF, that unforgettable television series from the 1980s that brought so many laughs to our homes.

When I was a child, my attention was completely focused on that lovable alien from Melmac and the hilarious adventures he created inside the Tanner family's home. However, watching it again through the eyes of an adult and especially through the eyes of a ham radio operator, I discovered something that, as a child, I had never truly appreciated in its full significance.

Willie Tanner Was a Ham Radio Operator

Suddenly, I realized that many of the scenes in the series took place precisely in his radio shack. There were his transceivers, microphones, instruments, and that familiar atmosphere known by anyone who has ever spent hours in front of a rig, listening through the noise, waiting for a new station to come through.
In one episode, Willie manages to make a long-distance contact using his radio station. While he is enthusiastically talking, ALF, with that characteristic innocence, asks him something that many people today would probably wonder: "Don't you know there are telephones?"

Willie's answer made me pause the episode for a moment. With complete naturalness, he replied that yes, he knew about telephones, but that it was much more exciting to communicate using equipment that he had installed, configured, and learned to operate through his own effort and knowledge.

I must confess that this simple conversation, written more than forty years ago for a television series, made me reflect deeply. Because I realized that Willie was not talking only about radio. He was talking about the true spirit of ham radio.





Much More Than Making Contacts

We live in an extraordinary era for our hobby. Today, we have SDR rigs capable of displaying several megahertz of spectrum on a screen. We have incredible digital filters, modes like FT8 that allow us to work signals that are almost impossible to hear, digital systems such as DMR, C4FM, and D-STAR, Internet-linked communications, EchoLink, satellites, remote stations, and applications that allow us to talk with hams on the other side of the world from a smartphone.
All of this is amazing. It would be unreasonable to reject technological progress. Amateur radio has always evolved alongside technology. But while watching that ALF scene, I could not help but ask myself a question: Are we still experimenting as much as we used to?

There was a time when much of a ham operator's pride did not come only from the DX contacts they were able to make. The pride came from how they built the path that made those contacts possible. Many operators assembled their own Heathkit gear piece by piece on a workbench. Others built transmitters from the ground up. They built receivers. They wound their own coils. They calculated filters. They built power supplies. They designed linear amplifiers. They raised towers. They soldered connectors. They built antennas using nothing more than wire, aluminum tubing, imagination, and countless hours of trial and error.
Every contact carried behind it a story of experimentation.

The True Meaning of "Doing Radio"

I remember my own projects. The hours spent adjusting an antenna. The afternoons trying to eliminate interference. The nights troubleshooting a circuit because something was not working the way it should. The mistakes. The frustrations. The small victories when everything finally started to work. None of those experiences could be bought at a store. They had to be earned. And that is precisely where the magic was.

Today, we can go online and, in a matter of minutes, purchase an amazing transceiver, a perfectly tuned commercial antenna, a ready-to-connect amplifier, and even software that practically does all the work for us. There is absolutely nothing wrong with that. I enjoy modern technology myself.
But I also believe that if we stop experimenting, building, and learning with our own hands, we risk losing a very important part of what has always set our hobby apart. Because amateur radio was never just about pressing the PTT button. Amateur radio has always been about understanding why that button works.



The Joy of Building

I still remember the satisfaction of finishing a homebuilt antenna. It did not matter whether it was a simple dipole, a vertical, or a much more complex project. When I finally heard a station coming through with a strong signal, I felt something very different from the satisfaction of simply purchasing a finished product.



It was a feeling that is difficult to describe. It was as if a small part of that signal was also carrying the effort, dedication, and time invested in building the system.

The same thing happens when you design a circuit, calibrate an amplifier, adjust an antenna tuner, or bring an old piece of equipment back to life after years of sitting silent. Those moments do not appear on any DXCC award. But they are probably the ones that remain the longest in our memories.

Are We Losing That Spirit?

I do not believe the answer is a simple yes or no. There are still thousands of extraordinary ham radio operators who design antennas, develop software, experiment with microwaves, satellites, SDR, propagation, artificial intelligence applied to radio, and many other fascinating areas. Experimentation is still very much alive.
What has perhaps changed is that today it is much easier to enter the hobby without having to build anything at all. And that has its advantages. It allows more people to enjoy amateur radio.
But it also presents us with a challenge: showing new generations that amateur radio can be so much more than simply buying the best equipment available. It can become a lifelong school of electronics, physics, programming, mechanics, communications, and creativity.

What ALF Reminded Me

I never imagined that a comedy from the 1980s would end up giving me such a profound reflection. That simple response from Willie Tanner captured the very essence of our hobby. It was not about the distance of the contact. It was not about the power used. It was not about the country worked. It was about the satisfaction of achieving something through knowledge, effort, and curiosity.

That is exactly what has kept amateur radio alive for more than a century. Curiosity. The desire to experiment. The willingness to learn. The excitement of discovery.



Let's Keep Building

Technology will continue to advance. We will see even smarter radios, more sophisticated software, new digital modes, and greater automation. And all of that will be welcomed. But I hope we never stop building an antenna with our own hands. I hope we never stop opening a piece of equipment to understand how it works. I hope we never stop experimenting. I hope we never stop teaching a new ham radio operator that the greatest satisfaction is not always found in buying the best transceiver, but in understanding how a simple signal can travel thousands of miles through human ingenuity.

Perhaps that was what Willie Tanner was truly trying to say that night. And perhaps that is why, more than forty years later, that scene still carries so much meaning. Because in the end, the most memorable contacts are not always the ones that appear in our logbook. They are the ones that remind us why we fell in love with amateur radio.



Mastering AliExpress for Ham Radio Gear

Part 2: Traps, Tariffs, Coupons, and Real-World Buying Strategy

By Mark Rosneck, KB0US

Fakes, Clones, and Open Source

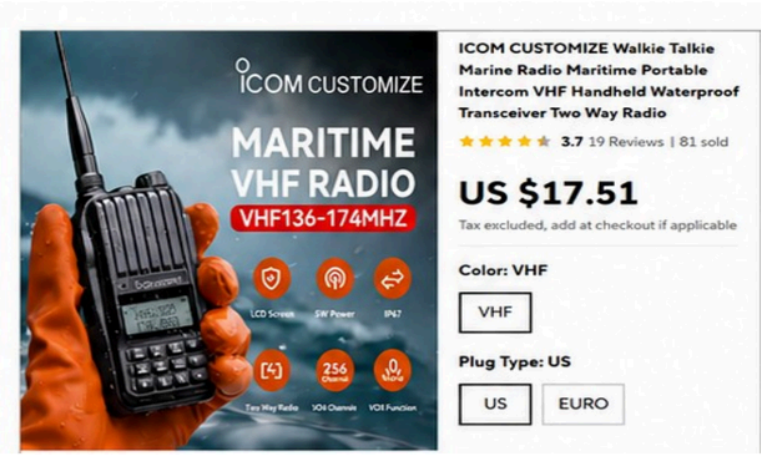
Just like on Amazon and eBay, it can be difficult to know whether a product is an illegal fake, clone, or a legitimate open-source version produced by another manufacturer. Some radios and accessories may use copied branding, questionable model names, reused or unclear certification claims, substandard parts, or misleading packaging.

That does not mean every inexpensive item is bad. Some open-source designs can be legally produced by different manufacturers and may offer excellent value. The challenge is knowing what you are really buying, who is selling it, and whether the listing clearly identifies the exact product, version, and configuration.

Reviews, number of units sold, seller history, and recent buyer feedback matter. The goal is not to avoid AliExpress completely. The goal is to avoid buying blindly.

Buyer Warning: Fakes and Clones

- Check whether brand wording looks authentic
- Verify exact model and version
- Watch for prices that seem too low
- Read recent reviews and sales history



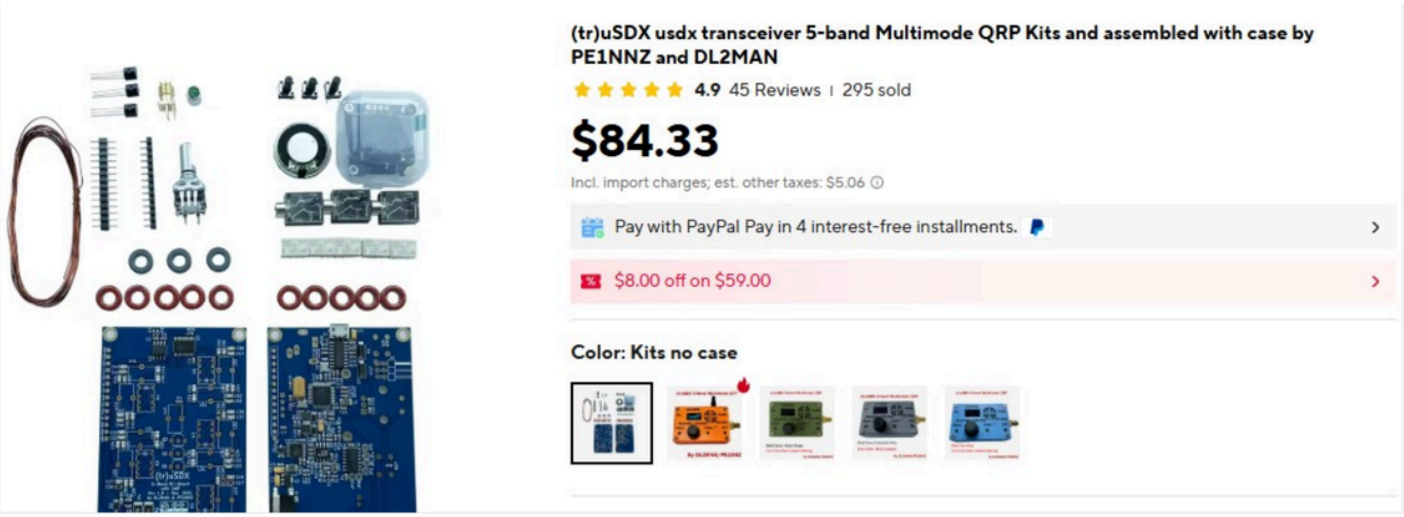
Example listing crop: brand wording, price, rating, and configuration options should all be checked before buying.

Buyer Rule: Don't buy the price. Buy the exact configuration, from the right seller, at the real final cost.

Verify model, seller, and landed cost before committing.

The “Color” Trap

AliExpress often uses the word “Color” for much more than color. A single selector may change the product from a bare kit to an assembled unit, from no case to full enclosure, or from one plug type to another.



Example listing crop: the selected “Color” option changes what the price actually describes.

What the screenshot shows

The selected option is "Kits no case." That visible price may describe a kit version, not the assembled radio shown in other thumbnails. Confirm the photo, price, option name, and package contents all match.

Before You Buy, Check This

- Is it the full radio or only the board?
- Does it include the case or enclosure?
- Is the correct plug type selected?
- Are battery, microphone, or cables included?
- Do photos, price, and description match?

Buyer Rule: Don’t buy the price. Buy the exact configuration.

On AliExpress, the selected option is part of the product description. Treat it that way.

The Real Cost of a “Cheap” Item

A low listing price can be attractive, but it is not always the final cost. On AliExpress, the amount you actually pay may change once shipping, taxes, import charges, coupons, and checkout details are included.
The smart comparison is not listing price versus listing price. It is landed cost versus landed cost.

Real Landed Cost

	Item Price: the visible number shown on the listing
+	**Shipping:** free, discounted, bundled, or added at checkout
+	**Taxes / Import Charges:** tax, VAT, customs, or import estimates
+	**Possible Risk Cost:** delays, hard returns, unclear warranty, wrong version
=	**Real Landed Cost:** actual cost after shipping, taxes, and risk

Why it matters: an item that looks cheaper at first can end up close to Amazon or eBay once shipping, taxes, and risk are included. A small savings may not justify a difficult return or an unclear warranty.

Practical check: compare the final checkout total, not the first price shown on the listing.

Smart Rule: Compare the landed cost, not just the listing price.

If the savings are small, a domestic seller may be the safer purchase.

Buy Smarter, Not Just Cheaper

Coupons, coins, and limited-time discounts can make AliExpress attractive, but they should never be the main reason to buy. A discount does not fix a bad seller, a confusing configuration, weak reviews, or a return process that may be difficult later. *The better strategy is to compare the exact item, the seller, the configuration, the landed cost, and the risk before placing the order.*

Real-World Buying Strategy

- Verify the exact configuration
- Check seller reputation
- Read recent reviews
- Compare landed cost
- Use Choice when useful
- Avoid prices that make no sense
- Save screenshots before purchase
- Choose domestic sellers when savings are small

Core idea: Every discount is secondary to verifying what you are actually buying.

Coupons and Coins

Use discounts as a bonus, not as the reason to buy. A coupon is useful only when the seller, product, configuration, and final cost already make sense.

Final Takeaway

AliExpress can be a useful tool for careful buyers. It rewards patience, comparison, and verification. The goal is not to avoid risk completely. The goal is to know which risks are worth taking.

By: SWR Editorial Team

Photos and information courtesy of: DX News.

DXpeditions

DXpeditions are much more than simple radio activations: they are a celebration of humanity's spirit of exploration. From remote islands and hard-to-reach locations, a small signal can travel thousands of miles, connecting operators from different countries and cultures, proving that radio waves remain an invisible bridge that connects the world.





01

01.

C6AYM Grand Bahama Island

Eric, K9GY, will be active from Grand Bahama Island, IOTA NA-080, from August 5 to August 10, 2026, operating under the callsign C6AYM.
Recent DX spots for C6AYM
He will operate on the 80 through 6 meter bands, including participation in the WAE DX CW Contest.



Located in the northern part of the Bahamas archipelago, Grand Bahama is the closest island to the mainland, with the coast of Florida lying only 90 kilometers from its shores.
Grand Bahama covers an area of 1,373 square kilometers, and the island's permanent population currently exceeds 50,000 residents.
Modern science considers the island's first inhabitants to have been the Siboney people, a primitive hunter-gatherer society with a Stone Age culture.
The later inhabitants of Grand Bahama were the Arawak Taíno, who arrived on the island from mainland South America. This indigenous people used dugout canoes to travel across the sea, allowing them to colonize a significant portion of the Caribbean region.



By: SWR Editorial Team

HOW TO BUY A USED HAM RADIO WITHOUT MAKING A MISTAKE

A practical guide to finding a great deal, avoiding costly mistakes, and making a smart ham radio purchase.



Golden Rule

Never buy a used ham radio without seeing it in operation. A five-minute video call can reveal more than a hundred photos ever will.

Why Buy a Used Ham Radio?

One of the great advantages of amateur radio over many other hobbies is that quality equipment can remain on the air for decades. It is not uncommon to find transceivers that are 20 or even 30 years old still performing flawlessly thanks to solid construction and proper maintenance.
Buying used can allow you to:

- Own a high-end transceiver for the price of a new entry-level rig.
- Save anywhere from 30% to 60% off the original retail price.
- Find classic radios with outstanding reputations.
- Purchase legendary models that are no longer in production.

The key, however, is to buy wisely, not impulsively.

Do Your Homework Before You Buy

Never buy a radio simply because the price looks attractive.
Before contacting the seller, take the time to research the following:

- When was the radio manufactured?
- Does it have any well-known issues or common failures?
- Are replacement parts still available?
- Can it still be serviced or repaired?
- What is its current fair market value?

A little research beforehand can save you hundreds of dollars and prevent a great deal of frustration later.

Research Common Problems

Many radios have well-documented issues that are widely known within the amateur radio community.
For example:

- LCD displays that eventually fail.
- Worn or erratic tuning encoders.
- Faulty transmit/receive relays.
- Aging crystal or IF filters.
- Electrolytic capacitors that require replacement.

Knowing these common issues will allow you to ask the seller specific, informed questions instead of relying on general descriptions like "works great."

Ask About the Radio's History

A reputable seller should have no problem answering questions such as:

- How long have you owned it?
- Are you the original owner?
- Has it ever been repaired or serviced?
- Has it ever been damaged by lightning or a power surge?
- Was it used primarily for contesting?
- Has it been kept in a smoking environment?
- Was it used in a commercial or repeater station?

The answers can tell you a great deal about how well the radio has been cared for over the years.





Be Wary of These Phrases

Certain statements should immediately raise a red flag.

- "It powers on, but I haven't tested it."
- "It should work."
- "I don't have an antenna to test it."
- "It just needs a minor adjustment."
- "I don't know much about the radio."

More often than not, what these phrases really mean is:
"Yes, it has problems."

Inspect the Photos Carefully

Pictures can often tell you far more than the seller's description.
Look closely for:

- Stripped screw heads.
- Mismatched screws.
- Dents or impact damage to the cabinet.
- Rust or oxidation.
- Corrosion.
- Signs of water or moisture damage.
- A worn or damaged display.
- Sunken or sticky buttons.
- Replacement knobs that do not match the originals.

Red Flags 🚨

- **Price far below market value.**
- **Seller avoids questions.**
- **No recent photos or videos.**
- **"It should work" or "I think it works."**
- **Missing or altered serial number.**
- **Un documented modifications.**

It is also a good idea to ask for clear photos of:

- The rear panel.
- All connectors and ports.
- The inside of the radio (if the seller is willing to remove the cover).
- The serial number label.

Request a Working Video

Today, there is no reason to purchase an expensive radio without seeing it operate first.
Ask the seller for a video showing:

- Powering on the radio.
- Receiving signals.
- Transmitting.
- Changing bands.
- Output power.
- S-meter activity.
- Menu operation.
- Audio quality.

Five minutes of video can save you from making a very expensive mistake.

Verify the Output Power

If the seller has access to a wattmeter, ask for a demonstration.
A 100-watt transceiver should deliver approximately that output level into a dummy load.
A significant difference may indicate:

- Damaged final transistors.
- Low supply voltage.
- ALC problems.
- Faults in the RF circuitry.

