

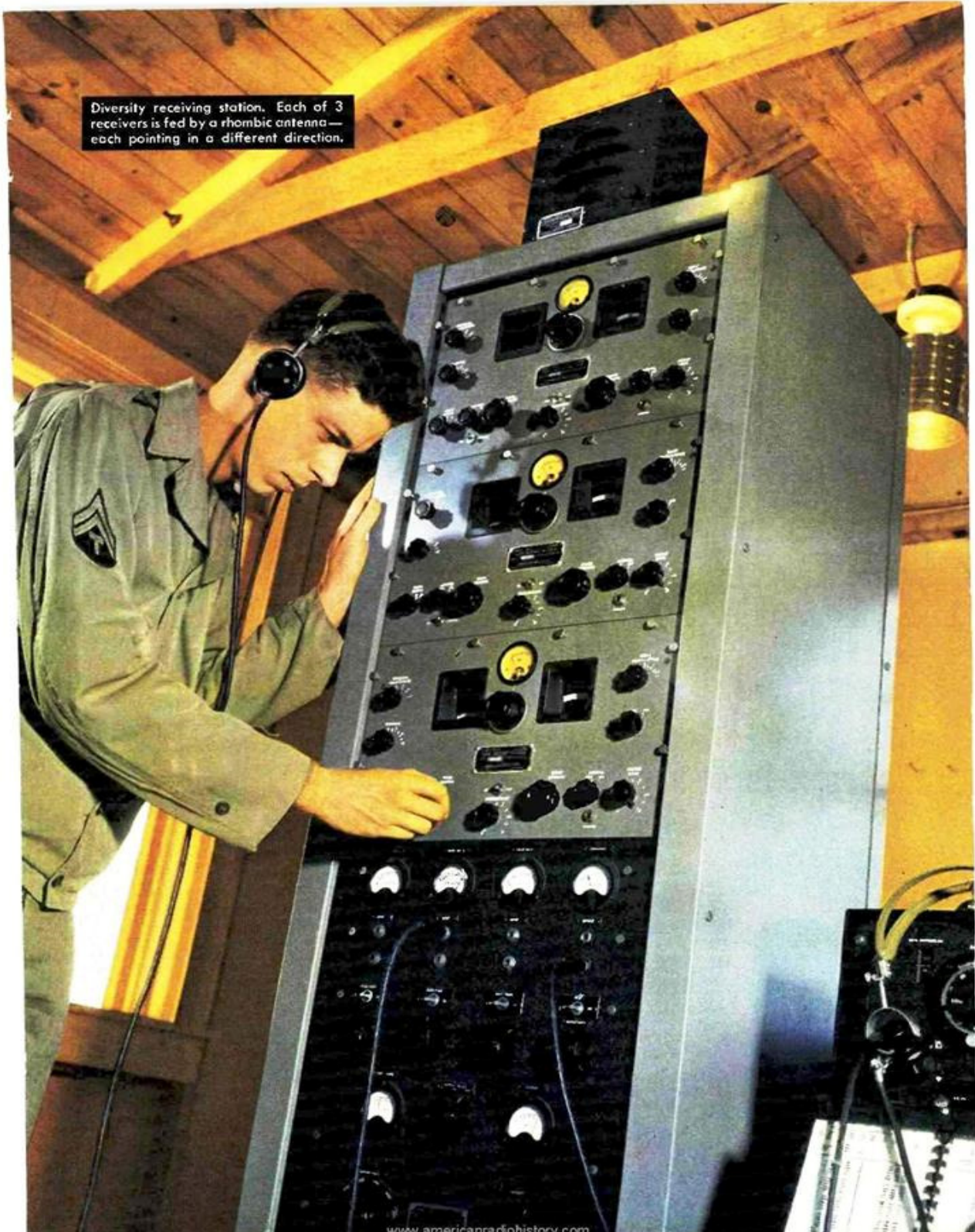


Antique Wireless Association of Southern Africa Newsletter

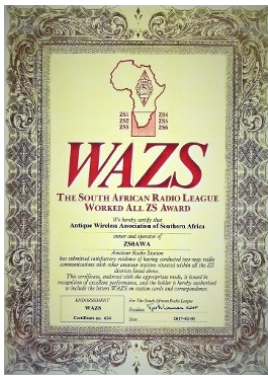


198

January 2023



Diversity receiving station. Each of 3 receivers is fed by a rhombic antenna—each pointing in a different direction.



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Reflections:

Once again, the start of a new year brings so many thoughts together. I don't think people still do that thing of giving up things that make you fat, attack your heart or give you pimples any more? I guess that's something of the past now. Today we are just too grateful for anything that comes our way, especially when it comes to old radio's.

We all tend to use the adage of "look what followed me home today", and very often it works quite well, except with our wives of course, but I think there are many who are already planning what will be the next project and how they are going to lay their hands on whatever it may be to cause it to follow them home.

The beginning of a year is always a good time to start to plan these things, so by the time you get to the middle of the year, your plans can be firmly in position for final execution in the latter part of the year.

But then, maybe you are a fast planner and you can execute the same plan at least twice during the year.

I always say that I regret having sold off so many of my old radio's. They took a lot of time and planning to get hold of. Some, literally did just follow me home without any kind of planning or deception, but many of them had to be worked in great detail.

I distinctly recall having brought some radios home and leaving them in my car for a few days before sneaking them into my shack. These days the wife is very much more understanding, I think, but maybe she knows that it's not that easy to find many of these jewels. There again, maybe she just doesn't care anymore.

The fact is that radio today has become something more than just a reason to be outside. My shack is now in the house and so not so easy to sneak things in any-

more. So now, I just brazenly walk in with whatever I have found or brought home and hope she doesn't say "What's that?"

Aren't we just a sneaky bunch, but then maybe it's just me.

The first radio I ever brought home was my HT37 and SX100. I will never forget the look on my wife's face when I off-loaded them from the army land rover that dropped me at my front door. The SX100 was in pretty good condition, but the HT37 was a mess. Then of course came the first words, "What's that?"

So here's to figuring out a whole lot of new ways to get stuff into the house this year and do it with a straight face and be able to avoid the dreaded question.

May the Morse be with you all in this New Year and preserve your sanity.

Best 73

DE Andy ZS6ADY

Wikipedia

Solar Flares:

Optical observations

Solar flares were first observed by Richard Carrington and Richard Hodgson independently on 1 September 1859 by projecting the image of the solar disk produced by an optical telescope through a broad-band filter. It was an extraordinarily intense *white light flare*, a flare emitting a high amount of light in the visual spectrum. Since flares produce copious amounts of radiation at H-alpha, adding a narrow ($\approx 1 \text{ \AA}$) passband filter centered at this wavelength to the optical telescope allows the observation of not very bright flares with small telescopes. For years H α was the main, if not the only, source of information about solar flares. Other passband filters are also used.

Radio observations

During World War II, on February 25 and 26, 1942, British radar operators observed radiation that Stanley Hey interpreted as solar emission. Their discovery did not go public until the end of the conflict. The same year Southworth also observed the Sun in radio, but as with Hey, his observations were only known after 1945. In 1943 Grote Reber was the first to report radioastronomical observations of the Sun at 160 MHz. The fast development of radioastronomy revealed new peculiarities of the solar activity like *storms* and *bursts* related to the flares. Today ground-based radio telescopes observe the Sun from c. 15 MHz up to 400 GHz.

New Year Message from our President.

Another 12 newsletters and 52 AWA nets and topics have gone by in what feels like a blink of the eye, may you all have good health and happiness for the year ahead with lots of beautiful radios following you home.

I continue to look forward to the AWA nets and hope you have as much fun as I have surrounded by my wonderful AWA friends. Please do keep the AWA community informed of your projects and restorations, either via the Saturday morning nets, a mail to Andy or better still an article for the AWA newsletter.

Do join us on the nets! I can assure you that there is always something to learn from members and regular contributors. I'm truly amazed at the knowledge base the AWA have at their disposal and this year will attempt to better tap into this resource for the benefit of all.

If there's a particular topic you would like to hear on the Saturday nets let us know, I'm pretty sure we can find someone that could answer your questions or offer advice.

As much as I try introducing interesting topics on the net that target the dynamics of the AWA community I can't always get it right and could use some help.

Good new year to all

Renato ZS6REN

AWA CW ACTIVITY DAY

The aim of the CW Activity Day is for participants to contact as many amateurs as possible on the 20, 40 and 80 m amateur bands.

Date:

05 February 2023 From 13:00 UTC (15:00CAT) to 15:00 UTC (17:00 CAT)

Frequencies

14,000 to 14,060 MHz; 7,000 to 7,035 MHz; 3,500 to 3,560 MHz

Categories

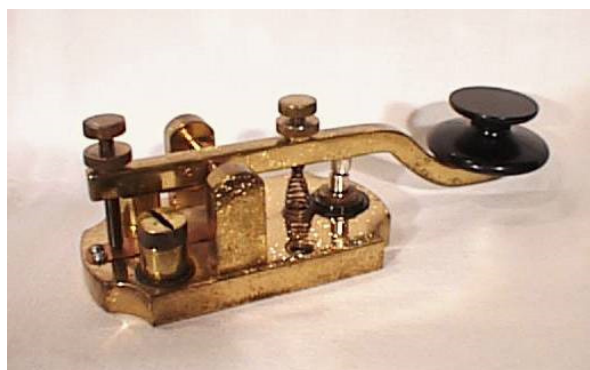
- a) Single Operator All Band - Low Power (maximum 100W)
- b) Single operator All Band - QRP (Maximum 5W)
- c) Single Operator Single Band - Low Power (maximum 100W)
- d) Single operator, single band - QRP (maximum 5W)
- g) Short Wave Listener (SWL)

The exchange is RST, operator name and Grid Square locator and the scoring is 1 point for low power, 2 points for QRP.