A radio that looks perfect on the outside may still have hidden problems, so a functional test is always worth the extra effort.

Check Every Function

Many buyers only check if the radio transmits.
That is not enough.
Test:

- CW
- SSB
- FM
- AM
- Filters
- Notch
- Noise Blanker
- Noise Reduction
- DSP
- Memories
- CAT control
- USB port
- Automatic tuner
- Display
- Backlighting
- Cooling fan

A repair involving any of these systems can become expensive.

Ask If It Has Been Modified

Some hams modify radios to:

- Increase power output.
- Open additional bands.
- Replace cooling fans.
- Install aftermarket filters.
- Modify audio characteristics.

Not all modifications are bad. However, a poorly performed modification can become a serious problem.





Check the Serial Number

The serial number can reveal:

- Approximate manufacturing year.
- Place of manufacture.
- Production batches with known issues.

A missing, removed, or altered serial number should always raise suspicion.

Research the Seller

If buying online, check:

- Account age.
- Reviews and feedback.
- Seller ratings.
- Sales history.
- Participation in ham radio communities.

A seller's reputation is just as important as the condition of the radio itself.

Calculate the True Cost

A used radio is not only the purchase price.
Consider:

- Shipping.
- Insurance.
- Power supply.
- Microphone.
- Manuals.
- Cables.
- Future repairs.

Sometimes a radio that appears to be a bargain can end up costing more than buying new.



The First Questions You Should Ask

- Are you the original owner?
- Has the radio ever been repaired?
- Do all modes work properly?
- Does it include the original accessories?
- Can you send a video showing it operating?



What Accessories Are Included?

A complete package often indicates that the radio was well cared for.
Ideally, it should include:

- Original box.
- Manual.
- Microphone.
- Power cable.
- Fuses.
- Original accessories.
-

Never Buy in a Hurry

The best deals are rarely the fastest ones.
If you feel pressured to make an immediate decision, take a moment and step back.
In amateur radio, another opportunity will always come along.
A great radio will appear again on the market.
A bad deal, however, can stay with you for years
.

Quick Checklist Before Buying

□ I researched the model.
□ I know its common problems.
□ I reviewed detailed photos.
□ I watched a working video.
□ I verified output power.
□ I checked the seller's reputation.
□ I confirmed the included accessories.
□ I compared the price with other listings.
□ I have a budget for possible repairs.

Final Thoughts

The excitement of finding "the radio of our dreams" can sometimes cause us to overlook warning signs. However, an informed buyer has a much better chance of making a smart investment.
Patience, research, and asking the right questions are the best tools for avoiding disappointment.
Remember: in amateur radio, a quality used radio can provide many years of service... as long as the purchase is made with your eyes wide open.



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Shoots your line over trees with power and accuracy.

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Breaks down to fit in your pack. Built for the field.

EASY TO USE
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BUILT FOR HAM RADIO
Perfect for POTA, SOTA, field days, and emergency communications.

KIT INCLUDES:

- PVC Air Launcher (Breaks down)
- Fishing Reel (Pre-spooled with Line)
- 160 ft. of Braided Dacron Line
- 5 Lead Weights
- Orange Marking Tape
- Padded Carrying Case
- Easy-to-Follow Instructions

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$199.99

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ADVENTURE READY. AIRBOSS STRONG.

MADE IN THE USA | DESIGNED BY HAMS, FOR HAMS | BUILT TO LAUNCH. BUILT TO LAST.

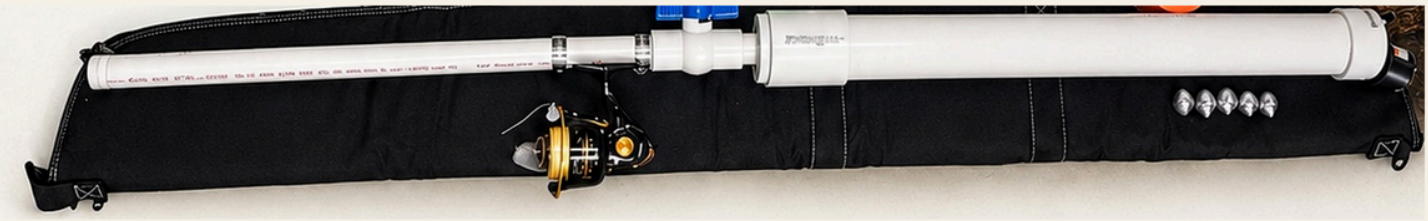
AIRBOSS LAUNCHES A FIELD-READY POTA KIT

A consolidated antenna-line deployment package designed to simplify one of portable amateur radio's most practical challenges: getting a support line into position.

PRODUCT INFO AND ORDERING

olahtechnologies.com

Olah Technologies LLC
AirBoss
Eric Olah, W5EF806



WHAT IT IS

Portable amateur radio operations often depend on how efficiently an operator can establish an antenna system. At a park, a temporary Field Day site, a remote operating location or an emergency deployment, placing a support line over a suitable tree branch can be one of the most practical and time-consuming parts of the setup.

Olah Technologies LLC has introduced the AirBoss POTA Kit, a field package built around the company's compressed-air antenna launcher. Rather than requiring operators to source and organize the deployment components individually, the kit brings the principal tools together in one portable carrying system.

KIT AT A GLANCE

- PVC Air Launcher, breaks down for transport
- Fishing reel, pre-spooled with line
- 160 ft. of braided Dacron line
- 5 lead weights
- Orange marking tape
- Padded carrying case
- Easy-to-follow instructions

WHY IT MATTERS IN THE FIELD

For Parks on the Air operations, an organized line-launching system can help reduce the time between arriving at a site and placing an antenna in operating position. The launcher is designed to place a lightweight line over an available support so that the operator can pull a stronger cord into position and elevate a wire antenna.

The same basic capability can support Field Day stations, temporary club operations, emergency communication exercises and other portable deployments where permanent antenna structures are unavailable.

At suitable Summits on the Air locations, the system may also be useful when trees or elevated natural supports are available. Its suitability will depend on the terrain, applicable rules and the operator's carrying requirements.

The practical value of the AirBoss POTA Kit is not a new antenna design. It is the organization of the tools required to deploy one. The launcher, reel, line, cord, weights and accessories remain together as a field package, helping reduce the possibility of arriving at an activation site without an effective method of placing the antenna support line.

THE AIRBOSS POTA KIT IS NOT THE ANTENNA. IT IS THE FIELD TOOL DESIGNED TO HELP PORTABLE OPERATORS PUT THAT ANTENNA WHERE IT CAN PERFORM.

SAFETY NOTE Follow all manufacturer instructions. Never launch toward electrical power lines, people, animals, vehicles or property. Inspect the operating area and equipment before every use and observe the manufacturer's stated pressure limits.

Source: AirBoss POTA Kit materials supplied by Olah Technologies LLC.

INTERNATIONAL SPECIAL EVENT

CATS AND DOGS ON THE AIR TOGETHER

International operators will unite throughout August to celebrate International Cat Day and International Dog Day while raising awareness for animals in need.

By Caryn Eve Murray, KD2GUT



AUG 1–31 | HF | CW + SSB | GLOBAL EVENT

Promotional artwork supplied by the contributor.

Cats and dogs don't always have to fight like cats and dogs. In fact, this August they are working together as a team. An international group of radio amateurs will be on the air throughout the month in a joint celebration of International Cat Day and International Dog Day.

The combined special event stations will be active from August 1 through August 31 to call attention to the needs of abandoned, abused, and homeless pets around the world, and to advocate for adoption and humane treatment. In the spirit of friendship and a shared love of animals, the operators hope to raise awareness and hear one another's stories.

The hams calling CQ are animal lovers who understand the power of rescue. Many have been deeply involved in organized animal welfare efforts or have welcomed a rescued dog or cat into their families.

International Dog Day, also observed in the United States as National Dog Day, is celebrated each year on August 26. International Cat Day is August 8.

The International Dog Day amateur radio event began in 2022 and has continued to grow. This year, stations celebrating dogs and cats will be on the air from Latvia, the United Kingdom, the United States, the Netherlands, India, and Germany.

Across the United States, a growing team of radio amateurs will share the call sign K0DOG as members of the Dog Day Radio Amateur Radio Club. Operators will be active on the HF bands using CW and SSB. Dog Day call signs will include YL1DOG, GB4DOG, VU2MGS, DL0DOG, and PD00DOG, among others. Cat Day stations will call CQ as DL0CAT, GB4CAT, and DA0CAT.

This year's certificate for successful chasers will be a colorful downloadable document with endorsement stamps for each unique call sign worked. A numeric counter will appear on the endorsement stamps for operators who make more than one contact with the same call sign. The K0DOG team also plans to make downloadable eQSL cards available.

The website **hamlog.online/iddicd2026/** will allow hunters participating in both events to claim their awards as they earn them and see which stations are currently on the air. Until August, the website will count down the days until the event begins.

You may also visit **dogdayradio.org** and **catdayradio.org** for updates about both events. The websites contain information about the special event call signs, operating schedules, and an opportunity to meet the dogs and cats who inspired them.

> ***"Be aware that all special event operators will be working like dogs, and cats, because they want to hear and share as many rescue stories as possible."***

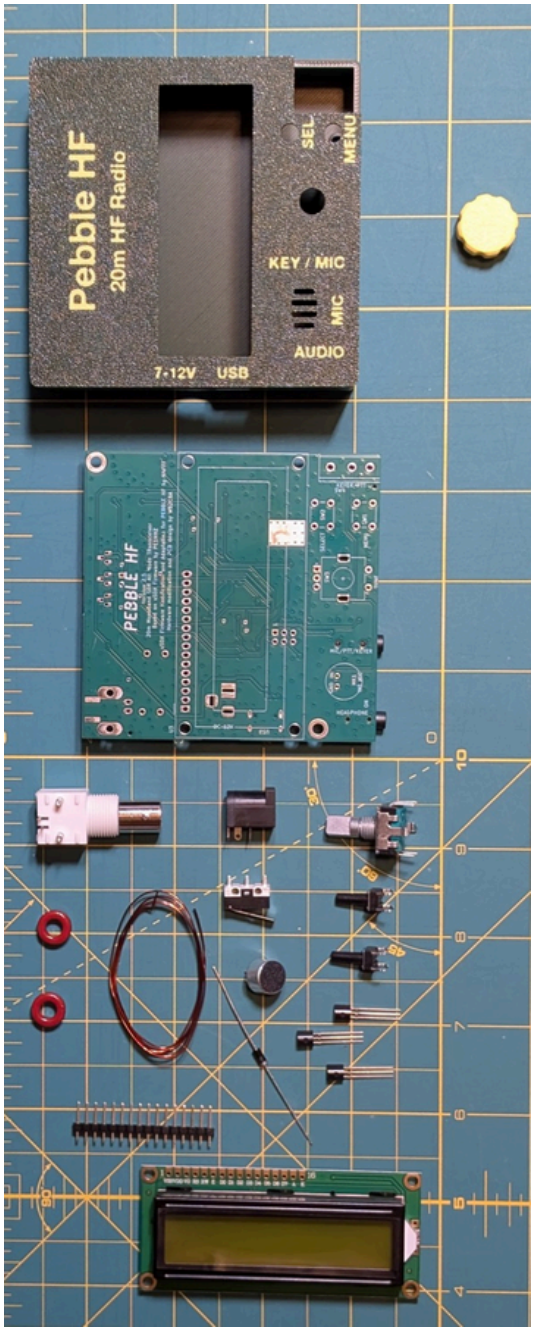
By: SWR Editorial Team
Images courtesy of: pebblehf.com



Pebble HF

The Little Station Bringing Back the Magic of Building Radio

A QRP transceiver that blends modern technology, hands-on learning, and the original spirit of amateur radio.



For decades, amateur radio has maintained a special connection with experimentation. Before the days of SDR equipment with spectacular displays, digital menus, and hundreds of automated features, many hams began their journey by building their own gear, soldering components, and learning that behind every signal traveling through the air there was knowledge, patience, and creativity.

It is within that tradition that the Pebble HF was born, a small QRP transceiver designed to remind us of something fundamental: amateur radio is not only about buying technology, but also about understanding it, building it, and enjoying the journey.

More Than a Radio: A Gateway to HF

The Pebble HF belongs to a category that continues to attract new enthusiasts: QRP equipment. These radios are designed to operate at low power and demonstrate that a good antenna, favorable propagation conditions, and operator skill can overcome the limitations of just a few watts.

Its concept is simple, yet powerful:

A compact, affordable, and educational radio that allows operators to explore the world of HF without the need to invest large amounts of money in a traditional station.

Although it is not designed to compete with high-end professional transceivers, its purpose is different: to inspire, teach, and encourage new operators.

The Return of the Builder's Spirit

The Return of the Builder's Spirit

One of the most appealing aspects of the Pebble HF is its building philosophy.
During the early years of amateur radio, building a transmitter or receiver was a natural part of the hobby. Hams learned electronics because they needed to understand how the equipment they put on the air actually worked.
The Pebble HF brings back that concept through a kit-style format, where the operator takes part in assembling the radio.
It is not simply about opening a box and turning on a transceiver. It is about creating a deeper connection with the station.
Every component installed and every solder joint completed becomes part of the experience.

Small in Size, Big in Possibilities

The Pebble HF is primarily designed for the 20-meter band, one of the favorite bands among QRP operators due to its excellent ability to support both domestic and international communications.
With an output power of only a few watts, this small radio can make contacts that demonstrate one of the great wonders of amateur radio:
You do not always need high power to reach great distances.
A signal generated by a small transceiver, connected to an efficient antenna and supported by favorable propagation conditions, can travel thousands of miles.

The Revolution of Portable Power

Another interesting aspect of the Pebble HF design is its modern approach.
The ability to use USB-C power reflects how amateur radio continues to adapt to new generations of technology.

Today, many people already have portable batteries, USB chargers, and compact accessories. Integrating these elements into a QRP transceiver opens the door to extremely simple portable stations:

- A small battery.
- A portable antenna.
- A lightweight radio.
- An outdoor location.

Everything needed to activate a station from almost anywhere.

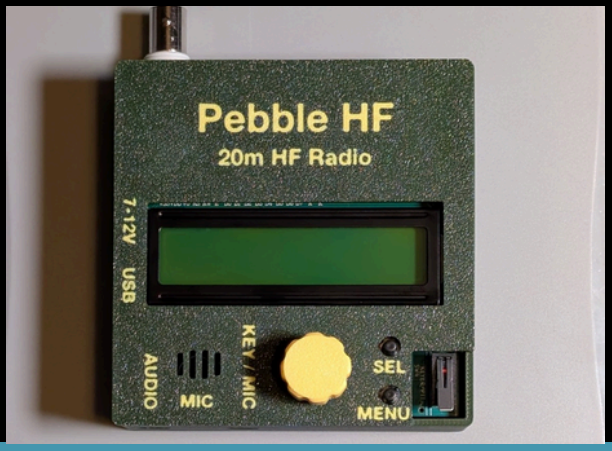


Who Is the Pebble HF For?

This transceiver can appeal to different groups within amateur radio:
The Beginner
For those who have recently earned their license and want to explore HF without making a large initial investment.
The QRP Enthusiast
For operators who enjoy the challenge of making long-distance contacts using low power.
The Educator
For clubs, schools, and science programs looking to teach electronics, communications, and radio technology.
The Experimenter
For those who enjoy modifying, learning, and understanding how their equipment works.

It Is Not Designed to Replace a High-End Transceiver

It is important to understand the philosophy behind the Pebble HF. It was not created to replace radios such as the Yaesu FT-710, Icom IC-7300, or modern Kenwood transceivers. These radios offer advanced features, higher power output, sophisticated receivers, and a completely different operating experience.
The Pebble HF belongs to another category. Its value is not only found in the number of features it offers, but in the experience it provides.



It is a reminder that amateur radio was born from curiosity.

A Tool to Inspire New Generations

One of the greatest challenges facing amateur radio today is attracting new operators and showing them that this hobby can be much more than simply pushing buttons.
Equipment like the Pebble HF can become powerful educational tools because they combine:

- Electronics.
- Science.
- Communications.
- Creativity.
- Experimentation.

For a young student, building a small transceiver and then hearing a station respond to their call can become an unforgettable moment.

Conclusion: A Small Pebble, a Big Wave

The name Pebble HF represents its philosophy perfectly.
A small pebble may seem insignificant, but when it falls into the water, it creates waves that expand far beyond the point where it began.
That is exactly what happens with amateur radio.
A small radio, a small antenna, and a few watts can create connections that cross oceans and bring people together.
The Pebble HF is not just a QRP transceiver. It is an invitation to remember that the true magic of amateur radio was never only about power output or the price of the equipment.
It has always been about the excitement of building, experimenting, and discovering how far a signal created by our own hands can travel.

By: Juan Montijo WP4OV

How to Choose the Best Antenna Based on Your Available Space

The biggest antenna is not always the best antenna. The key is making the most of the space you have available.



For years, I have heard the same question over and over again: “What is the best antenna?” The answer often surprises those who are new to amateur radio: there is no perfect antenna for everyone.

The best antenna is the one that fits your available space, the bands you want to operate, and the goals you want to achieve.

Many radio amateurs stop enjoying the hobby because they believe they need a massive 100-foot tower and a five-element Yagi to make good contacts. The reality is very different.

Today, there are solutions for almost every situation, from an apartment balcony to a large property with several acres of available space.

Before You Buy, Evaluate Your Environment

Before opening your wallet, step outside and carefully examine the location where you plan to install your antenna.
Ask yourself:

- How much horizontal space do I have?
- Can I install a mast?
- Are there tall trees available?
- Are there neighborhood or HOA restrictions?
- Do I have nearby neighbors?
- How high can I safely install the antenna?