Certificates are awarded to the first three places and the highest single band score.

Log sheets in ADIF or Excel should be sent to: andyzs6ady@vodamail.co.za

Closing date for log submission is 10 February 2023



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NEW Johnson MATCH BOX

A fully engineered antenna coupling system

Performs all transmission line matching and switching functions required in medium powered amateur stations. Bandswitching and completely self-contained, the "Matchbox" will load an almost infinite variety of antennas from 3.5 to 30.0 mcs. Matches balanced antennas from 25 to 1200 ohms resistance. Successfully loads unbalanced, or single wire antennas of approximately 25 to 3000 ohms resistance. Tunes out large amounts of reactance.

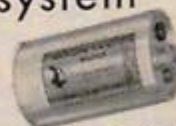
Though designed as a companion unit to the Viking I and II, the "Matchbox" can be used with any 250 watt transmitter. Nominal input impedance is 52 ohms—power rating 250 watts. A change-over relay switches the antenna from receiver to transmitter, grounding the receiver antenna terminals in the "transmit" position. This same relay also mutes the receiver during transmission. Receiver performance improved by matching antenna input to receiver input impedance.

Supplied as a completely assembled and tested unit. Easy to use, front panel controls. No internal adjustments required to change bands. Fully shielded maroon and gray cabinet matches the Viking II. Dimensions 9 $\frac{3}{8}$ " wide, 10 $\frac{1}{2}$ " deep, 7" high, weight approximately 6 pounds.

Cat. No. 250-23

\$49⁸⁵

Amateur Net



Standing Wave Ratio Bridge

Provides accurate measurements of standing wave ratio permitting adjustment of the "Matchbox" for minimum SWR and maximum harmonic rejection. Insures the most effective use of a low pass filter providing the ultimate in TVI suppression.

Impedance is 52 ohms, can be changed to 70 ohms or any other desired value. Shielded construction, 2 $\frac{3}{8}$ " dia. x 4 $\frac{1}{2}$ " overall length. Equipped with 50-239 connectors and polarized meter jacks. Cat. No. 250-24

Amateur Net **\$9.75**



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Looking to Ditch Twitter? Morse Code Is Back

Reviving a 200-year-old system, enthusiasts are putting the digit back in digital communication

[Larry Kahaner](#)

Larry Kahaner is an American journalist and author who resides in Bethesda, Maryland.

January/February 2023

For almost 20 years, Steve Galchutt, a retired graphic designer, has trekked up Colorado mountains accompanied by his pack of goats to contact strangers around the world using a language that is almost two centuries old, and that many people have given up for dead. On his climbs, Galchutt and his herd have scared away a bear grazing on raspberries, escaped from fast-moving forest fires, camped in subfreezing temperatures and teetered across a rickety cable bridge over a swift-moving river where one of his goats,

Peanut, fell into the drink and then swam ashore and shook himself dry like a dog. “I know it sounds crazy, risking my life and my goats’ lives, but it gets in your blood,” he tells me by phone from his home in the town of Monument, Colorado. Sending Morse code from a mountaintop—altitude offers ham radios greater range—“is like being a clandestine spy and having your own secret language.”

Worldwide, Galchutt is one of fewer than three million amateur radio operators, called “hams,” who have government-issued licenses allowing them to transmit radio signals on specifically allocated frequencies. While most hams have moved on to more advanced communications modes, like digital messages, a hard-core group is sticking with Morse code, a telecommunications language that dates back to the early 1800s—and that offers a distinct pleasure and even relief to modern devotees.

Strangely enough, while the number of ham operators is declining globally, it’s growing in the United States, as is Morse code, by all accounts. [ARRL](#) (formerly the American Radio Relay League), based in Newington, Connecticut, the largest membership association of amateur radio enthusiasts in the world, reports that a recent worldwide ham radio contest—wherein hams garner points based on how many conversations they complete over the airwaves within a tight time frame—showed Morse code participants up 10 percent in 2021 over the year before.

This jump is remarkable, given that in the early 1990s, the Federal Communications Commission, which licenses all U.S. hams, dropped its requirement that beginner operators be proficient in Morse code; it’s also no longer regularly employed by military and maritime users, who had relied on Morse code as their main communications method since the very beginning of radio.

Equipment sellers have noticed this trend, too. “The majority of our sales are [equipment for] Morse code,” says Scott Robbins, owner of ham radio equipment maker Vibroplex, founded in 1905, which touts itself as the oldest continuously operating business in amateur radio. “In 2021, we had the best year we’ve ever had ... and I can’t see how the interest in Morse code tails off.”

Practitioners say they’re attracted by the simplicity of Morse code—it’s just dots and dashes, and it recalls a low-tech era when conversations moved more slowly. For hams like Thomas Witherspoon of North Carolina, using Morse code transmissions—sometimes abbreviated as CW, for “continuous wave”—offers a rare opportunity to accomplish tasks without high-tech help, like learning a foreign language instead of using a smartphone translator. “A lot of people now look only to tools. They want to purchase their way out of a situation.”

Morse code, on the other hand, requires you to use “the filter between your ears,” Witherspoon says. “I think a lot of people these days value that.” Indeed, some hams say that sending and receiving Morse code builds up neural connections that may not have existed before, much in the way that math or music exercises do. A 2017 study led by researchers from Ruhr University in Bochum, Germany, and from University Medical Center Utrecht in the Netherlands supports the notion that studying Morse code and languages alike boosts neuroplasticity in similar ways.

Morse code emerged during a time of tinkering, at the start of the electrical age. In the 1830s, Samuel F.B. Morse, who had made a national name for himself as a painter with portraits of such luminaries as John Adams and the Marquis de Lafayette, began working with colleagues, including the inventor Alfred Vail, to experiment with how an electrical impulse initiated in one place and transmitted over a distance through wires could activate an electromagnet somewhere else.

Operators would push down on a button attached to a small slab of brass that made an electrical connection between two wires. The connection sent electricity through these wires to a remote electromagnet, which then attracted a metal strip that made a clicking sound.

Though British inventors William Cooke and Charles Wheatstone had used an electromagnet to create the first tele-

graph receiver, patented in 1837, Morse's chief innovation was the simplicity of his code: A short press made a short click, or a dot, and a longer press, three times the length of a dot, made a dash; various combinations form the 26 letters of the alphabet.

Within a few years, the utility of Morse's new language became clear to governments and businesses around the globe. Morse formalized this language as American Morse code in 1838, and in 1851 countries standardized it into international Morse code, which has remained largely unchanged since.

In 1844, Samuel F.B. Morse inaugurated the first U.S. telegraph line with a verse from Numbers, recommended by a friend's young daughter: "What hath God wrought?" (*Library of Congress*)

After Guglielmo Marconi sent the first intercontinental Morse message by radio in 1901—a simple "S," from England to Newfoundland—Morse code became the de facto method for critical telecommunications and maintained that standing for nearly a century, despite the emergence of voice communication, because it offered clearer and more reliable communication for the military and maritime users.

That dominance broke in the mid-20th century, when digital data sent over satellites and fiber-optic cables took hold. Most historians agree that the death knell for Morse came in 1999 when the Global Maritime Distress and Safety System, which generates an automated digital emergency signal for ships in danger, replaced Morse code's SOS—the familiar dot-dot-dot / dash-dash-dash / dot-dot-dot.

Military use disappeared except in extremely rare instances, other ship use became almost non-existent and the last holdout users were hams who were still required to learn code for their licenses. That changed in the early to mid-2000s, when most countries no longer required hams to be proficient in Morse.

Although Morse remains the purview of hams, its presence still seeps into wider culture. The new Apple Watch can silently buzz out the time in Morse when you put two fingers on the face. Since its opening in 1956, the Capitol Records building in Los Angeles, shaped like a stack of vinyl records, has sported a light on the roof blinking the word "Hollywood" in Morse code.

One of the main shortcomings of Morse code identified nowadays is its slow pace in an age of instant messaging. The average English speaker talks at about 150 words per minute, while most experienced hams send and receive at only 12 to 25 words per minute (although some high-speed operators can hit 35 or 55 words), says Howard Bernstein, who teaches Morse code at the Long Island CW Club.

Another drawback is the difficulty in learning the code—tantamount to learning a foreign language. It can take months or years of hard work to become proficient in a skill that offers diminishing returns for anyone but an avid hobbyist.

Part of Morse code's enduring appeal for hams isn't going away soon: Its simplicity and easy detection on airwaves make it more reliable than voice communication—and allow a ham to break through atmospheric noise and other weather conditions, even at extremely low transmitting power. "When you can't get through with your own voice, Morse code gets you through," says Bob Inderbitzen, director of marketing and innovation at ARRL.