Answering these questions before buying will help you avoid purchasing an antenna that you later discover cannot be installed.



If You Live in an Apartment
Many people believe that enjoying amateur radio from an apartment is impossible.
Nothing could be further from the truth.
Some of the best options include:

- Balcony-mounted magnetic antennas.
- Discreetly installed End-Fed antennas.
- Magnetic Loop antennas.
- Compact vertical antennas.
- Portable antennas for operating from parks or outdoor locations.



Magnetic Loop antennas, for example, require very little space and can deliver surprisingly good performance on HF bands when properly tuned. They are also an excellent alternative for operators living in areas with limited installation options or restrictions.

A Small Backyard Still Offers Possibilities

A limited amount of space does not mean you are restricted to only VHF and UHF.

With creativity, you can install:

- Inverted V dipoles.
- Half-wave End-Fed antennas.
- Multiband vertical antennas.
- Hidden wire antennas strung between trees.
- Carolina Windom antennas.



Many of these options can cover multiple bands without requiring large towers or complicated structures.



When Space Is Not a Problem

Those who have a large property have a much wider range of possibilities.

Some of the most popular options include:

- Directional Yagi antennas.
- Hexbeam antennas.
- Cubic Quad antennas.
- Full-size dipoles.
- Delta Loop antennas.
- Low-band antenna arrays.
- Beverage antennas for receiving.

These antennas can provide greater gain, directivity, and improved performance for long-distance communications (DX). However, they also require a larger investment and a more complex installation.

Height Matters... A Lot

Choosing a good antenna is only part of the equation.

The installation height can make a tremendous difference in performance.

A modest antenna installed properly will often outperform an expensive antenna that is mounted too low.

More Gain Does Not Always Mean Better Results

It is common to think that an antenna with more gain will solve every problem. However, a high-gain antenna may be unnecessary if your primary interest is local communications or if your available space does not allow for proper installation. In many cases, a simple antenna that is well built and properly tuned will outperform a much more expensive antenna installed under less-than-ideal conditions.

Think About the Future Too

If you currently operate on only one band but plan to expand your station later, it is wise to consider an antenna that allows you to grow without having to replace your entire installation.

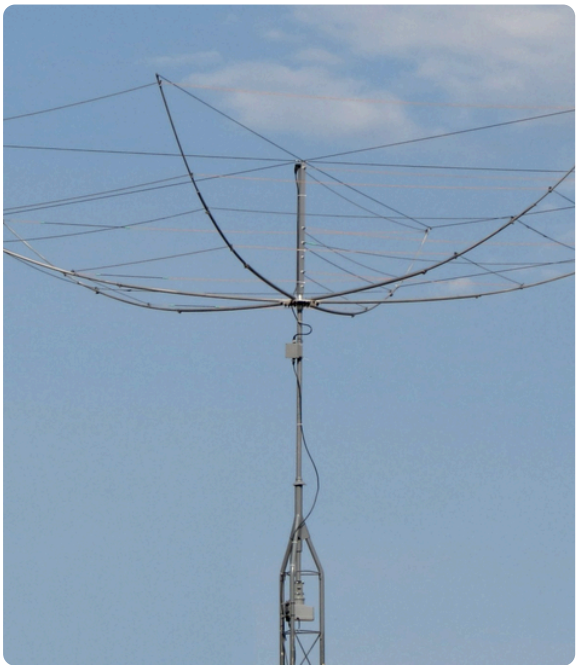
It is also recommended to consider:

- Ease of maintenance.
- Wind resistance.
- Availability of replacement parts.
- Compatibility with a rotor if you decide to install a directional antenna in the future.

Planning with a long-term vision can save both time and money.

Final Thoughts

The best antenna is not always the largest, the most expensive, or the one featured in the photos of major contest stations. It is the one that fits your situation, makes the most of the space available, and allows you to fully enjoy amateur radio.
Remember that every station is different. With planning, creativity, and a careful installation, even a small space can become a gateway to communicating with the world.
Because, in the end, it is not the size of the property that makes a station great, but the passion of the person behind the microphone.




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Every signal that travels through the air reminds us that distance is never a barrier when passion drives our desire to connect.
Photo by: DD1VW

SWR ON THE AIR

From Our Readers



REAL OPERATORS. REAL STATIONS. REAL RADIO.

At SWR Magazine, we believe the heart of amateur radio lives in your shack, your antennas, and your experiences on the air.

We invite readers worldwide to share photos that capture the essence of ham radio in action.

WHAT WE'RE LOOKING FOR:

- SHACKS
- ANTENNAS
- FIELD DAY
- JOTA / JOTI
- CLUB ACTIVITIES
- POTA / SOTA / BOTA
- MOBILE SETUPS
- PORTABLE STATIONS

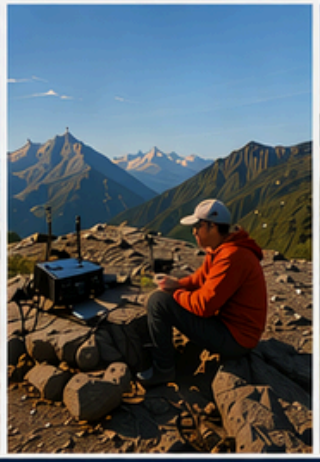
REAL OPERATING MOMENTS













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- Thank you for helping tell our story!

THE 1950s:

AMATEUR RADIO'S GOLDEN ERA

A personal look back at the postwar boom, Solar Cycle 19, and the Novice generation that transformed amateur radio.

By Lew Nyman, K1AZE
Montgomery, Alabama



Lew Nyman, K1AZE's Novice homebrew station, featuring his receiver, transmitter, power supply, and Morse key. Photo courtesy of Lew Nyman, K1AZE.

It's hard to believe that ham radio is well over 100 years old! Federal licensing of amateur radio operators began in 1912, although some had been transmitting before that time using spark-gap transmitters. Amateur radio operators have been pioneers in radio development and innovation throughout the years. Technology has certainly changed the face of our hobby. What is most exciting is that our numbers have been increasing. Interest is on the rise, and digital modes may be one factor today. No doubt the volunteer examiner program and no-code licensing have also contributed enormously to the growth of the hobby in recent years. Despite no-code licensing, CW is still very much alive and well. One can still find numerous CW signals on all the bands.

Amateur radio has had many great periods of growth. But I would like to focus on what I call the golden era of ham radio: the decade of the 1950s. I have now been licensed for over 69 years and had the privilege and excitement of operating as a newcomer in the 1950s. You might ask why I call those years the golden era. Three major factors shaped this assessment. First, many of you who know your ham radio history know that during World War II, amateur radio operators in the United States were silenced by the government for security reasons. Hams were off the air until after the war ended. It was a total blackout. By 1950, most hams had returned to the airwaves with great excitement.

Second, HF propagation was at a historic high as a result of a phenomenal solar cycle: the famous and incredible Solar Cycle 19. The bands were jam-packed with signals from end to end, including many DX stations. There were far fewer pileups on DX stations than there are today because so many of these stations were on the air with strong signals. Third, there was a tremendous influx of newly licensed hams following the introduction of the Novice Class license. It was the perfect storm for amateur radio, particularly in the United States.

Radio manufacturers jumped on the bandwagon at that time, producing a wide range of new American-made ham gear. Many of us are familiar with names such as R.L. Drake, E.F. Johnson, National Radio, Hammarlund, Hallicrafters, Clegg, Ameco, Heathkit, and many more. Today, these radios are prized collectibles. One can find many of them at hamfests throughout the country, and many have been restored and are still on the air. They all used vacuum tubes; solid-state technology was nonexistent. Today, an unbuilt Heathkit in its original box is worth a king's ransom. Many hams also assembled their own "homebrew" radios, since parts were readily available from many suppliers. There was also a proliferation of military-surplus radios from the war, made available to consumers at bargain-basement prices. Hams purchased a great deal of this equipment and, in some cases, converted it for use on amateur frequencies.

CONTINUED

The Novice Generation

In 1951, the FCC restructured amateur licensing into six named classes. Most notable was the new entry-level Novice Class license. On HF, it permitted CW transmissions only, with a maximum power of 75 watts input to the transmitter's final amplifier stage. The transmitter had to be crystal-controlled, with one crystal for each specific frequency. In the early years, Novices could operate CW on portions of the 80-, 11-, and 2-meter bands, along with limited AM voice privileges on 2 meters. Later, other HF subbands on 40 and 15 meters were opened to Novices, while 2-meter Novice operation was eventually eliminated and 11 meters was reassigned to Citizens Band service. To qualify for a Novice license, a candidate had to pass a 5-word-per-minute (WPM) Morse code test, both sending and receiving, and a 25-question multiple-choice examination consisting mostly of rules and regulations. The tests were first administered at an FCC field office. Beginning in 1954, testing was handled by a General or higher-class licensee, who then sent the examination materials to the FCC for grading. For several years, the Novice Class license was valid for only one year and was nonrenewable. The Novice was expected to move up to General Class to stay on the air. Tens of thousands of new Novices hit the airwaves, and many eventually upgraded.

Even though new Novices were supposed to be proficient at sending and receiving 5 WPM, many newcomers transmitted at only 2 to 3 WPM. I guess this was due primarily to nervousness and, to some extent, heavy QRM on the Novice subbands. The frequencies were jam-packed with CW signals. A typical transmission might last 15 to 20 minutes and include an RST report, name, and address. QSL cards were in great demand. Many words were repeated three times: "Name is Bill Bill Bill. RST RST RST 469 469 469." RST reports were not overly generous, but they were usually quite accurate. No one ever got a 599. The other station would respond, if he was still on frequency, with: "RRR OK OM. Solid copy. But please repeat ur name, QTH, and my RST." What?! Novices were eagerly working toward earning their Worked All States (WAS) award certificate.

Those were certainly exciting times for ham radio. But our hobby is still very much alive and growing in popularity in this modern era of solid-state and digital operation. Today's radios are far more sophisticated than those of the past, and as a result, "homebrew" radios have become relics of a bygone era. Despite poor solar cycles and consequently poor propagation in recent decades, the HF bands remain fairly active, and one can still work many DX contacts.

See you on the bands!

"It was the perfect storm for amateur radio, particularly in the United States."

WHY THE 1950s FELT GOLDEN

POSTWAR RETURN
American amateurs returned to the airwaves after the wartime operating blackout.

SOLAR CYCLE 19
Exceptional propagation filled the HF bands with strong domestic and DX signals.

THE NOVICE BOOM
The new Novice license brought tens of thousands of newcomers into amateur radio.

ON THE AIR

AMATEUR RADIO CONTESTS THIS MONTH

📻 EUROPEAN HF CHAMPIONSHIP

Date: August 1, 2026, 12:00 UTC to August 1, 2026, 23:59 UTC
Modes: CW and SSB
Participants: Worldwide, open to all amateur radio operators
Exchange: Signal report (RS/T) and European zone according to contest rules
Note: An international high-activity competition that brings together operators from around the world to contact European stations on the HF bands.

🌐 RUSSIAN DISTRICTS AWARD CONTEST

Date: August 15, 2026, 08:00 UTC to August 16, 2026, 08:00 UTC
Modes: CW and SSB
Participants: Worldwide, open to all amateur radio operators
Exchange: RST and RDA district code
Note: An international event where operators aim to contact as many administrative districts of Russia as possible, while also exchanging contacts with stations around the world.

🌐 WORKED ALL EUROPE DX CONTEST – WAE CW

Date: August 8, 2026, 00:00 UTC to August 9, 2026, 23:59 UTC
Mode: CW
Participants: Worldwide, open to all amateur radio operators
Exchange: RST and contact serial number
Note: One of Europe's most prestigious contests, recognized for the importance of DX contacts with European stations and its unique QTC traffic exchange system.

🏅 YO DX HF CONTEST

Date: August 22, 2026, 12:00 UTC to August 23, 2026, 12:00 UTC
Modes: CW and SSB
Participants: Worldwide, open to all amateur radio operators
Exchange: RST and contact serial number
Note: One of Eastern Europe's major HF competitions, organized by the Romanian Amateur Radio Federation, with participation expected from stations in many countries around the world.

📡 SARTG RTTY (SARTG WW RTTY CONTEST)

Date: August 15, 2026, 00:00 UTC to August 16, 2026, 16:00 UTC
Mode: RTTY
Participants: Worldwide, open to all amateur radio operators
Exchange: RST and contact serial number
Note: One of the world's most traditional digital contests, dedicated to the RTTY mode and promoting digital communications between international stations.

📻WORLD WIDE DIGI DX CONTEST)

Date: August 29, 2026, 12:00 UTC to August 30, 2026, 11:59 UTC
Modes: FT4 and FT8
Participants: Worldwide, open to all amateur radio operators
Exchange: Digital signal report and Maidenhead Grid Locator
Note: A modern contest focused on next-generation digital modes, where small stations can achieve international contacts using technologies such as FT8 and FT4.

Amateur radio contests are much more than competition: they are a challenge that brings voices, cultures, and continents together through the invisible magic of radio waves.

From Vacuum Tubes to SDR

The Sounds That Defined Generations

When Turning On a Radio Was a Ritual

There was a time when activating an amateur radio station was much more than simply flipping a switch. It was a moment filled with anticipation and excitement. The gentle hum of the transformer, the orange glow of the vacuum tubes warming up, and the movement of the meter needles announced that a new adventure was about to begin.
Every sound had a meaning. The radio slowly came to life as the operator adjusted the controls and waited to hear that distant signal that could arrive from anywhere around the planet.



Photo by: kfourso

The Warm Sound of Vacuum Tubes

For many radio amateurs, vacuum tube equipment represents the golden age of radio. Transmitters and receivers that filled the room with their warmth, their slowly spinning fans, and their large electronic components working together to carry a voice through the air.
Patience was part of the charm. Operators had to wait for the tubes to warm up, carefully adjust the tuning, and listen as a weak signal slowly emerged from the noise and static. Every successful contact was a small victory.



The Transistor Era: Smaller, Yet Reaching Farther



With the arrival of solid-state equipment, amateur radio experienced a major transformation. Radios became more compact, reliable, and easier to transport.

These new devices allowed more people to bring a complete station into their homes, vehicles, and even on remote expeditions. Although some of the mechanical sounds of older equipment disappeared, the excitement of hearing an unfamiliar voice responding from thousands of miles away remained.

The technology changed, but the spirit of human connection stayed the same.

The Birth of Modern Transceivers

Digital transceivers brought new possibilities: memory channels, displays, advanced filters, and greater precision in reception.

Amateur radio entered a new era where electronics improved the operator's experience without losing the essence of the hobby: searching for signals, having conversations, and creating friendships across the radio spectrum.

Beyond Technology: Stories That Remain

Equipment may change, but every radio carries memories. An old transceiver can bring back nights spent chasing DX, contests, conversations with friends, the first QSL card received, or that contact that once seemed impossible.

The true magic of amateur radio was never found only in vacuum tubes, transistors, or digital processors. It lives in the people who use those tools to connect with one another.



A Passion That Never Ages

From the warm glow of a vacuum tube to the precision of an SDR, the sounds of radio have evolved. Yet the excitement of hearing a voice travel across oceans and continents remains exactly the same.

Because amateur radio is not simply a technology of the past or the future; it is a human experience that continues to live in every signal that appears on the dial.

“Equipment changes with time, but the excitement of discovering a new voice on the air remains forever.”





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Every contact tells a story;
every call reminds us that,
through the magic of radio,
the world is much smaller
than it appears.
C90
SDR
Photo by: KO6MSM

July 17 EVENTS AND ACTIVITIES SCHEDULED FOR AUGUST 2026

SPECIAL EVENTS

📍 Conventions, Hamfests, and In-Person Event

- **Shreveport-Bossier Hamfest –** August 7–8, 2026 – Shreveport, Louisiana, USA – ARRL Delta Division Convention. Regional amateur radio convention featuring equipment displays, a hamfest marketplace, technical presentations, license examinations, demonstrations, and meetings with radio clubs from across the region.
- **Northeast HamXposition –** August 13–16, 2026 – Marlborough, Massachusetts, USA – ARRL New England Division Convention. One of the largest amateur radio gatherings in the northeastern United States, featuring commercial exhibits, technical forums, workshops, presentations, an equipment marketplace, and activities for radio amateurs of all experience levels.
- **Cincinnati Hamfest –** 15 de agosto de 2026 – Owensville, Ohio, USA – ARRL Great Lakes Division Convention. Regional amateur radio event featuring new and used equipment exchanges and sales, technical presentations, license examinations, exhibitor displays, and activities organized by local radio clubs.
- **Huntsville Hamfest –** August 21–23, 2026 – Huntsville, Alabama, USA – ARRL National Convention 2026. One of the most important amateur radio gatherings in North America and the site of the ARRL National Convention. The event brings together manufacturers, distributors, international speakers, amateur radio organizations, technical forums, and presentations covering DX, satellites, emergency communications, and the latest developments in the world of radio. It also features an extensive equipment marketplace for radio enthusiasts.

📍 On-the-Air Operations / Special Events

- **International Lighthouse Lightship Weekend (ILLW) –** August 15–16, 2026 – Worldwide – International Lighthouse and Lightship Weekend. An international event where amateur radio operators activate historic lighthouses, lightships, and coastal stations from many countries. Operations include SSB, CW, and digital modes, combining amateur radio, maritime history, and the preservation of lighthouse heritage.
- **Operation PAUL BUNYAN – August 8, 2026 –** San Diego, California, USA – USS Midway Museum Ship Activation – USS Midway Museum Amateur Radio Club (NI6IW). Special amateur radio operation from the historic aircraft carrier museum USS Midway, commemorating naval heritage and connecting with radio amateurs around the world through HF bands and digital modes. An event that combines history, maritime tradition, and the global reach of amateur radio.