Radios that send and receive Morse code are lightweight and technically simple, and they need only small batteries. These advantages have spurred several sub-hobbies within the ham community. Thousands of hams worldwide participate in programs such as Parks on the Air and Summits on the Air, in which operators take their rigs into parks or mountaintops to see how many contacts they can make and how far they can reach.

Adam Kimmerly of Ramona, California, is a regular at these events. "This is an ideal combination of my favourite hobbies: rock climbing, mountaineering, hiking and amateur radio." And while some might imagine Morse code to be less intimate than actually hearing someone's voice, veteran hams can often recognize one another based on their "fist," or the rhythm and pacing of a strip of code.

"You may think of dots and dashes as not having the same personality or character as voice communication, but they actually do," Kimmerly says. "One of the really cool things I never expected is that people have their own inflections." One Morse code enthusiast, Anne Fanelli, even saved a fellow ham's life when she noticed his "fist" was off; after he stopped responding entirely, she called 911, and he was taken to the hospital, where he spent three days recuperating from an adverse drug reaction.

Doug Tombaugh, a history re-enactor from Kansas City, Missouri (he plays a mid-19th-century woodcutter), is president of the [Straight Key Century Club](#), whose thousands of members use simple up-and-down keys like those used by the first Morse code operators, instead of modern keys that form dots and dashes electromechanically, or those that employ computer software.

"I just like the mechanicalness of using a brass key," Tombaugh says. "It's real. It's authentic. It's tactile."



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EIMAC 3-500Zs are Heath's Choice.



Clandestine Broadcasters

November 1967 Popular Electronics

When this "Clandestine Broadcasters" article appeared in a 1967 issue of *Popular Electronics* magazine, we were at the height of the [Cold War](#) era with Communist forces spreading all over the globe and inching closer to the U.S. mainland with moves in the West, north of the Equator. The [Cuban Missile Crisis](#) occurred just five years earlier, and the spy game kept all sides busy trying to hide their own secrets and discover the secrets of others. Mysterious radio broadcasts were routinely picked up and reported by Amateur Radio operators and [Short Wave Listeners](#). Their elusive broadcast content and station location enhanced the intrigue for people. Of those, it was the "[numbers stations](#)" that garnered the most attention because they issued a string of numbers, then ceased transmission. It was believed to be a means of sending encoded messages to spies. The practice continues to a lesser extent to this day. Side note: When I first ran OCR (optical character recognition) on the article, Radio Libertad rendered in a few instances as Radio Libtard - hah! Radio Libertad translates as [Liberty Radio](#). Bahamas radio station [ZNS](#) is still broadcasting today.

Underground and cloak-and-dagger stations make choice DX'ing for radio listeners.

By Thomas Kent



Clandestine broadcasters are the most fascinating and the most frustrating stations on the short-wave bands. Usually operated by deposed governments or groups in exile, these pirate stations encourage citizens to rise up in revolution against their new governments; they urge soldiers to desert their ranks; they broadcast coded messages to undercover agents; and they offer the SWL the thrill of hearing history in the making.

Because of their sensitive political positions, these broadcasters go to great lengths to conceal facts about themselves. They rarely provide mailing addresses and transmitter locations are usually well hidden. To avoid jamming, clandestine broadcasters change frequencies and schedules often and without notice. Much "information" about such stations is usually no more than rumor, and the SWL must analyze each piece of evidence to learn the real facts.

In the Bahamas?

Since the end of the Radio Americas' location controversy - it's definitely on Swan Island - the number one mystery station has been Radio Libertad. This broadcaster, which bills itself as "the anti-Communist voice of America," has been on the air for several years, beaming anti-Castro programs to Cuba. It is generally believed that the U.S. Government has an "interest" in the station's operations.

The biggest question about Radio Libertad is its true location. It is never mentioned, and the mailing addresses given over the air have all proved to be false. However, many DX'ers have long believed that the transmitter is on Andros Island, one of the southernmost islands in the Bahamas group.

To check this theory, a letter was sent to the Bahamas Broadcasting and Television Commission in Nassau asking if Radio Libertad operates from Bahamas territory. The station's operating schedule and frequencies were included with the letter. The reply, from H. R. Bethel, General Manager of Bahamas government station ZNS, was surprising: although Radio Libertad's BCB frequency was monitored for three days, said Bethel, no signal was heard! This is certainly peculiar since the station is easily received in Puerto Rico, even farther away than Nassau from Cuba, Radio Libertad's target area. Subsequent letters suggesting that Radio Libertad's short-wave frequencies be monitored were ignored. Is it possible that ZNS is not telling all it knows?