📬 DO YOU HAVE AN AMATEUR RADIO EVENT YOU WOULD LIKE TO FEATURE IN OUR MAGAZINE? SEND US THE DETAILS AT INFO@SWRMAGAZINE.ORG, AND WE WILL BE HAPPY TO PUBLISH IT.

By: Yanira Maldonado, WP4QOE

Female Frequency

When a Woman Calls CQ...
She Is Changing History

That is what we mean when we talk about opening a path. Not competing with men, and not trying to prove that we can do the same things they do. It is about making sure that the woman who arrives tomorrow finds something many of the first YLs may not have had: role models.
That she hears a woman working DX and thinks she can do it too.
That she sees a YL taking part in a contest and dares to compete.
That she discovers women doing CW, experimenting, building antennas, or running a net, and understands that none of those areas is out of reach simply because she is a woman.
The women who came before us helped open the path we walk today. Those of us who are here now can make it a little wider for those who come next.
And perhaps one day, a woman picking up a microphone, working DX, or taking part in any area of amateur radio will no longer draw special attention.
It will simply be what it always should have been:
a radio amateur on the air
.

The Contacts That Never Appear in the Log

In radio, we know with whom we made a QSO.
We write down the call sign, the time, the frequency, and the report.
But we never really know who else was listening.
And those unseen listeners matter too.
There may be a future radio amateur listening to a conversation.
A young woman observing a station during an activity.
A newly licensed operator discovering that other women are doing the very thing she is still watching from a distance.
None of them will appear in our log.
Yet one of them may remember that signal for a very long time.

Some moments on the air seem small.
A quiet frequency. Someone tuning across the dial. Voices come and go until, suddenly, a different one appears.
A female voice calls:
CQ, CQ, CQ...
To many, it may simply be another station looking for a contact.
But somewhere, a woman may be listening.
Perhaps she has just earned her license. Perhaps she still does not dare to transmit. Maybe she has never heard another YL call CQ with confidence.
And then she hears that voice.
It does not matter whether it belongs to an experienced operator or to someone who is also just beginning.
She is there.
And without knowing it, that YL has just transmitted a message she never actually said:
You can be here too.

A Voice Can Open a Path

For much of its history, amateur radio has been a predominantly male space. For many of the first women who chose to enter this world, it was not always easy to find themselves in an environment where there were few YLs and, therefore, very few female references with whom they could identify.
Those women had to dare to step into territory that, for them, was almost unknown. They learned, asked questions, experimented, and gradually claimed their place. And precisely because they did, those of us who came later found a path that was a little more open.

Today we find women working DX, taking part in contests, practicing CW, experimenting with digital modes, building antennas, supporting emergency communications, leading nets, holding leadership positions, and teaching others.
And every time a YL participates actively in any of these areas, something important happens: her presence helps women stop being seen as an exception within amateur radio and begin to be recognized, simply, as part of it.
That is why presence matters.
Not because YLs have to prove we are better than OMs, or because amateur radio needs to become a contest between men and women.
Quite the opposite.
Radio is far too big for that.
It is about contributing, learning, teaching, and allowing each person to find their place through their own merit.

Radio is far too great for that.
It is about contributing, learning, teaching, and allowing every person to find their place through their own efforts and dedication.
The OM operators who share their knowledge, invite others to participate, and understand that teaching a new operator does not diminish anyone are also part of this story. On the contrary, it strengthens amateur radio as a whole.

Being Present Is Also Leaving a Legacy

Perhaps we will never know who we inspire.
That is precisely the beauty of it all.
While a YL is transmitting, someone may be discovering a new possibility.
While she shares what she knows, another woman may be thinking: "I want to learn that."
While she actively participates, she is helping ensure that the next woman who enters amateur radio finds a path that is a little more familiar.
To the YLs who have spent years in this wonderful world, I would say:
Participate.
Share what you know.
Learn new modes.
Dare to occupy spaces.
Allow other women to see themselves reflected in you.
We do not need to be perfect to inspire someone.
We simply need to be present.
And to our OM colleagues who teach, encourage, and create spaces with respect: continue doing so.
You may never know how much a simple invitation, an explanation, or those words:
"Go ahead, give it a try."
may have meant to someone.
Because every generation of radio amateurs leaves something behind for the next one.
The question is: what will we choose to leave?
Perhaps we will never know who was listening when we sent that CQ.
Perhaps we will never meet the woman who decided to try amateur radio because she first heard our voice.
But every time a YL picks up the microphone, learns a new mode, builds a station, shares knowledge, or simply says her callsign, she leaves the frequency a little more open for those who will come after her.
Because sometimes, to change history, you do not need to raise your voice.
You simply need to go on the air.

DX Giant
Elite Classic
Modern HF Legend

IS THE ICOM IC-7800 STILL RELEVANT TODAY?





By: Equipo Editorial SWR

- Bands: HF + 6 meters
- Output Power: 200 watts
- Modes: SSB, CW, RTTY, AM, FM
- Receiver: Independent dual receiver
- DSP: 32-bit digital signal processing
- Display: Color TFT screen
- Built-in Tuner: Automatic internal antenna tuner
- Spectrum Scope: Integrated spectrum analyzer
- Frequency Stability: High-precision TCXO

An Enduring Classic

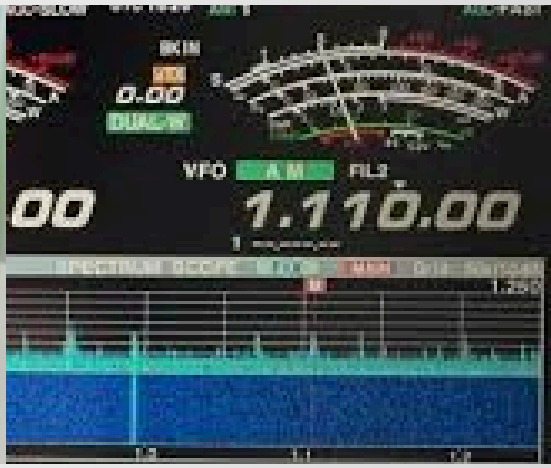
A DX Giant That Refuses to Grow Old

In an era dominated by next-generation SDR transceivers, touchscreen displays, and increasingly advanced digital architectures, some classic radios continue to prove that true performance does not always depend on the newest technology. One of those legendary machines is the Icom IC-7800, introduced by Icom in 2004 as its flagship HF/6-meter transceiver and one of the most advanced radios of its generation. The question is inevitable: is it still relevant in 2026? For many operators, the answer is a resounding yes. The IC-7800 remains highly respected among those who value receiver performance, exceptional build quality, and the experience of operating a true high-end station.

Born for the World's Greatest DX Stations

When Icom developed the IC-7800, the goal was clear: create a no-compromise transceiver for demanding operators, contesters, and DX enthusiasts. The result was a 200-watt HF and 6-meter powerhouse featuring independent dual receivers, digital signal processing (DSP), advanced filtering, and construction quality comparable to professional-grade equipment. Its ability to perform in crowded RF environments quickly made it a favorite among contest operators and DXpedition teams. On bands filled with strong signals, where every decibel matters, the IC-7800 demonstrated outstanding receiver performance and the ability to separate weak signals from nearby stations. Even years after its introduction, the IC-7800 continues to represent a philosophy of engineering where sensitivity, dynamic range, and operator experience were placed above simply adding more features.





What It Still Does Exceptionally Well

Despite being more than two decades old, the IC-7800 continues to stand out for many reasons:

- A receiver with outstanding performance.
- Excellent dynamic range for crowded band conditions.
- True dual receivers for monitoring two signals simultaneously.
- Transmit audio quality highly regarded by operators.
- Extremely robust construction.
- Physical controls designed for comfortable and professional operation.

Many amateur radio operators still appreciate its original design philosophy: a transceiver built to be operated, not simply to display features.

Where It Begins to Show Its Age

Like any piece of equipment that has been on the market for more than 20 years, the IC-7800 does have limitations when compared with today's radios.
It does not offer the flexibility of modern SDR platforms, its visual tools are more limited, and some repairs can become expensive due to its complex design and the availability of replacement parts.
Modern transceivers provide advantages such as direct computer integration, more advanced spectrum displays, and greater compatibility with digital modes. However, few current radios deliver the same feeling of solidity, craftsmanship, and engineering quality found in equipment of this class.

The Used Market

Today, the IC-7800 represents an interesting opportunity for operators who want to experience the world of high-performance stations without paying the cost of a new top-tier transceiver.
Its combination of engineering excellence, performance, and reputation has allowed it to remain one of those radios that refuses to disappear.
More than just a transceiver, the Icom IC-7800 represents a generation of equipment built to last for decades and continue connecting operators around the world.
Because in amateur radio, some radios simply grow older…
while others become legends.



THE SOFTWARE THAT CHANGED THE WAY I DO RADIO

A Personal Look at the Digital Tools That Are Now Essential in My Station

By: Abimael Padro KP4RY

There are programs we install out of curiosity and end up deleting shortly afterward. Others arrive almost by accident, taking up only a small space on our computers, and before we realize it, they completely change the way we enjoy amateur radio.

I do not remember which one I downloaded first. What I do remember perfectly was that night when, after connecting a simple cable between my radio and my computer, the screen suddenly began filling with signals I had never heard with my own ears.

It felt like discovering that, behind the background noise that had always accompanied my nights on the radio, there was an entire hidden universe of silent conversations waiting to be explored.

Until that moment, I thought the computer was simply an accessory for logging contacts or programming memories. I was wrong. Over time, I realized that it had become a tool as important as the antenna or the transceiver itself.

Since then, I have tested many programs. Some stayed installed for only a few weeks; others have remained part of my station for years. Each one taught me something new.

And that is precisely the purpose of these lines: to share which tools I consider essential and why they still have a place on my computer today.

My Essential Software

WSJT-X

The Software That Opened a New Door

Ideal for FT8 and FT4. It allows operators to make contacts under conditions where there was once only silence. An essential tool for understanding propagation and enjoying DX.

JS8 CALL

When Messages Become Meaningful Again

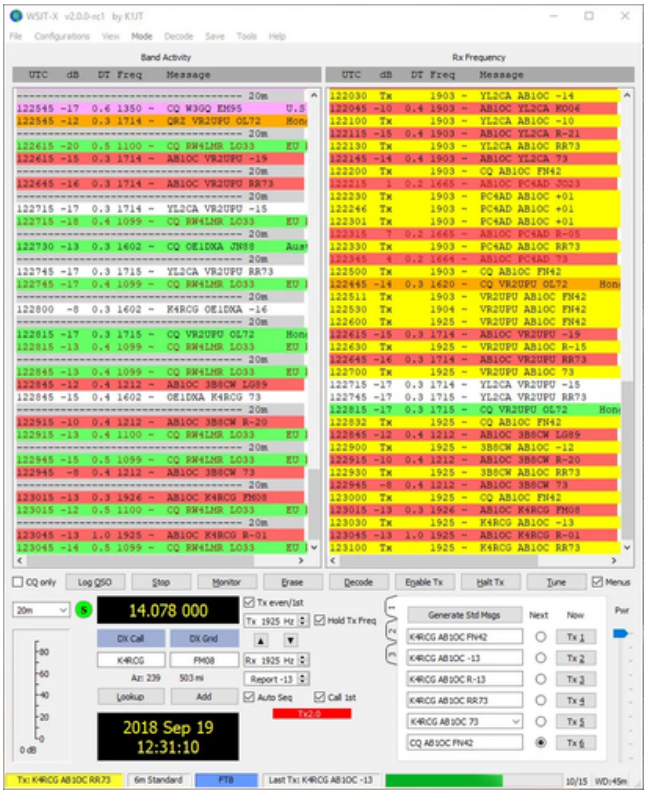
Allows operators to send complete messages under extremely weak signal conditions. Perfect for conversations, networks, and situations where reliability matters more than speed.

FLDIGI

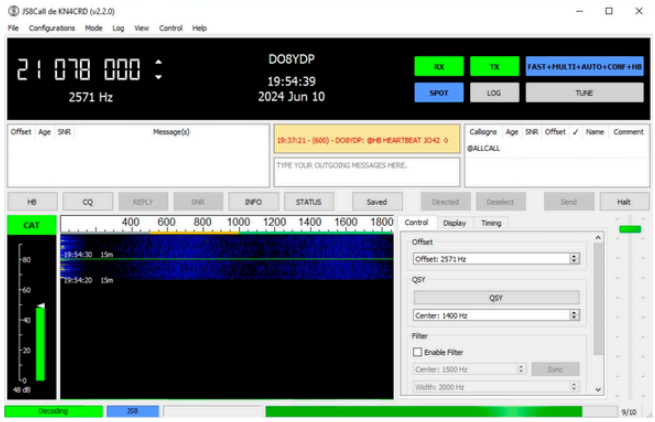
The Workshop Where Classics Come to Life

A complete laboratory. Here you can experiment with RTTY, PSK31, Olivia, DominoEX, and many other modes that remain surprisingly effective today. It teaches patience, observation, and fine adjustment.

WSJT-X: The Software That Opened a New Door



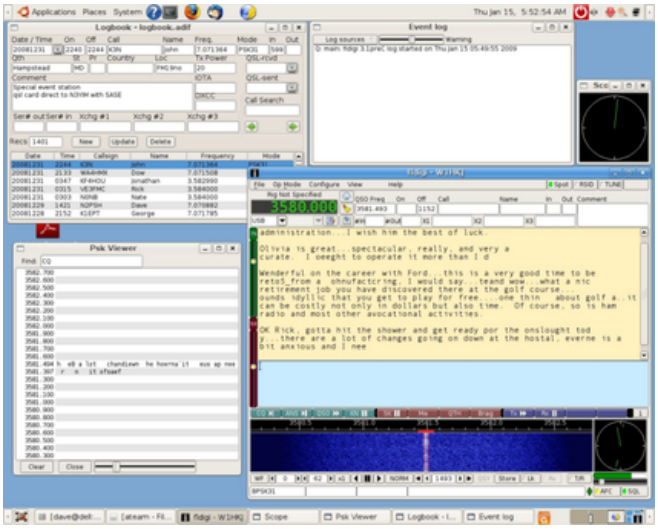
If I had to recommend only one program to someone who wants to start exploring digital modes, it would be WSJT-X.
Not because it is the most beautiful or the easiest to configure, but because it is probably the one that can give a new operator the most contacts during their first days.
The first time I saw dozens of stations appearing on the waterfall display, I thought something was wrong. It seemed impossible that there could be so much activity on one frequency and that I had never heard it.
Then I understood that those signals were too weak for the human ear, but perfectly understandable to an algorithm designed precisely for that purpose.
It was a lesson in humility.
The radio was always there. The only thing that changed was the way we listened to it.
FT8 and FT4 quickly became common tools for checking propagation, testing a new antenna, or simply enjoying DX during a few spare minutes.
Some say FT8 removed the conversation from amateur radio. I prefer to see it differently. FT8 allowed modest stations to communicate under conditions where there was once only silence.
It did not replace traditional radio.
It simply added another way to enjoy it.



JS8Call: When Messages Regain Their Meaning

Then came JS8Call.
I must admit that at first I thought it was simply "another FT8." How wrong I was. While FT8 was designed to exchange minimal information with extreme efficiency, JS8Call allows operators to send complete messages using the same weak-signal principles.
The first time I exchanged a message with a station hundreds of kilometers away using only a few watts, I understood the true potential of the program.
It was not an automatic contact.
There was a conversation.
Slow.
Deliberate.
Like those communications from decades ago, when nobody was in a hurry to finish their turn.
JS8Call reminded me that radio does not always have to be fast to be exciting.

FLDIGI: The Workshop Where Classics Live On



There are modern programs, and then there is FLDIGI. More than just an application, it is a complete toolbox where classic modes such as PSK31, RTTY, Olivia, DominoEX, Contestia, and Thor come together, each offering unique advantages depending on propagation conditions.
I always recommend taking the time to explore them, because it is surprising to discover how some of these modes, developed decades ago, continue to deliver excellent performance when conditions become challenging.
FLDIGI also encourages the operator to be actively involved: watching the waterfall, adjusting filters, correcting frequency, and learning how to interpret signals. Perhaps that is its greatest strength, reminding us that beyond the software, the true protagonist of every contact is still the operator.

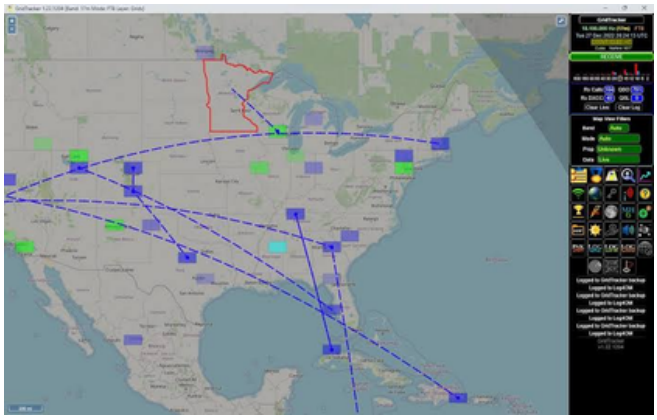
Winlink: When Email Travels Through the Airwaves

I remember the first time I sent an email using only radio. I must admit I expected some kind of magic, but the reality was much simpler. I wrote the message, pressed "Send," waited a few seconds, and without Internet or cellular service, the message began its journey using only radio waves.
It was one of those moments when you realize that amateur radio remains an incredibly useful tool.
Winlink was not designed to compete with services like Gmail or Outlook; its purpose is far more important: allowing information to continue flowing when traditional communication systems fail.
That is why it remains an essential tool for operators involved in emergency communications, expeditions, sailing, and activities in remote locations.
And although most of us may never need to use it in a critical situation, understanding how it works and having it ready in our station will always be a valuable investment.

GridTracker: Seeing Propagation in Real Time

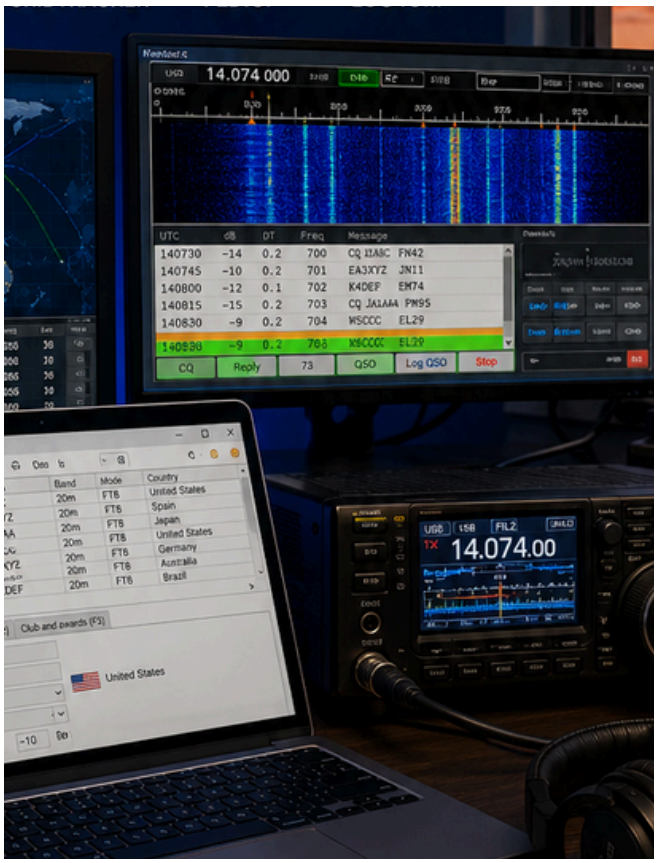
If WSJT-X taught me how to hear invisible signals, GridTracker taught me how to see them.
Suddenly, every contact appeared on a map, stations began lighting up, and propagation paths were drawn right before my eyes. What was once an abstract concept, explained in books or understood through experience, became something I could actually observe in real time.
I must admit that more than one night I ended up watching the map for several minutes without transmitting a single time, simply enjoying how the planet seemed to come alive across the bands.
Watching openings spread, discovering where signals were traveling, and understanding why certain regions became active turned GridTracker into much more than a companion tool for WSJT-X; it became an extraordinary way to learn, understand propagation, and appreciate the fascinating dynamics of amateur radio from a completely different perspective.

Log4OM: Much More Than a Logbook



For years, I kept track of my contacts in notebooks, loose sheets of paper, and very simple logging programs, until I discovered Log4OM. It was then that I realized a logbook could become the true operating center of a station.
Besides recording every QSO, the program integrates online information, controls the transceiver, helps manage awards, and keeps all station activity perfectly organized.
You stop worrying about logging every contact and simply enjoy operating radio, while Log4OM quietly works in the background.
For me, that is the best kind of software: the kind that performs its job so efficiently that it almost goes unnoticed.

Some Other Companions That Also Deserve a Place



Not every program needs to be on the cover.
There are small tools that make everyday operation much easier.

- SDR Console, for those who enjoy exploring the spectrum with SDR receivers.
- SDR++, lightweight, modern, and surprisingly powerful.
- Ham Radio Deluxe, a complete suite for transceiver control and contact logging.
- VarAC, a newer approach based on VARA HF that combines messaging with excellent weak-signal capabilities.
- N1MM Logger+, practically essential for those who live the excitement of contests.

Every operator will eventually find their own favorites.
That is part of the journey.

In the End, the Best Software Is Still the Operator

Over the years, I've come to realize that no software makes better contacts for us. It can't replace a well-designed antenna, change the whims of propagation, or substitute for the experience that only comes from countless hours on the air. What it can do, however, is open doors we never even knew existed.
Today, my computer has far more programs installed than it did on that first night when I connected a simple cable between my transceiver and the computer's sound card. Yet every time I power up my station, I still feel the same sense of curiosity. Because behind every decoded signal, there is still a person, another station, and a new story waiting to be discovered.
And in the end, that has always been what amateur radio is all about.



SMALL DETAILS THAT TRANSFORM AN ORDINARY STATION INTO A TRUE COMMUNICATION CENTER

Accessories That Truly Make a Difference







By: Julio Mercado WP4PUX

People say that the radio is the most important part of a station... and technically, they are right. Without the radio, there is no transmission, no reception, no DX, and no excuse to stay awake until two in the morning saying, "Just one more station and I'll go to sleep."

But over the years, I have learned something: a good radio paired with the right accessories can create a completely different experience.

It is like having a great car. You can have the most powerful engine in the world, but if the tires are worn out, the seat is uncomfortable, and the air conditioning does not work, the journey will not be the same. Amateur radio is exactly the same.



The SWR and Power Meter: Our Best Advisor
We all like to believe that our antenna is perfect.

But the antenna does not always agree with us.
A good SWR and power meter is like that honest friend who tells you the truth, even when it hurts:
—"Julio, that antenna needs some help."
And we answer:
—"But I built it with a lot of love."
Amateur radio is also about that: learning, adjusting, experimenting, and trying again.



The Power Supply: The Silent Heart

We often talk about the radio, the antenna, and the microphone, but we sometimes forget something fundamental: the power source.
A quality power supply can make a huge difference.
A poor-quality supply can cause:

- Noise.
- Interference.
- Voltage fluctuations.
- Transmission problems.

A stable station begins with a reliable power supply.

The Antenna Tuner: That Little Great Hero
Some people see an antenna tuner as just a secondary accessory.

I see it as that friend who shows up exactly when you need it most.
How many times have we had an antenna that is not exactly where we want it, or a band where the impedance is not perfect?
That is when our faithful companion appears:
—"Don't worry, Julio, I'll take care of it."
And we answer:
—"Thank you, my friend. You just saved me from climbing onto the roof with a ladder."
Because let's be honest: after a certain age, installing or adjusting an antenna stops being just a technical task and starts becoming a survival adventure.



Headphones: When the World Disappears

A good pair of headphones can completely change the experience.

Suddenly, the following disappear:

- The television in the living room.
- The neighbor's dog.
- The noise from the street.
- The family asking: "Are you done with that radio yet?"

Well... maybe that last one never completely disappears.
But a good pair of headphones allows us to focus on those weak signals that once seemed impossible to hear.

That moment when a DX station emerges from the noise and we successfully copy its call sign is one of those small victories that make this hobby so special.

I remember when I started improving my station. I was happy with my equipment, looking at it like someone who had just bought a new toy. I would turn on the radio, listen to distant stations, and think:
—"This is the greatest thing ever! I already have everything I need."
How innocent I was!
Over time, I discovered that those small accessories we often overlook are the ones that truly make us enjoy radio even more.



The Microphone: The Voice of Our Station

One of the first things I noticed was the difference in audio quality.
I used to think:
—"As long as I have a microphone connected, I'm ready."
But after listening to my own recorded signal, I thought:
—"My goodness! It sounds like I'm transmitting from inside an empty paint can."
That is when I understood that a good microphone is not a luxury; it is our introduction to the world.
Clean, clear, and pleasant audio makes other radio amateurs want to stay and have a conversation with us. After all, radio does not only transmit signals... it transmits personality.



The Small Accessories We Eventually Learn to Appreciate

Over the years, we discover other inseparable companions:

- A good desk lamp.
- Cable organizers.
- A quality CW key.
- A comfortable keyboard for digital modes.
- Protection against electrical surges.
- A proper grounding system.
- A comfortable chair.

Because we should also admit it: we spend many hours in the shack. If we are going to be there, we might as well be comfortable.

The Great Lesson

After many years in this wonderful hobby, I have learned that a station is not built simply by buying the most expensive radio.
A station is built through details.
Every accessory matters. Every improvement has a story. Every piece we add represents a new experience.
Because, in the end, amateur radio is not just about talking through a piece of equipment.
It is about hearing a weak signal from thousands of miles away, recognizing a friendly voice from the other side of the planet, and feeling that excitement that only we understand.
So the next time you see that small accessory in a store or at a ham radio sale, do not dismiss it.
Perhaps that little device is exactly what your station needs to become something special.
And now, if you'll excuse me...
I'm going to turn on the radio "for just five minutes."
Although we all know that, in amateur radio, those five minutes can easily turn into three hours.

73,
Julio Mercado WP4PUX

WHAT IT ACTUALLY TAKES TO FEED FIELD DAY

A Field Day After-Action Story and Planning Guide

By Terry P. Rossi, N2LQH



Saturday breakfast in motion: hot food, an enclosed trailer for supplies, and a hospitality operation built to keep Field Day moving.

It was 7:30 Saturday morning, and I was outside cooking breakfast in the rain. Thirty-six eggs had been cracked and whisked the night before. A 42-cup coffee urn was already running. Hash brown patties covered the flat-top griddle, and pulled pork had begun its journey on the smoker Thursday afternoon.

Most people arrive at Field Day thinking about antennas, radios, generators, logging software, propagation, and operating schedules. They see stations and contacts. They usually do not see the planning required to keep everyone fed, hydrated, safe, and comfortable for an entire weekend.

Hospitality works best when nobody has to think about it. By Saturday morning, while the rain came down and the breakfast line began to form, the weeks of preparation had become invisible. People saw hot food, coffee, dry seating, and a place to gather. That was exactly what they were supposed to see.

Hospitality was not a side activity. It was part of the infrastructure that allowed Field Day to function.



The hospitality tent became a social center, a shelter and a reset point between operating shifts. Photo: Scott Dantis, AA2SD.

BUILDING A MOBILE COMMISSARY

The first major problem was transportation and storage. Coolers, cooking equipment, beverages, serving supplies and food all had to reach the site organized, protected and ready. A 6 × 10-foot enclosed cargo trailer became the warehouse.

The RV became the commissary. It provided refrigeration, freezer space, preparation surfaces, running water and electrical support for the equipment that could not be handled by ordinary extension cords alone. Previous Field Days had shown that ice would become a constant issue, so the plan included two major ice runs totaling approximately 240 pounds.

The grocery bill does not show the full scale of this kind of operation. The RV, trailer, chest freezer, griddle, roller grill, coffee urn, drink dispensers, coolers and labor were part of the hidden infrastructure that made the weekend possible.

The objective was simple: when operators came off the air, they should find food ready, cold drinks available and a place to sit before returning to their stations.



Three connected canopies, antennas, the RV and protected work areas formed a temporary support complex.



The RV and enclosed trailer supported refrigeration, storage and weather-protected logistics.

The RV became the commissary. The enclosed trailer became the warehouse.



Continuous-service equipment kept breakfast items and grab-and-go food available between scheduled meals.

FIELD DAY BY THE NUMBERS

3 days of hospitality
$600 initial food budget
$912.28 final documented expense
240 lb of ice
1 RV commissary
1 enclosed 6 × 10-foot trailer
Approx. 35 Friday, 40 Saturday, 40 Sunday

RAIN, SERVICE, AND SUNDAY MORNING



Saturday service combined hot holding, sides, buns, beverages and grab-and-go food in a compact, protected line. Photo: Scott Dantis, AA2SD.

Saturday's rain changed nearly every part of the plan. The hospitality tents filled with operators, visitors and guests seeking shelter. Cooking continued outside, because the people could get wet, but the food could not.

One of the most useful pieces of equipment was the commercial hot dog roller. It required little attention, provided separate cooking and holding zones, and kept food protected behind glass. That mattered because Field Day meal service cannot operate like a restaurant. Operators may be on the air when lunch begins. Others may finish a shift after the main serving period. Something hot and ready must remain available.

Saturday's main service included burgers, hot dogs, pulled pork, homemade coleslaw, baked beans, corn, sides, beverages and hoagie trays. Lunch was divided into two sittings so operators could eat and return to their stations.

Then came Sunday morning. Under the "Donna's Delicacies" banner, Donna Dantis presented homemade quiche, yogurt parfaits with homemade granola, croissants, homemade strawberry jam, fresh fruit and blackberry-sage iced tea. Hospitality had moved beyond feeding people. It had created a moment participants would remember.



Pulled pork smoked ahead of the event became one of the weekend's memorable meals. Photo: Terry Rossi, N2LQH.



Donna's Sunday presentation turned breakfast into a signature hospitality moment. Photo: Scott Dantis, AA2SD.

Food brought people into the tent. Fellowship kept them there.

WHAT HOSPITALITY CONTRIBUTES



Members and guests of the South Jersey Radio Association gather behind the K2AA banner during Field Day 2026.

The original approved hospitality budget was $600. After Friday attendance exceeded expectations and a second purchasing round became necessary, additional spending was approved. Final documented food and supply expenses totaled $912.28.

Those figures still do not describe the real investment. They do not include the RV, trailer, chest freezer, griddle, roller, coffee urn, coolers, planning time, shopping, preparation, loading, cooking, cleanup or teardown.

The grocery bill was the easiest part to calculate. The contributed labor and equipment made the operation possible. The lesson for other clubs is clear: hospitality should be planned as infrastructure, not as an afterthought.

LESSONS FOR THE NEXT TEAM

Recruit volunteers early
Prepare protected cooking space
Buy fresh ice daily
Increase Saturday breakfast quantities
Keep hot food available between meal periods
Simplify labor-intensive sides
Add round tables to turn seating into fellowship

Hospitality is not only about feeding people. It creates the place where Field Day becomes a community.



ABOUT THE AUTHOR

Terry P. Rossi, N2LQH, is a South Jersey amateur radio operator and active member of the South Jersey Radio Association. His interests include HF operating, FT8, SSB, POTA, satellite communications and VHF/UHF experimentation. He writes about the people, planning and behind-the-scenes work that make amateur radio events possible.

Photos courtesy of Terry P. Rossi, N2LQH, and Scott Dantis, AA2SD.

THE DAY I LEARNED TO LISTEN

The Journey to Improving My Amateur Radio Station's Reception



For a long time, I believed that a ham radio station improved mainly with more power, a bigger antenna, or a state-of-the-art transceiver. Like many fellow operators who share the passion for communications, I was excited by the idea of reaching farther, getting better signal reports, and increasing the number of contacts in my logbook. I thought the secret to a great station was transmitting stronger.

But one night, after several failed attempts to complete a contact with a distant station, I learned one of the most important lessons in my journey as a ham: the true strength of a station begins with the ability to listen.

I was operating on the 40-meter band, one of my favorites for both local and long-distance communication. A station was calling from a quite distant location, and I could hear parts of their callsign between the noise. The signal was there, but it kept fading in and out. At times I could catch a word, then several seconds of silence, and then only noise. I tried changing the filter, adjusting the audio, moving the antenna, and increasing the receiver gain, but nothing improved the situation.

> “The true strength of a station begins with the ability to listen.”

My first reaction was: “I need more power.” I thought that if my signal came out stronger, maybe I could also hear better. However, after some reflection and more study about how a station works, I realized I was looking for the solution in the wrong place. The problem was not my transmitter; it was everything that was happening before the signal reached my ears.

That was the moment my real learning about reception began.

THE INVISIBLE ENEMY: NOISE

The first step was to understand that many modern stations do not have sensitivity issues in their receivers. Today’s radios are excellent at picking up extremely weak signals. The real enemy is often the noise surrounding our station.

I started observing my environment in a new way. I turned off electronic devices one by one, checked power supplies, cables, chargers, anything plugged into the AC mains, and any item that might generate interference. I discovered that some devices that seemed completely harmless could fill the bands with unwanted signals.

I learned that improving reception does not always mean buying something new. Many times it means removing what is damaging the signal we already have.

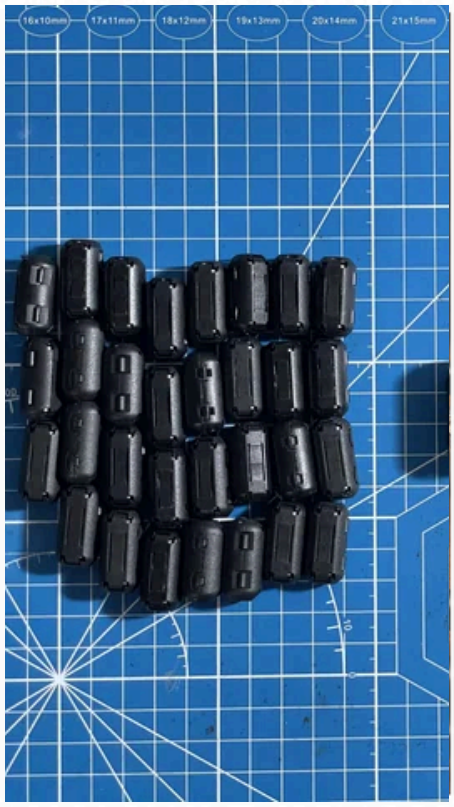
2 INSTALL FILTERS AGAINST INTERFERENCE

Small changes that produce big results.

Use ferrite chokes on cables, improve the ground connection when possible, and keep radio frequency lines away from other electronic systems. These small changes can make a big difference.

After these improvements, those weak signals that once seemed lost started to appear much more clearly. Noise may not disappear completely, but we can reduce it and learn to live with it.

Understanding what noise is and how it affects our reception is one of the keys to improving my station without spending large amounts of money.



Ferrite chokes and a good ground connection: essential allies for clean reception.