Direction-finding instruments and beam antenna headings indicate that the Radio Libertad transmitter is in the general vicinity of Andros Island. The Bahamas have always cooperated with U.S. Government operations. (It is believed that U.S. Armed Forces bases are located in the Bahamas, and it wouldn't be difficult to hide a radio station in the jungles of Andros Island.)

Radio Libertad is easy to log, though QSL's are obviously not available. Transmissions are from 1100 to 1645 and from 0000 to 0600 GMT on many frequencies. Among the most reliable frequencies are 15,050, 9295, 7308, 6250, 6000 kHz (a former Radio Americas channel), and 1400 kHz. Broadcasts begin with chimes and the same anthem used by Radio Habana Cuba. All programs are in Spanish; however, station identifications are also given in English.



Small islands in the Caribbean have long been suspected as hiding places for clandestine broadcast stations. Radio Americas' transmitters are located on Swan Island, and two new transmitter facilities located on Navassa Island will soon be operational.



Operating at 1160 kHz on the standard broadcast band, and 6000 kHz on the international broadcast (shortwave) band, Radio Americas routes all program material through control console shown at lower left.

Besides Radio Libertad and the Spanish numbers stations, there is another important clandestine radio activity in our hemisphere. A number of unlicensed short-wave stations have suddenly begun operation in Bolivia, most of them in or near the 49-meter band. Communist insurgency in Bolivia has reached an all-time high, and it is possible that these stations are a part of the "liberation" movement, especially since they are all located in rebel-infested areas.

A partial listing of these stations includes: Radio Mandez, Huanuni, on 5790 kHz; La Voz del Minero, Llallagua, on 5850 kHz; Radio Busch, Uyuni, on 6500 kHz; and Radio Copacabana, Sucre, on 6600 kHz. There are also two stations known as Radio Libertad (no relation to the Andros Island station) operating from Santa Cruz and Sucre on 6200 and 6600 kHz respectively.

In Europe, Too

One of the more interesting clandestine stations in Europe is Ra-

Incidentally, as this story goes to press, there is considerable fanfare concerning a new station to be opened on Navassa Island, between Haiti and Cuba. This island is a U.S. Possession and apparently, up until quite recently, has been uninhabited. Transmitters are being shipped to Navassa for operation in the AM broadcast band, as well as in the short-wave broadcast bands. The BCB transmitter is rated at 50 kW, and the short-wave transmitter at 20 kW. Programming is reported to be similar to that of Radio Americas - all Spanish language broadcasts.

The "Numbers" Game

More mysterious than Radio Libertad are the shortwave "numbers stations" - some probably located in the Caribbean area. These stations begin their transmissions with musical signals, chimes, or the sound of buzzers. Then, without any other station identification, announcers read long lists of numbers in 4- or 5-digit groups. At the end of the lists of numbers, the stations abruptly leave the air - again with no identification. It is suspected that all of these numbers stations are somehow involved in espionage activities and are transmitting coded instructions to undercover agents.

Numbers stations have been heard in the German, Russian, English, and Czech languages, but the most interesting ones to North Americans are those that broadcast in Spanish. According to Cuban exile sources, the Spanish-speaking stations are used by the Federation of Cuban Workers in Exile, a Miami-based organization, to send coded instructions to anti-Castro guerrillas inside Cuba. The transmitter site is unknown, but is most likely located in the Florida Keys, where many Cuban exile activities have been based.

These Spanish numbers stations have been heard around 0400 and 0500 GMT in the 3-4- and 5-8 MHz bands. They change frequencies often, but among the channels most consistently in use are 7390, 7010, 5680, 5630, 3380, and 3205 kHz. The song "Sesame Mucho" is frequently employed for transmitter identification by some stations.

△ RADIO AMERICAS 1500 W. 4, 200 Watts, 630 Mics, 7,500 Meters

SPOTS		Per Day				
	1-10	11-20	21-30	31-40	41-50	
60 seconds	\$ 24.00	\$ 32.00	\$ 40.00	\$ 48.00	\$ 56.00	
90 seconds	\$ 36.00	\$ 48.00	\$ 60.00	\$ 72.00	\$ 84.00	
120 seconds	\$ 48.00	\$ 64.00	\$ 80.00	\$ 96.00	\$ 112.00	

NIGHT PROGRAMS

Power	1-10	11-20	21-30	31-40	41-50
1000	\$ 175.00	\$ 225.00	\$ 275.00	\$ 325.00	\$ 375.00
500	\$ 87.50	\$ 112.50	\$ 137.50	\$ 162.50	\$ 187.50
250	\$ 43.75	\$ 56.25	\$ 68.75	\$ 81.25	\$ 93.75

GENERAL INFORMATION

Radio Americas is a non-profit organization. All advertising spots are sold on a non-exclusive basis. Payment in advance. No cash discounts. All advertising spots are sold on a non-exclusive basis. Payment in advance. No cash discounts. All advertising spots are sold on a non-exclusive basis. Payment in advance. No cash discounts.