COMMON NOISE SOURCES

Switched-mode power supplies
Chargers, adapters and inexpensive power supplies can inject noise into the bands.

Computer equipment
Computers, monitors and peripherals generate radio frequency interference.

LED lighting
LED lamps and dimmers are major sources of noise.

Wireless devices
Wi-Fi routers, Bluetooth, IP cameras and other wireless devices radiate broadband noise.

Power lines
Noise can travel through electrical wiring and enter our station.

3 THE ANTENNA: MUCH MORE THAN AN ELEMENT FOR TRANSMITTING

Another important discovery was changing the way I think about antennas.

For years, many hams have talked about antennas mainly in terms of gain, power handling or transmission distance. But an antenna is also our first receiving system. It is the point where the journey of a signal toward our receiver begins.

I experimented with different configurations, adjusted heights, checked connections and learned that a well-installed antenna can make an impressive difference. An antenna with low noise and a good location can allow us to hear stations that a seemingly larger antenna cannot capture due to interference or installation problems.

I also realized that there is no perfect antenna for every situation. Each station has its own challenges: space available, urban environment, nearby interference, type of terrain and the bands we want to work.

> The best antenna is not always the most expensive one; many times it is the one best adapted to our conditions.



A well-installed antenna is the first key to good reception.

4 LEARNING TO USE THE TOOLS OF THE RADIO

Another important step in my learning was discovering that my own equipment had many tools I was not using to their full potential.

Digital filters, adjustable bandwidth, the audio equalizer, automatic gain control (AGC) and noise reduction systems are not just extra features found in the manual. They are tools designed to help us separate a weak signal from the surrounding noise.

I started experimenting more with the settings. I discovered that sometimes a filter that is too wide allows too much noise in, while one that is too narrow can remove part of the signal information. I learned that each contact requires listening, analyzing and adjusting.

> “Ham radio is not just about pressing a button and talking. It is a combination of science, experience and patience.

QUICK TIPS

- Turn off and unplug devices to identify noise sources.
- Use ferrite chokes on all cables entering or leaving your station.
- Keep antennas as far away as possible from interference sources.
- Explore and understand the functions of your radio: they are your best allies.
- Trust your ears and be patient: practice makes you a better operator.

AUTHOR'S NOTE

Every station is a different world. What works for me may not be the same for you. The important thing is to experiment, learn and enjoy the process.

73,
and I'll listen for you on the bands.

5 LEARNING TO USE THE TOOLS OF THE RADIO

My radio had many tools that I was not taking full advantage of.

Modern radios include advanced features designed to help us separate the weak signal from the noise. Learning to use them correctly changes everything.

DIGITAL FILTERS
Allow you to reduce the bandwidth and eliminate out-of-band noise.

ADJUSTABLE BANDWIDTH
A filter that is too wide lets in noise; one that is too narrow can remove part of the signal.

AUDIO EQUALIZER
Enhances voice tones and improves the intelligibility of the received signal.

AUTOMATIC GAIN CONTROL (AGC)
Helps maintain a constant audio level without strong signals overloading the receiver.

NOISE REDUCTION
Filters out random components and improves the signal-to-noise ratio.



i Every band, every moment and every signal are different. The key is to experiment and adjust until you find the optimal point.

6 THE IMPORTANCE OF THE OPERATOR'S EAR

Over time I discovered something no equipment can replace: the trained ear of the ham operator.

Learning to copy a weak signal is a skill that develops with practice. At first we only hear noise. Then we begin to identify patterns, pauses, tones and small fragments of information that allow us to reconstruct a transmission.

> "Many experienced operators can copy signals that to a beginner seem completely invisible. It's not magic; it's experience accumulated during many hours in front of the receiver.

HOW TO TRAIN YOUR EAR:

- Listen carefully every day, even when you have no contact.
- Try to copy weak signals without asking for reports.
- Compare how different voices, accents and operating modes sound.
- Be patient and consistent: the experience comes with hours of listening.



Practice and patience turn noise into valuable information.

7 THE VALUE OF A GOOD RECEIVING STATION

Today, when I turn on my station and can hear signals that before I couldn't capture, I remember that night when I thought I needed more power. Now I understand that a powerful station is not just the one that transmits far, but the one that can listen to what others cannot hear.

Good reception lets us enjoy ham radio more. It opens the door to unexpected contacts, distant expeditions, weak communications during difficult conditions and unique moments that make this hobby so special.

The thrill of hearing a remote station that barely reaches above the noise by a few decibels and finally completing the contact is one of the most rewarding experiences for any ham.

WHY DOES GOOD RECEPTION MAKE THE DIFFERENCE?

- It allows you to work stations others cannot hear.
- It increases your chances of making DX in tough conditions.
- It improves your understanding of propagation.
- It gives you greater satisfaction and confidence as an operator.

8 THE SEARCH NEVER ENDS

One of the most beautiful things about ham radio is that we never stop learning. Every change in the station, every test with a different antenna and every adjustment teaches us something new.

After improving my reception I realized that true progress doesn't always come from having more equipment, but from knowing better how to use what we already have. A simple station, but well adjusted, can exceed expectations when the operator understands how to make the most of it.

> "Ham radio is not just about making our signal reach farther. It's also about stopping, listening carefully and discovering that even among the noise, there is always a signal waiting to be found.

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> A simple station, but well adjusted, can exceed expectations when the operator understands how to get the most out of it.



Listening is discovering a world that others cannot hear.

10 BECAUSE IN THE END... HAM RADIO IS LISTENING

Ham radio is not just about making our signal reach farther. It is also about stopping, listening carefully and discovering that even among the noise, there is always a signal waiting to be found.

Every contact begins with the ability to listen. Every friend made on the bands is found in those signals waiting to be heard. And this story that we live as hams begins with an attentive and patient ear.



The silence of the night is the best ally for those who listen.

LESSONS LEARNED ON THIS JOURNEY

1. NOISE IS THE INVISIBLE ENEMY

Identify and eliminate noise sources is the first step to better reception.

2. THE ANTENNA IS KEY

A well installed and properly placed antenna can open doors that once seemed closed.

3. KNOW YOUR EQUIPMENT

The tools in your radio are there to help you. Learn to use them.

4. TRAIN YOUR EAR

Constant practice develops your skill to copy weak signals.

5. PATIENCE IS YOUR BEST ALLY

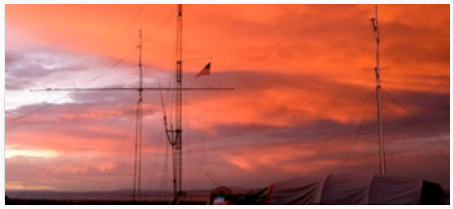
The best contacts often come when we least expect them.

> A powerful station is not just the one that transmits far, but the one that can hear what others cannot hear.

OUR HOBBY, OUR PASSION

Ham radio connects people, cultures and places. Listening is understanding, empathy on the bands, giving space to others and learning from every conversation.

Listening is respecting. Listening is learning. Listening is ham radio.



PRACTICAL TIPS

Make an inventory of noise sources and eliminate them.

- Use ferrite cores on cables and RF chokes where needed.
- Keep antennas and connections in good condition.
- Adjust filters according to band conditions.
- Reduce receiver gain if the noise is too high.
- Listen to different bands and modes: there will always be something to learn.

> In every weak signal there is a story. In every contact, a new friendship. In every listen, the magic of ham radio.

73, AND WE'LL LISTEN TO YOU ON THE BANDS

Thank you for joining me on this journey of learning and passion for radio. May every listen bring you closer to what you seek and every contact leave you with an unforgettable memory.

We'll listen to you on the bands!

73, Good DX!

SWR Did You Know?

RADIO HISTORY IN 100 WORDS

DID YOU KNOW?

Why Is the Calling Signal CQ?

CQ began as a general call in the telegraph era, long before amateur radio existed. Today, it remains the universal invitation to any station listening.

SWR
THE VOICE OF WORLDWIDE RADIO AMATEURS

THE SHORT ANSWER:

CQ began as a general call in the telegraph era, long before amateur radio existed.

Today, it remains the universal invitation to any station listening.



A TRADITION THAT CROSSED FROM TELEGRAPH TO RADIO

Long before radio waves carried voices across the world, telegraph operators needed an efficient way to call every station that might be listening.

The signal CQ became that universal call. As wireless communication evolved in the early 1900s, maritime operators and the first radio amateurs naturally adopted it.

More than a century later, every time a station calls "CQ", it continues one of the oldest traditions still heard on today's amateur bands.



THE NEXT TIME YOU HEAR "CQ"... remember you're listening to more than a call. You're hearing history still alive on the air.

QUICK FACTS:

- CQ predates amateur radio by several years.
- It was originally used by commercial telegraph operators as a general call.
- Today, CQ is recognized worldwide as an invitation for any station to answer.
- Every CQ connects today's operators with more than a century of communication history.

Historical references compiled from publicly available amateur radio and telecommunications history sources.

THE RULES OF THE ETHER

"A courteous operator is recognized instantly: his signal is clean, his word is clear, his turns are respectful and his attitude is positive."

The 10 commandments of the courteous ham



Photo by: ARRL.com

Imagine the radio spectrum as a large public park. We can all enjoy it, but we need some basic rules of coexistence so it doesn't become chaos where nobody can be heard. Those rules are not heavy bureaucracy; they are courtesy made into procedure, the oil that keeps millions of communications flowing every day without collisions.

Today we are not talking about technique. We are talking about **respect, common sense** and **good practice**. These are the rules that, once internalized, will make you sound like an experienced operator and will make others want to contact you.

1 LISTEN, LISTEN AND LISTEN (THE GOLDEN RULE)



Before transmitting on any frequency, listen for at least one minute. Is there a conversation? A contest? Someone calling CQ weakly? Transmitting over someone (QRM) is the number one lack of courtesy. If in doubt, ask "QRL?".

2 THE POWER OF PATIENCE (THE GIFT OF PAUSING)



On HF, especially, signals travel far and can overlap. If you and another station start transmitting at the same time, stop immediately. Say "Excuse me, I yield to you" and wait. The station with the frequency, or the stronger station, usually continues. Fighting for a frequency is very bad form.

3 IDENTIFY YOURSELF, ALWAYS AND CORRECTLY



The law is clear: you must give your call sign at the beginning and end of each contact, and at least every 10 minutes during a long conversation. But beyond the law, it is your name in the radio spectrum. Say it clearly, with phonetics, and with pride.

THE RULES OF THE ETHER

The 10 commandments of the courteous ham

"A courteous operator is recognized instantly: his signal is clean, his word is clear, his turns are respectful and his attitude is positive."

4 YIELD THE FLOOR CLEARLY

Never release the microphone without saying "over". Clearly indicate that you have finished speaking. And when the conversation is over, say "clear" (clear) to release the frequency. Avoid endless "goodbyes".

5 REPORT SIGNALS HONESTLY (THE RST)

If your interlocutor's signal is weak and noisy, say "33" (three and three), not "59" (five and nine). An inflated report does not help them improve their station and breaks the usefulness of the system. Be constructive: "you have QSB" (fading) is more useful than "I can barely hear you".

6 RESPECT ORGANIZED ACTIVITIES

If you tune to a frequency and hear a contest or an emergency net with a clear controller, do not interfere. It is their reserved activity. If you want to participate, wait to be invited or learn the rules first.

7 WATCH YOUR LANGUAGE AND TOPICS

The airwaves are public. Avoid offensive language, heated political debates, religion or offensive comments.
We don't know who, from which country or of what age, is listening. Technical talk, cordial greetings and cultural exchange are the pillars.

REMEMBER:

- Speak clearly and courteously.
- Listen with attention.
- Respect turns.
- Contribute to a positive environment on the air.

"Courtesy on the airwaves is not just a rule, it is what keeps our ham radio community strong and alive all over the world."



THE RULES OF THE ETHER

The 10 commandments of the courteous ham

8 BE A GOOD CITIZEN OF THE SPECTRUM (AVOID THE "BAND HOG")

- Do not use more bandwidth than necessary. A well-adjusted SSB signal is narrow. An audio signal that is overdriven or poorly filtered ("splatter") takes up twice the bandwidth and bothers your neighbors.
- Keep your station clean. Unfiltered harmonics or an open microphone that activates only your QRM can interfere with others.
- Ask before calling: "Is anyone on frequency for a net or control?".

9 THE REPEATER IS A COMMUNITY TOOL

- Pause a moment before keying so the last station can finish and others can enter.
- Do not monopolize. Very long conversations block the channel.
- Identify in each transmission (it is still important here).
- Use the proper tone (CTCSS) if the repeater requires it, to avoid accidental activation.

10 HELP, GUIDE AND BE PATIENT WITH NEW HAMS

Did you hear someone make a protocol error or have technical problems? Approach them in a friendly and private way if possible, or offer help on frequency in a constructive manner. We were all beginners once. Patience and the desire to help are the soul of the community.



"A courteous operator is recognized instantly: his signal is clean, his word is clear, his turns are respectful and his attitude is positive."

THE SPIRIT BEHIND THE RULES: «DUTY BEFORE COMFORT»

- Maximize the fair use of a limited resource (the spectrum).
- Ensure the effectiveness of emergency communications.
- Foster an environment where learning and enjoyment are possible for everyone.
- Protect the reputation of the amateur service in the eyes of administrations and the public.

When you operate with courtesy, you not only respect yourself. You respect everyone who shares the spectrum: those who came before you and those who will come after you.

IN SUMMARY:

The best technology in the world is useless without humanity to use it correctly. Your courtesy is your best calling card on the airwaves.

You're almost there!

EA1JAB – Norberto – Happy Ham Radio! 73!

The Eggbeater

The Antenna That Revolutionized Amateur Radio Satellite Communications (Part 1)

Understanding the theory behind one of the most ingenious antennas ever designed for satellite communications.

By: The Extraterrestrial (Pseudonym)

"The first time I heard the signal of an amateur radio satellite crossing the sky, I realized that amateur radio had an entirely different dimension. It was no longer just about communicating with another city or another continent; now the challenge was talking through a repeater traveling at nearly 28,000 kilometers per hour, hundreds of kilometers above our heads. I soon discovered that accomplishing this required more than just a good radio. The antenna was the true star of the story."
— J.M.C.

Photo by: Karl Rinne

Many radio amateurs begin their first satellite contacts using a conventional vertical antenna. Others choose a handheld Yagi, patiently following the satellite's movement across the sky. However, there is a third option that has earned the respect of thousands of operators around the world for a very simple reason: it allows satellite operation without the need for a rotor, without manually tracking the satellite, and with surprisingly uniform coverage.

Its name is Eggbeater.

Although its appearance may seem unusual at first glance, two large intertwined metal loops that resemble the old kitchen eggbeater that gave it its name, behind this simple structure lies extraordinary electromagnetic engineering. Thanks to its design, the Eggbeater is capable of producing circular polarization, a fundamental characteristic for maintaining reliable communications with Low Earth Orbit (LEO) satellites, whose changing orientation causes the polarization of their signals to vary constantly.

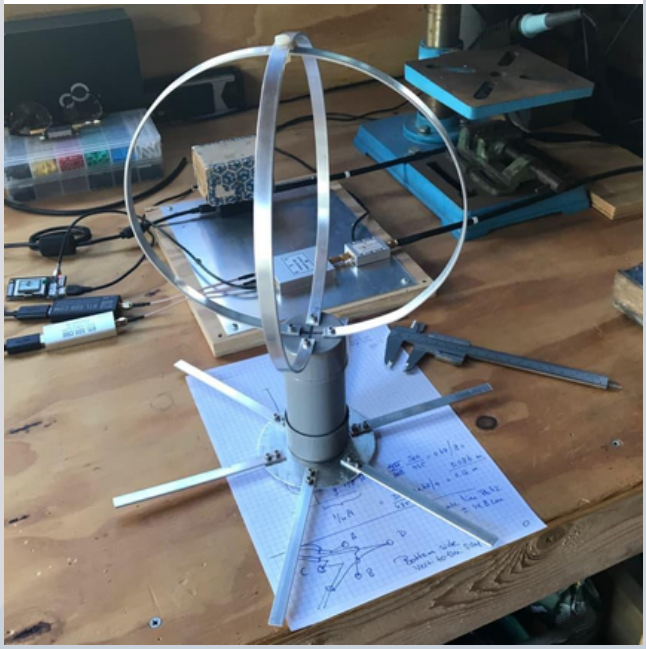
Today, stations around the world use Eggbeater antennas to communicate through FM satellites, linear satellites, receive telemetry, and even track signals from the International Space Station (ISS) during its passes over their regions.

But how did this antenna come about? Why does it work so well? What makes it different from other antennas?
In this first part, we will answer those questions and establish the foundation so that, in the next edition, we can build one with our own hands.









A Problem Every Satellite Operator Faced

During the early years of amateur radio satellite communications, most operators used conventional Yagi antennas.

Yagis provide excellent gain, but they present two important challenges when used for satellite work:

- They are highly directional.
- Their polarization is normally linear.

As a satellite moves across the sky, its orientation continuously changes in relation to the ground station. This causes the polarization of the received signal to change constantly as well.
The result was frustrating.

The signal could be heard perfectly for a few seconds and then almost completely disappear moments later, even though the satellite was still clearly visible.

Many operators assumed the satellite was malfunctioning, when in reality the problem was the mismatch between the satellite antenna's polarization and the ground station antenna's polarization. A vertical antenna can experience significant losses when attempting to receive a circularly polarized signal or when the polarization changes during the satellite pass.
It was clear that a different solution was needed.