RADIO HOMES

IN REGION WAVE COVERAGE AREA

SPECIAL SERVICES AND FUNCTIONS

WHEN ADVERTISING WITH RADIO AMERICAS

At one time, Radio Americas' operating expenses were paid by funds from a sympathetic government. Now sale of advertising time pays these expenses.

dio Euzkadi, operated by the Basque resistance movement. The goal of this movement is to create an independent state for the million-odd Basques now living in northern Spain, though even among the Basques the idea has won little popular support. The movement claims to be strongly anti-Communist, and "wants only to re-establish Euzkadi, the Basque homeland."

As is the case with other clandestine stations, Radio Euzkadi's transmitter location is unknown. The unsuccessful attempts made by Spanish dictator Franco to silence the station indicate that the transmitter is probably not in Spain. The station may be in southern France, where there is a small Basque colony. Headquarters of the Basque resistance movement is in Paris and the Basques evidently operate freely in France.

It has been suggested by some DX'ers that Radio Euzkadi is in Latin America or in Cuba.

Radio Euzkadi itself denies that it is associated with Communist Cuba "or with any other government." There really seems to be no reason why the Basques should want to set up high-powered - and therefore very expensive - transmitters in Latin America when they can operate safely and with low power from French territory. Radio Euzkadi ("La Voz de la Resistencia Vasca") broadcasts in both the Basque and Spanish languages around 2145 GMT on 15,080 and 13,250 kHz. Reports are usually verified; they should be written in Spanish, if possible. The address is 48, rue Singer F-75, Paris 16e, France.

Less is known about two other European clandestine stations, Radio Portugal Livre and Radio Espana Independiente. They are both Communist operations whose targets are Generalissimo Franco and the Portuguese dictator, Premier Salazar. Radio Portugal Livre is rumored to operate from Rumania, though Radio Bucharest denies this rumor. The station is heard on 8333 kHz in Portuguese until sign-off at 2350 GMT. "A Portuguesa," the Portuguese national anthem, is played at the end of each transmission.

Radio Espana Independiente transmits on 6950, 7600, and 10,110 kHz around 1500 GMT and on 10,110, 11,260 and 12,140 kHz around 0600 GMT. The World Radio Bulletin gives as its address, P.O. Box 359, Prague, Czechoslovakia.

The Asiatics

The complex political situation in Southeast Asia has given rise to several new clandestine stations there. The most recent is the Voice of the People of Thailand, 9425 kHz, which signs on with Oriental chimes at 1430 GMT. It broadcasts only in Thai and is obviously Communist -supported.

The Associated Press reports from Saigon that a station identified as Radio Liberation Army or "Voice of the Sacred Sword of Patriotism" has been heard urging North Vietnamese soldiers to leave South Vietnam. It claims to be in Hanoi, but is almost certainly operated by American or South Vietnamese personnel in South Vietnam. Of course, there is no relation between this station and the various "Radio Liberation Army" stations operated by North Vietnam and Communist China. Transmissions are at 0500-0600 on 7225 and 7216 kHz (Hanoi also uses the latter channel) and at 1400 GMT on 9425 kHz. The interval signal is a drum and cymbal call, and the Vietnamese ID may begin "Guom Thieng Ai Quoc" or "Day la Tieng noi."

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"The most talked about HAM RECEIVER"



The Drake 1-A Sideband Receiver was introduced in 1958. The 2-A with improvements for all modes followed in early 1960. The present Model 2-B with improved selectivity for SSB, CW and AM was announced in April 1961.