The Search for an "All-Sky" Antenna
Engineers began asking a very simple question:

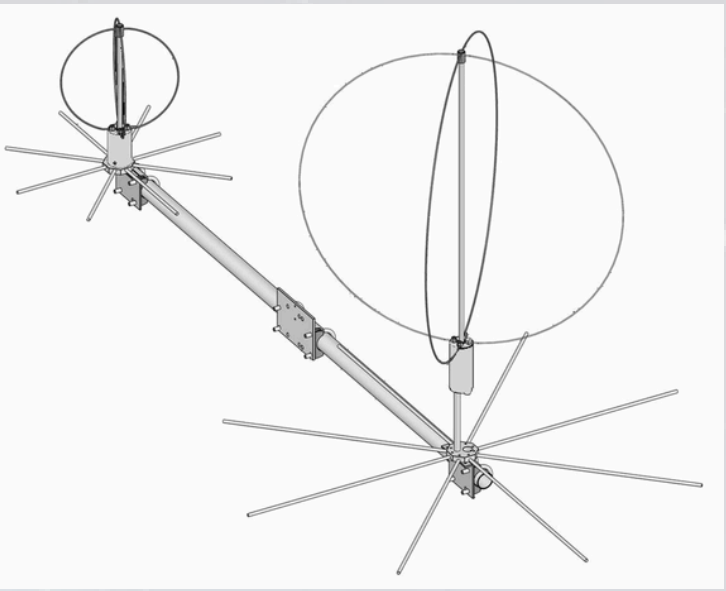
Would it be possible to build an antenna capable of receiving signals from any direction in the sky without constantly needing to rotate it?
The answer was yes.
But it would not be a conventional antenna.
It had to meet several requirements:

- Cover practically 360° of the horizon.
- Maintain good sensitivity toward the zenith.
- Provide the proper polarization for satellite communications.
- Be relatively simple to build.
- Avoid the need for complex tracking systems.

This led to the development of the family of omnidirectional satellite antennas, among which two designs still stand out today as references:
Turnstile
Eggbeater
Each design has its own advantages, but the Eggbeater achieved an excellent balance between simplicity, cost, and performance, making it one of the favorite choices among the AMSAT community.

Why Is It Called Eggbeater?



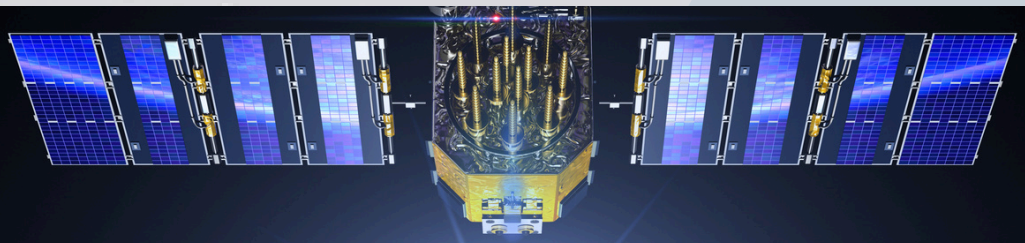


The name comes from the old manual kitchen eggbeater used before the arrival of electric mixers. Those who remember these utensils will immediately notice the resemblance:

- Two large metal loops.
- Crossed with each other.
- Forming an open and symmetrical structure.

Early radio amateurs began informally referring to it as the "Eggbeater Antenna," and the name eventually became the standard designation used by practically the entire international community.
An Antenna That Looks Different From the Very Beginning
When we look at an Eggbeater, we see two large elliptical loops positioned at a right angle to each other.
There are no director elements.
There are no reflectors.
There are no traps.
There are no visible coils.
Everything appears almost too simple.
However, that simplicity is precisely what makes it so effective.

Each loop functions as a complete radiator. When both are fed with energy exactly 90 electrical degrees out of phase, they generate an electromagnetic field that does not remain fixed, as it does with a traditional dipole.
Instead, the field begins to rotate.
That rotating field produces a circularly polarized wave, ideal for maintaining more consistent reception of signals from satellites whose orientation changes continuously.



A Simple Idea… Extraordinary Physics

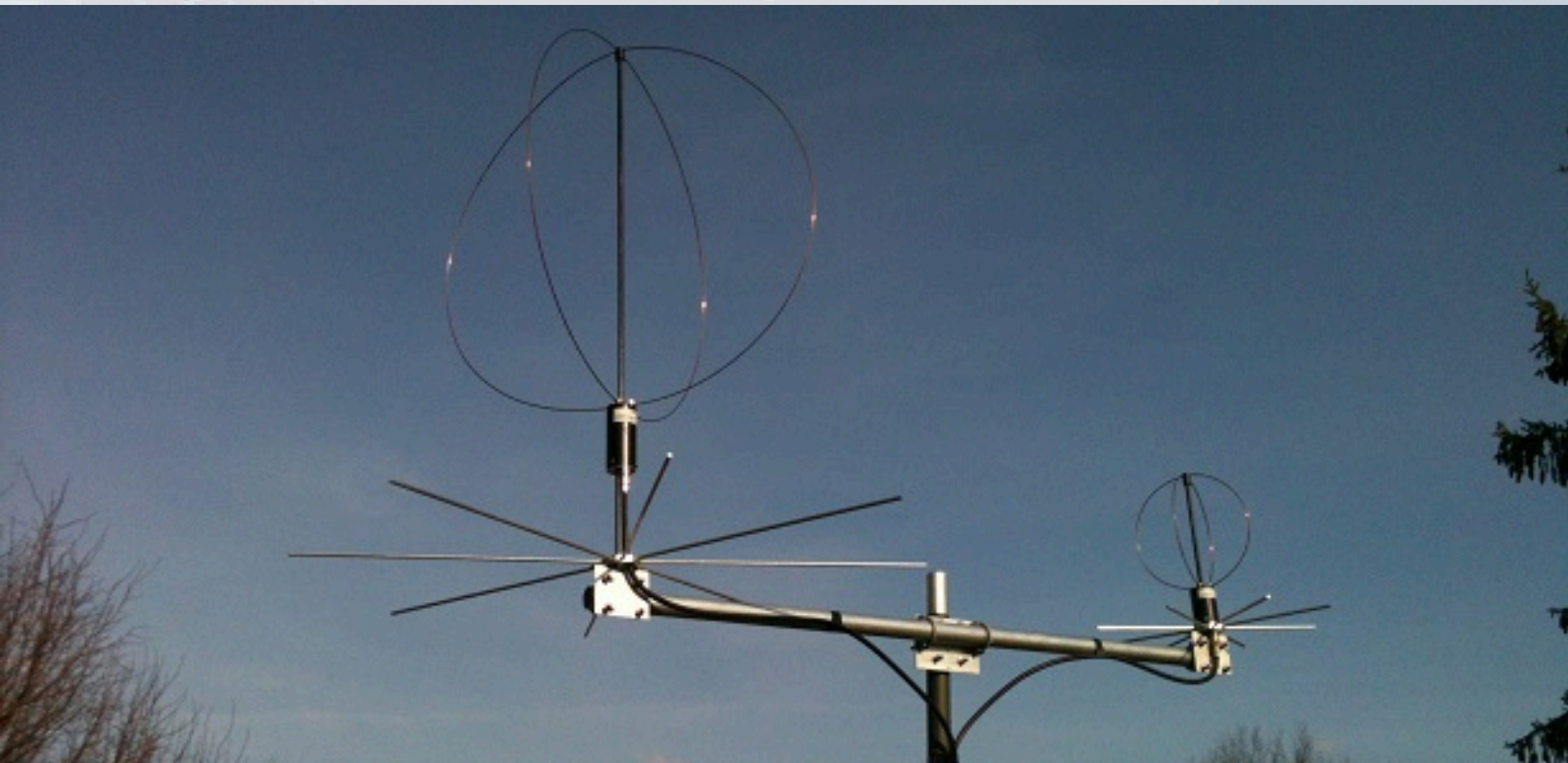
This is where the Eggbeater stops being just an antenna and becomes a true work of engineering.
Imagine a rope.
If we move it only up and down, the wave will always oscillate in a single plane. This would be similar to linear polarization.
Now imagine two people holding the same rope. One moves the rope vertically. The other moves it horizontally. But the second person starts exactly one quarter of a cycle after the first.
The result is no longer a linear oscillation. The end of the rope begins to trace a circle.
That is exactly what happens inside the Eggbeater.
The two loops work together. One begins its cycle, and the other starts exactly 90° later. The combination produces a wave whose electric field vector continuously rotates as it travels into space.
This phenomenon is called circular polarization, and it is one of the keys to this antenna's excellent performance in satellite communications.

Why Is Circular Polarization So Important?

A radio signal has an orientation.
That orientation is called polarization.
We can mainly find three types:

- Vertical polarization.
- Horizontal polarization.
- Circular polarization.

When a vertical antenna attempts to receive a horizontal signal, a large portion of the energy simply cannot be captured.
With satellites, the problem becomes even more complex.
Satellites rotate.
They wobble.
They experience small changes in attitude.
Their antennas continuously change their apparent orientation in relation to an observer on Earth.
For this reason, many satellites use circular polarization or produce a polarization that changes during their pass. An antenna with circular polarization helps reduce the losses associated with these changes and provides much more consistent reception.



In the Next Issue...

In this first part, we explored the history and the principle that makes the Eggbeater antenna unique. However, we have only opened the door to the subject.

In Part 2, we will take a deeper look into its electromagnetic operation, explain how the two loops generate a circular wave, analyze its radiation patterns, and compare its performance with antennas such as the Turnstile, QFH, and Yagi.

We will also begin preparing for the practical construction, understanding why every dimension and every centimeter of coaxial cable can influence the final performance.

SWR Magazine

"Exploring the world of amateur radio, one frequency at a time."

Did You Know?

A polarization mismatch between the transmitting and receiving antennas can cause significant signal losses. That is why circular polarization is widely used in satellite communications to minimize the effects of satellite rotation and changing orientation, improving link stability.



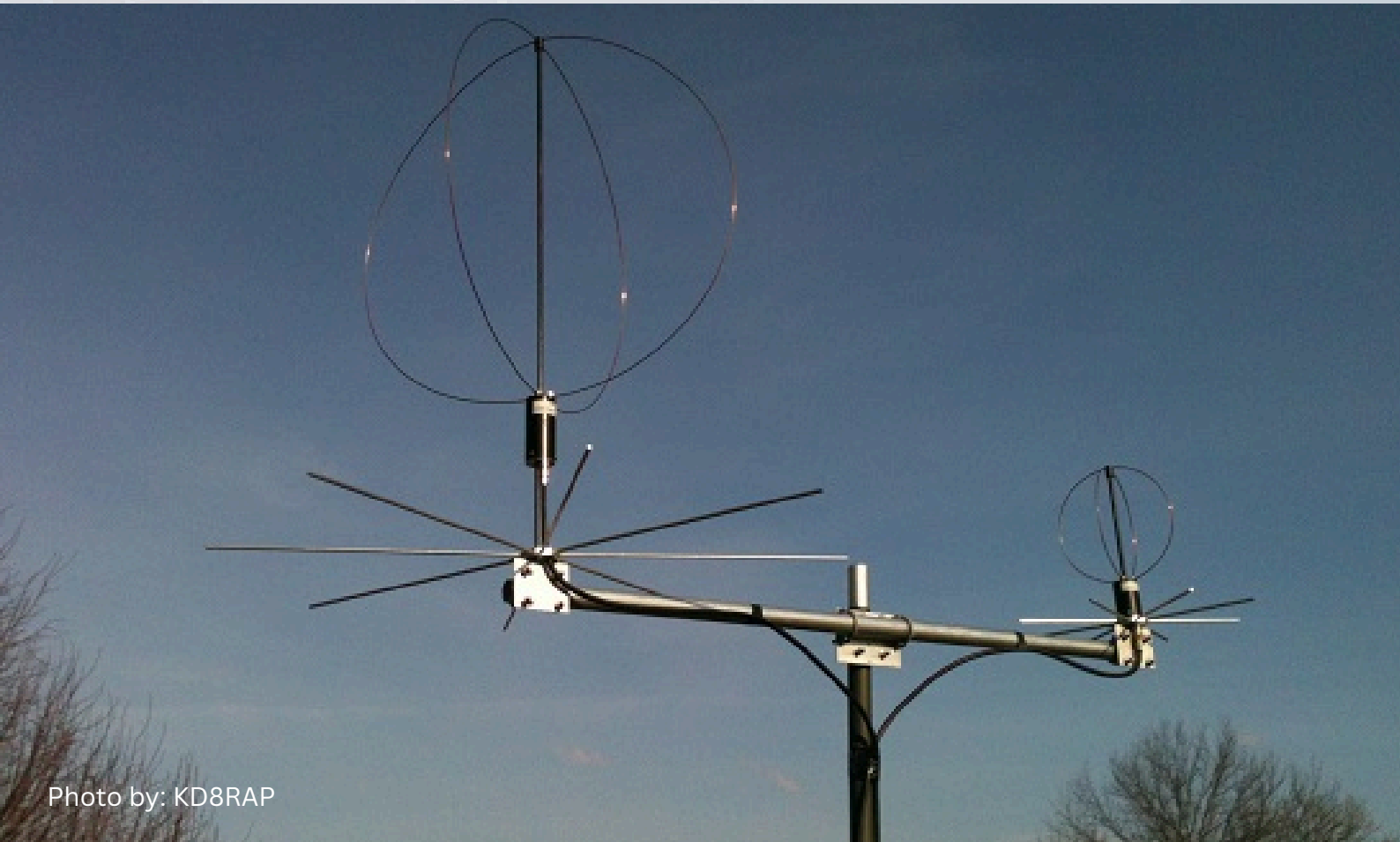


Photo by: KD8RAP

THE FORGOTTEN

COLLINS CLONES

The Story of the Eldico S-119 and RELiant Radio Lines

By David Beckler, NØSAP

A rare second-source radio family, born from Cold War procurement and later reborn under the RELiant name, remains one of the least documented chapters in American communications history.



A group view of the RELiant communications equipment preserved by the author.

A FORGOTTEN BRANCH

In the world of military communications equipment, few radios command as much respect as the legendary Collins receivers and transmitters that served the United States and its allies throughout the Cold War. Yet hidden in the shadows of that success story is a lesser-known chapter involving two rare radio lines that are often overlooked by collectors and historians alike: the Eldico S-119 series and the elusive RELiant line.

These radios, sometimes referred to by collectors as the "Collins Clones," played an important role in military and government communications during a critical period of technological transition. Their story is one of innovation, government contracts, industry politics and, ultimately, rarity.

SECOND SOURCE FOR DEFENSE

During the height of the Cold War, the U.S. Government sought a second source for high-frequency communications equipment. Collins Radio had established itself as the premier supplier of military HF communications systems, but reliance on a single manufacturer carried risks. As a result, contracts were awarded to Eldico Electronics to produce equipment that met the same operational specifications.

The result was the Eldico S-119 series. These radios were widely deployed throughout the United States, overseas military installations and U.S. territories. They also found service in a number of Military Auxiliary Radio System (MARS) stations, where dependable long-distance communications were essential.

ENGINEERING AND SECOND-SOURCE PRODUCTION



A surviving RELiant receiver from the little-known equipment line.

LOOKING TOWARD THE FUTURE

Although Eldico equipment was designed to meet government requirements, it was never regarded as the equal of its Collins counterpart in manufacturing quality and refinement. Nevertheless, the radios fulfilled their intended mission, and more than 1,500 units were produced and placed into service.

What makes the Eldico radios particularly interesting today is that they incorporated several features not found on comparable Collins equipment. Perhaps the most notable was the use of a solid-state power supply. In the early 1960s, solid-state technology was still in its infancy, representing a major shift away from vacuum-tube designs.

Another innovation was the simplified band-switching arrangement. Rather than employing the dual-switch configuration used on comparable Collins models, the Eldico design provided continuous coverage from 3 to 30 MHz through a single switching system. This made operation more straightforward and highlighted the company's efforts to modernize the platform.

These improvements did not necessarily make the radios superior to Collins equipment, but they did provide unique features that distinguished them from the products they were often compared against.

WHAT SET ELDICO APART

- Solid-state power supply
- Simplified band switching
- Continuous coverage from 3 to 30 MHz
- Government second-source production

COLLECTOR LORE AND THE RELIANT TRANSITION



The RELiant transmitter preserves the family resemblance associated with the earlier second-source designs.

RUMORS, LEGENDS AND COLLECTOR LORE

No discussion of the Eldico radios would be complete without addressing the numerous rumors that have circulated among collectors for decades.

One persistent story claims that the government wanted a backup source of communications equipment in case Collins' facilities in Cedar Rapids, Iowa, were destroyed during a nuclear attack. While the Cold War certainly influenced procurement strategies, definitive evidence supporting this specific claim remains elusive.

Another common rumor suggests that Collins sued Eldico for copyright infringement due to the similarities between the radios. Despite its popularity among collectors, there is no evidence that such a lawsuit ever occurred.

ENTER RELIANT

There has also been long-standing debate regarding the cost of Collins equipment and whether government procurement officials sought alternatives to reduce expenses. Whatever the reasons, the government's decision to authorize a second source created one of the most interesting side stories in military communications history.

After the government contract ended, a new chapter began. Radio Electronic Laboratories, better known as REL, entered the picture. Under the RELiant name, the radios that emerged were, for practical purposes, the same basic design as the Eldico units. The familiar winged emblem remained, but the branding changed.

REL then attempted to move the design into the commercial communications market, but the effort faced significant obstacles. Operating in New York, the company reportedly struggled with increasing labor costs and union pressures. REL relocated operations to Florida, but the move did not solve its financial difficulties.

COLLECTOR LORE VS. DOCUMENTED HISTORY

CLAIM
Eldico was created as a Cold War backup if Collins facilities were destroyed.