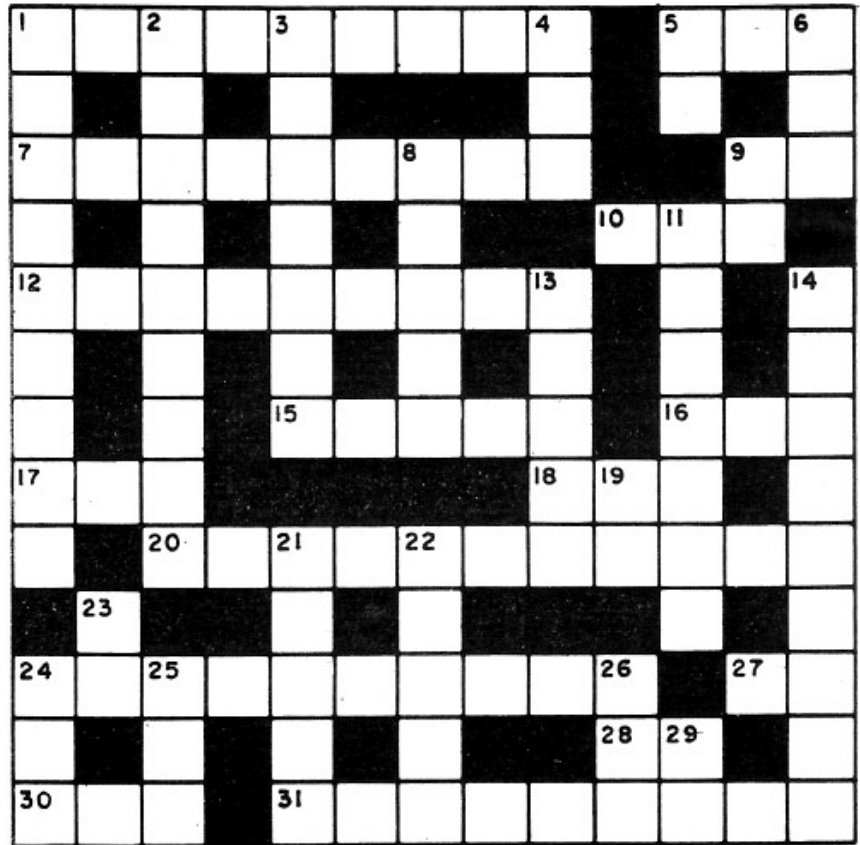
In this short time the Drake Receiver has become the most popular and talked about receiver on the ham bands. Whether you are a Novice or 60 wpm operator, a beginner AM or experienced SSB'er you will discover the 2-B has been engineered for all your receiver needs.

Just ask the ham who owns one.

Electronics Crossword

Across

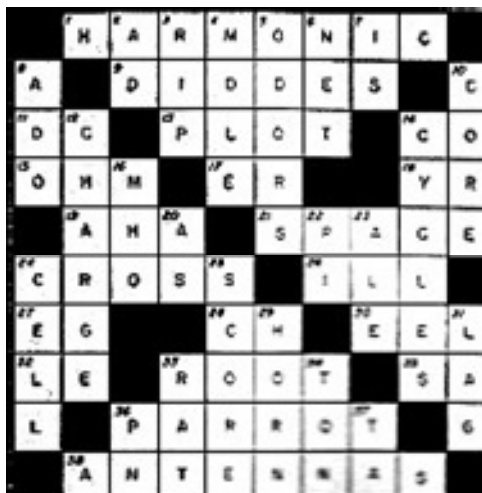
- 1. Special direct-current generator.
- 5. Space between two electrodes.
- 7. Specific electrode in a transistor.
- 9. Paid notice (abbr.).
- 10. Luminous discharge of electricity.
- 12. Symbolized by X.
- 15. Sphere of interest or activity.
- 16. Grate.
- 17. Possess.
- 18. Mineral spring resort.
- 20. Natural vegetable gum, similar to rubber, used principally as insulation for wires and cables.
- 24. Bypass, coupling, or tuning.
- 27. Greek letter designating the ratio of the circumference of a circle to its diameter.
- 28. Magazine executive (abbr.).
- 30. A bolt accessory.
- 31. Semiconductor using the field effect.



Down

- 1. Type of cable used with some printed circuit connectors.
- 2. Type of current that is a nonuniform electron flow, which varies periodically but does not reverse its direction.
- 3. Resistance to motion.
- 4. Organ of hearing.
- 5. Gallium.
- 6. An attenuator.
- 8. Color with a slight shade or stain.
- 9. Type of reversible current (abbr.).
- 11. Hybrid ring (2 words).
- 13. Remove data stored on magnetic tape.
- 14. A continuously reversing change in the magnitude of a given force.
- 19. Two of a kind (abbr.).
- 21. Expressed or carried on without words or speech.
- 22. Storage space immediately below the roof.
- 23. Mass-audience communication system (abbr.).
- 24. A metal shield, placed around some components.
- 25. Type of control (abbr.).
- 26. To place a binary cell in the one state.
- 29. Physician (abbr.).

Dec puzzle answers:



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Antique Wireless Association
of Southern Africa

Mission Statement

Our aim is to facilitate, generate and maintain an interest in the location, acquisition, repair and use of yesterday's radio's and associated equipment. To encourage all like minded amateurs to do the same thus ensuring the maintenance and preservation of our amateur heritage.

Membership of this group is free and by association. Join by logging in to our website.

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Relay on 10.125 and 14.135 (Try all and see what suits you)

Saturday 14:00 (12:00 UTC)— CW Net—7025

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