STATUS
Frequently repeated by collectors, but definitive evidence remains elusive.

CLAIM
Collins sued Eldico.

STATUS
No supporting evidence has been identified in the author's account.

CLAIM
Cost concerns influenced the search for another supplier.

STATUS
Debated among collectors; additional documentation is needed.

THE RARE SURVIVOR



The RELiant L-103 linear amplifier, one of the rarest surviving components discussed in the article.

THE L-103 AMPLIFIER: A RARE SURVIVOR

In an effort to generate revenue and establish a commercial product line, REL chose to focus on a companion amplifier known as the RELiant L-103.

Unlike the radios themselves, the amplifier represented a unique product associated exclusively with the RELiant brand. While a small number of radios were produced or converted with RELiant identification plates, surviving examples are extremely scarce and production figures remain unknown.

The L-103 amplifier may be even rarer. Many collectors are unaware that it ever existed, and surviving examples seldom appear on the market. In decades of collecting and observing military communications equipment, some enthusiasts have encountered only a single example, leading to speculation that the amplifier may be one of the rarest surviving products associated with the Eldico and REL heritage.

Despite its ambitions, REL's financial problems continued. The company ultimately closed its doors before it could establish a significant presence in the commercial communications marketplace. As a result, the RELiant line faded into obscurity.

"Sometimes the most intriguing discoveries come from the forgotten names found just outside the spotlight."

AUTHOR BIOGRAPHY TO BE PROVIDED
PHOTOGRAPHY CREDIT TO BE CONFIRMED

PRESERVING A FORGOTTEN CHAPTER

Many collectors recognize Collins equipment and the Eldico S-119 as a second-source military radio. Far fewer have encountered RELiant-branded equipment. Every surviving radio, amplifier, photograph and document helps preserve this overlooked chapter in communications history.

WATCH THE RELATED VIDEO



SPECIAL STATION HI6FCC

Operators and visitors in front of the amateur radio station installed during the Constanza Harvest Festival.

Constanza brings amateur radio to life at the Harvest Festival

From the mountain region of the Dominican Republic, HI6FCC turned an agricultural fair into a technical, cultural and international meeting point.

Source text: Jaime Collado, HI8JCT | Editorial adaptation: SWR Magazine

The Constanza Harvest Festival celebrates agricultural production, local culture and community spirit. Located in the center of the Dominican Republic, about 1,200 meters above sea level, Constanza offers a natural setting where the fair brings together producers, artisans and visitors around the fruits and crops of the area.

For the 2026 edition, amateur radio had a prominent presence through special station HI6FCC. More than a technical exhibit, the operation served as a bridge among the community, visitors and operators from different countries. During the event, radio amateurs guided the public, explained the use of the equipment and demonstrated how radio communications can support both community activities and emergency situations.

According to the communication sent to SWR Magazine, the activation integrated VHF and HF frequencies, repeaters, digital links and contacts through platforms such as DMR, C4FM, Echolink, APRS and Zello, as well as HF digital modes including FT8 and FT4. The station remained active on different bands, generating local and international participation.

The editorial value of the report is in showing an activity already completed through its results: participation, technical reach, cultural exchange and the public presence of amateur radio within a recognized community fair.

Photos supplied by Jaime Collado, HI8JCT | Constanza Harvest Festival





The operation combined HF/VHF equipment, computers, logs and digital links under a field station.







Recognition, night operation and visual identity of the activation during the fair.

EVENT FACTS

30+

authorized operators

1,800

unique contacts reported

70

approx. in-person visitors

VHF | HF | DMR | C4FM | Echolink | APRS | Zello | FT8 | FT4

A station with regional reach

The HI6FCC effort received support from groups and operators from the Dominican Republic, Puerto Rico, Argentina, Spain, Panama, Mexico and Canada. The communication highlights the collaboration of Argentina Network, the Rincón del Radioaficionado Zello channel, Spain's GARDE Group, FRAPR from Puerto Rico, Radio Club Dominicano, Unión Dominicana de Radioaficionados and other colleagues from the region.

The result was a living, constant and visible operation. For many attendees, direct contact with radios, antennas, computers and logs made it possible to see amateur radio as a modern, useful and approachable tool.

In addition to the station, the festival offered exhibits, sales and tastings of local products, gastronomy, sports and cultural activities, aeromodelling, agricultural vehicles and a mobile unit equipped with VHF/HF radios to show its role in support communications during emergencies.

The closing image was clear: radio amateurs sharing knowledge, culture and friendship from Constanza to the world. For SWR Magazine, this piece works best as follow-up editorial coverage after the event, because it documents results, community impact and international participation.

Photos supplied by Jaime Collado, HI8JCT | Constanza Harvest Festival

AUDIO BETWEEN PHOTONS:

BUILDING A VISIBLE LIGHT LINK

Valentin Glivenko VA7ZFR
Erika Natarajan VA7ISI / HJ1ISI

Visible Light Communication (VLC) is a wireless optical transmission technology that uses light within the visible spectrum of the electromagnetic range to send information. Although today it is associated primarily with LED-based systems, its historical origin dates back to 1880, when Alexander Graham Bell built the photophone, a device capable of transmitting voice using sunlight and a selenium detector.

Although visible light communication does not use radio frequency, it shares many principles with radio: a signal is modulated, transmitted through a medium, attenuated along the path, and finally must be detected and recovered by a receiver.

To understand the concept, we can compare it to radio communication (in which an electrical signal is applied to a transmitter, modulated, and sent through an antenna as an electromagnetic wave) and to VLC (where the audio signal is also modulated, but instead of feeding an antenna it is encoded by varying the intensity of a light source that, in turn, carries the information to the receiver.

In the receiver, something equivalent happens as in radio (an antenna captures the electromagnetic signal and the receiver converts it back into audio or data). In a VLC system, the solar panel or photodetector performs a similar role to a receiver because it detects variations in light (intensity modulation) and converts them into a proportional electrical signal that is then amplified and processed to reproduce the sound and recover the original information.

After that first milestone, wireless optical communication gained momentum more than a century later, especially with the development of light-emitting diodes (LEDs).

There is also propagation, but in a different way. In radio, the signal can reflect off the ionosphere, follow the curvature of the Earth, bounce off obstacles, or be lost due to attenuation. In optical communication, light must physically reach the receiver, meaning the transmitter and receiver must be pointed at each other for the light to arrive with enough intensity (called direct detection). That's why line of sight, beam alignment, light intensity, distance, reflector focusing, and ambient light become critical factors.

RADIO AND LIGHT: TWO PATHS, SAME GOAL

RADIO COMMUNICATION	VISIBLE LIGHT COMMUNICATION (VLC)
The electrical signal is modulated in the transmitter.	The audio signal is modulated by varying the intensity of light.
It is sent through an antenna as an electromagnetic wave.	Modulated light travels in a straight line toward the receiver.
The signal can reflect, follow the curvature of the Earth, or bounce off obstacles.	Light requires line of sight and is affected by distance, alignment, focusing, and ambient light.
An antenna captures the signal and the receiver converts it into audio or data.	A solar panel or photocell detects light variations and converts them into an electrical signal.

This technology offers an alternative to radio frequency communications because, unlike radio signals, visible light does not easily pass through walls, which can increase communication security in certain environments. It can be useful in places where radio frequency use is limited or not convenient, such as hospitals, airplanes, laboratories, or military facilities.



LEDs became highly attractive for this type of communication because they can be switched on and off at very high speeds so that the human eye does not perceive flicker. They also consume little power and can serve a dual purpose: lighting a space and transmitting data at the same time. This technology offers an alternative to radio frequency communications because, unlike radio waves, visible light does not easily penetrate walls, which can increase communication security in certain environments. It can be useful in places where radio frequency use is limited or not convenient, such as hospitals, airplanes, laboratories, or military facilities.

AUDIO FROM PHOTONS:
BUILDING A VISIBLE LIGHT LINK

Two students from Surrey, Valentin Glivenko (VA7ZFR) and Isaac from British Columbia (Canada) used the concept of VLC to create a very interesting experiment that can be split into two parts: a transmitter and a receiver. In the transmitter (Fig. 1A), an audio signal was applied to a circuit that controlled the current of two high-power LEDs so that, when the audio signal varied, the brightness of the LEDs also varied. This rapid variation of light carried the encoded audio information.

For the receiver (Fig. 1B), the modulated light was captured by a small solar panel or optical sensor. This converted the changes in light intensity back into an electrical signal, which was then amplified and sent to a speaker to recover the sound.

WHAT IS VLC?

Visible Light Communication (VLC) uses light within the visible range of the electromagnetic spectrum to send information. Although it is primarily associated with LED-based systems, its origins date back to 1880, when Alexander Graham Bell built the first "photophone," a device capable of transmitting voice using sunlight and a selenium detector.

The transmitter used a 12 VDC power supply and an NPN power transistor to control two 50 W LEDs mounted on heat sinks. The audio signal was input to the circuit through a 2200 µF capacitor, which allowed the varying signal to be connected directly to the audio source's DC current. Two resistors provided the necessary bias for the transistor. This way, audio variations caused the current through the LEDs to vary, modulating their brightness at high speed.

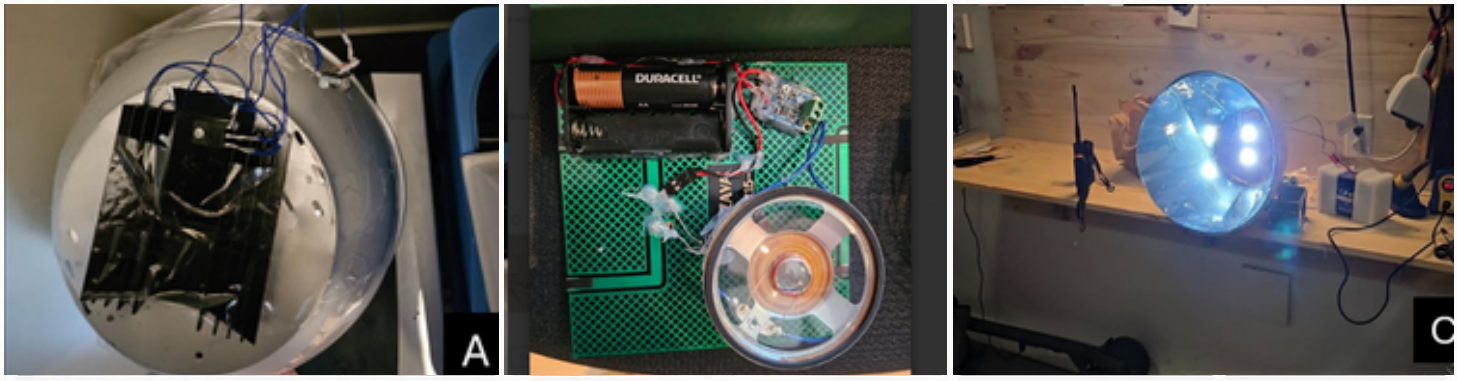
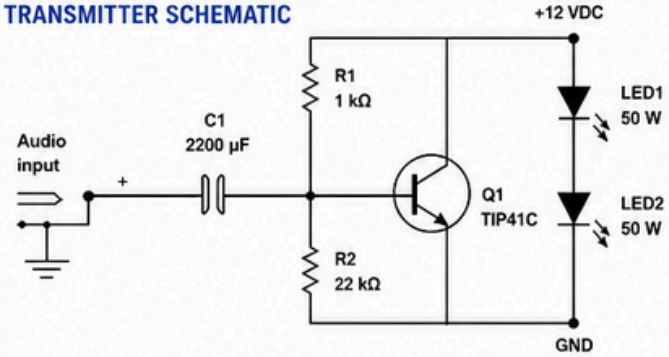


Figure 1. Experimental setup of the visible light communication (VLC) system. (A) Interior view of the transmitter, showing the control circuit, power transistor, heat sinks, and reflector. (B) Optical receiver, consisting of a small solar panel, an amplifier module, battery, and speaker. (C) Transmitter in operation during testing, with the high-power LEDs illuminating the reflector.

TRANSMITTER SCHEMATIC



MAIN COMPONENTS

- **C1:** 2200 µF (audio coupling capacitor)
- **R1:** 1 kΩ (base bias resistor)
- **R2:** 22 kΩ (base bias resistor)
- **Q1:** TIP41C (NPN power transistor)
- **LED1, LED2:** 50 W high-power LED
- **Power supply:** 12 VDC

TECHNICAL NOTE

The transistor controls the current flowing through the LEDs. When the audio signal increases, the transistor allows more current to flow and the LEDs get brighter. When the signal decreases, the brightness also decreases. This rapid variation of light carries the audio information.

At the receiver, a small 5.5 V, 120 mA solar panel was used as a photodetector. The changes in light produced by the transmitter cause changes in the voltage of the panel. This signal is sent to a PAM8403 amplifier module, which delivers up to 3 W of power to an 8 Ω speaker.

Two 3.7 V rechargeable batteries connected in series power the amplifier module and the speaker. The result was a complete and portable system capable of transmitting and reproducing audio using only light.

The experiment showed that it is possible to transmit useful information by modulating the intensity of visible light, with a direct line-of-sight range of about 100 meters. This project demonstrates how simple physical concepts can be combined creatively to achieve a functional, accessible, and educational communication system.

TESTS AND RESULTS:
A LIGHT LINK THAT TRANSMITS AUDIO

The visible light communication system developed by **Valentin Glivenko VA7ZFR** and his partner demonstrates that it is possible to transmit audio using intensity modulation of visible light. The tests were conducted in a real urban environment during the hours of late afternoon and night.

The result was clear: the audio transmitted by light was perfectly audible at the receiver.

APPROXIMATE RANGE
100 METERS

The distance achieved covered approx. 100 meters with direct line-of-sight vision. This range may vary depending on the power of the LEDs, the size and quality of the solar panel, atmospheric conditions and system alignment.

- Direct line-of-sight
- LED power
- Solar panel size and quality
- Environmental conditions



During the tests at the base of the light link, the high-power LEDs remained stable and were easily detectable by the optical receiver at a distance of 100 meters.

EXPERIMENTATION IS LEARNING

This project demonstrates that hands-on experimentation remains a powerful way to learn. With accessible components and creativity, it is possible to build systems that combine fundamental principles of physics, electronics, and communications.

> **Curiosity, observation, and perseverance continue to be the most valuable tools for any radio enthusiast.**

Visible light communication opens a fascinating field of possibilities. Perhaps this experiment is just the first step toward new and more advanced optical communication systems.

Thanks to Valentin Glivenko VA7ZFR for sharing this interesting experiment.

YOU CAN BUILD IT TOO!

This project uses economical, accessible components that are easy to obtain. With a little basic electronics knowledge and patience, you can build your own visible light link and explore new forms of communication.

CURRENT APPLICATIONS OF VLC

Today, visible light communication is actively researched for applications such as:

Indoor internet
Ideal for offices, schools, and homes where Wi-Fi may interfere with other networks.

Vehicle-to-vehicle communication (V2V)
Headlights and taillights can transmit information safely and accurately.

Intelligent lighting
Dimmable lighting systems that also transmit data for control and monitoring.

Sensitive area systems
By not passing through walls, light reduces interception risk, ideal for hospitals, labs, and military zones.

IMPORTANT NOTE

Visible light communication requires direct line-of-sight between transmitter and receiver. Obstacles, fog, rain, intense light sources, and other factors can affect performance. Precise alignment and use of a reflector are essential to obtain maximum range.

VLC is a growing technology that complements radio frequency communications, offering new options for environments where light can be an ideal medium for transmitting information.

LIGHT THAT COMMUNICATES,
INFORMATION THAT CONNECTS.

HAM RADIO Zone

Trending

WRTC 2026 Champions Crowned

The World Radiosport Team Championship (WRTC) 2026, widely regarded as the "World Championship" of amateur radio contesting, concluded in the United Kingdom after an intense 24-hour competition featuring 50 teams operating under identical conditions. The team of Yaroslav Oliinyk (UW7LL) and Yuri Onipko (VE3DZ) captured the gold medal, followed by Manfred Wolf (DJ5MW) and Ulrich Ann (DM5EE) in second place, and Emir-Braco Memic (E77DX) and Sven Lovric (DJ4MX) in third. The event logged more than 260,000 QSOs, further cementing WRTC's reputation as one of the most prestigious competitions in the world of amateur radio contesting.





Dr. Nathaniel Frissell Honored with the 2026 Bill Orr Award

La ARRL Foundation otorgó el prestigioso Bill Orr Technical Writing Award 2026 al radioaficionado Dr. Nathaniel Frissell (W2NAF) por la calidad y el impacto de sus artículos técnicos publicados en QST. Sus investigaciones sobre la propagación de las ondas de radio y el clima espacial han ayudado a miles de radioaficionados a comprender mejor el comportamiento de las bandas de HF. El premio reconoce la excelencia en la comunicación técnica y su contribución al avance del conocimiento dentro de la comunidad mundial de radioaficionados.

HAM RADIO Zone

K2BSA Brings Amateur Radio to the National Scout Jamboree

During the 2026 National Scout Jamboree, amateur radio station K2BSA introduced Scouts to practical radio communications under the guidance of licensed operators. The station operated from July 22 through July 31 on HF, VHF/UHF, repeaters, and EchoLink, allowing participants to make contacts while learning about operating procedures, wireless technology, STEM concepts, and emergency communications.

K2BSA also provided instruction for the Radio Merit Badge and showcased various amateur radio operating modes. More than just a temporary station, the activity highlighted the historic relationship between amateur radio and the Scouting movement, as well as the important role of radio in public service and international goodwill.

By placing young people behind the microphone, K2BSA helped a new generation discover communication, experimentation, and service.

More information: k2bsa.net



Trending

SWR



Photo by: Bob Johnk