



Radio Active Times, Issue 13, May 2026

The official newsletter of the Handiham Radio Club. Issue 13, May 2026.

Greetings from the Editor

Well, this is the first issue of the second year of the Radio Active Times. I look forward to what we will learn from each other in the coming year.

Mélanie Carriveau, KN4ZSY, Editor in Chief

Contributions Wanted

If you have something related to ham radio or technology that you want to share with the club, please submit it to our Editor in Chief, Mélanie Carriveau, KN4ZSY. There is no deadline for submissions, and the submission guidelines are quite flexible.

Message from the Desk of the President

Club President Jerry spent the last week of April and the first week of May in Boring, Oregon, getting his new guide dog. The dog is a 23-inch-tall, 53-pound male black Lab named Mateo (pronounced mah-TAY-oh), Spanish for Matthew. Mateo is a great guide. Since returning from Oregon, Jerry and Mateo have been busy settling into life in Missouri, and Mateo will be bringing Jerry to camp in September.

Handiham Radio Club Daily Nets

By Jerry Maccoux, W0UH, Net Manager

April was a bit busy, with the net manager out of the office April 1–3 and again the last week of April. Thanks to Peter Atkinson, WX9IDX; Larry Marcum, K7GND; Daryl Stout, N5VLZ; Sabra Ewing, AI7UG; Linda Reeder, N7HVF; Chip Johnson, N9KIW; and John Glass, NU6P, for keeping the daily nets running during that time.

Check-ins, April 1–30, 2026

Period	Check-ins	Average per net
April 1–3	90	22.5
Week 1	137	22.83
Week 2	133	22.16
Week 3	138	23
Week 4 (final 4 days, 5 nets)	114	22.8
April total	612	22.67

Total checked-in stations for the year so far: 2,330.

Be sure to drop in at 11:00 AM Central time, Monday through Friday, for our daily nets:

- EchoLink: HANDIHAM conference server, node 494492
- DMR: talkgroup TGIF, TG 3141
- AllStar: node 473670

New Tickets and New Members

Elizabeth Conlin passed her Technician exam; her call sign is KR4MDC. Congratulations, Elizabeth! We knew you could do it.

San Guelzow has recently joined the club. Welcome to the club, San!

Have you earned your ticket, upgraded, or gotten a new call sign? Have you moved, or changed your phone number or email address? If so, please let the Handiham Program staff know by emailing handiham@allina.com.

Thank you,

Lucinda Moody, AB8WF, Handiham Program Coordinator, and Melissa Brown, Handiham Program Administrator

Learning to Talk Ham: Ground-Wave Propagation

Adapted from the Wikipedia article "Ground wave," used under the Creative Commons Attribution-ShareAlike license.

Ground-wave propagation, also called the Norton surface wave or, more properly, the Norton ground wave, is a mode of radio propagation made of currents traveling along and close to the Earth's surface. It contrasts with line-of-sight propagation, which needs no medium, and sky wave, which uses the ionosphere. Ground waves can cover long distances by diffracting around the Earth's curve. Range depends on frequency and ground conductivity: lower frequencies and more conductive ground allow longer distances.

Ground wave works best below 30 MHz. Signals below 3 MHz travel efficiently as ground waves; HF signals between 3 and 30 MHz have modest range; and above 30 MHz, line-of-sight propagation dominates. Highly conductive surfaces such as seawater give the best propagation, while dry ground and ice are the worst. As distance increases, ground waves spread out according to the inverse-square law. The ground's imperfect conductivity tilts the waves forward, losing energy into the ground. The long wavelengths let these signals diffract over the horizon, but with further losses, and once the Earth's curve becomes significant, signal strength falls off exponentially with distance. Above

about 10 kHz, atmospheric refraction helps bend the waves downward. Only vertically polarized waves travel well; horizontally polarized signals are heavily attenuated.

Ground-wave signals are fairly immune to fading, though changes in the ground can cause variations in strength. Over land, losses are lowest in winter in temperate climates, and over water they are higher when seas are rough. Hills, mountains, cities and forests can create areas of weaker signal. Ground waves penetrate tens of meters into dry ground at medium frequencies, and even deeper at lower frequencies, so predicting propagation requires knowing the electrical properties of the layers below the surface, which are best measured from ground-wave loss.

Most low-frequency radio communication uses ground wave. It is also the main mode on medium frequencies during the day, when there is no sky wave, and it is useful on HF at short range. Uses include navigation signals, low-frequency time signals, longwave broadcasting and AM radio; ground wave's greater effectiveness at lower frequencies gives AM stations at the low end of the band more coverage. HF over-the-horizon radar may use ground wave at moderate ranges and sky wave at longer ones. Military communication on very low and low frequencies uses ground wave, especially to reach ships and submarines, since these long waves penetrate well below the sea surface.

Ground waves were used extensively in the early development of radio, when commercial and professional services relied entirely on long-wave, low frequencies and ground-wave propagation. To prevent interference with those services, amateur and experimental transmitters were restricted to the high frequencies, thought useless because their ground-wave range was limited. Once the other propagation modes on medium-wave and shortwave were discovered, the advantages of HF for commercial and military use became clear,

and amateur experimentation was then confined to the authorized frequencies in that range.

Article 1: FT8

Adapted from the Wikipedia article "FT8," used under the Creative Commons Attribution-ShareAlike license.

FT8, short for Franke–Taylor design, 8-FSK modulation, is a popular frequency shift keying digital mode for weak-signal communication, used mainly by amateurs, with most traffic on the HF bands. It was released on June 29, 2017, by its creators Joe Taylor, K1JT, and Steve Franke, K9AN, as part of the WSJT software package. FT8 was adopted quickly worldwide and became the most widely used digital mode reported by automatic spotting networks such as PSK Reporter.

FT8 lets operators communicate despite poor conditions, such as low solar activity, high RF noise or low transmitter power. Thanks to advances in signal processing, software can decode FT8 signals with a signal-to-noise ratio as low as -20 dB in a 2,500 Hz bandwidth, far lower than conventional CW or SSB. FT8DMC is a popular club dedicated to the mode, and the FT8 Operating Guide gives practical advice on using FT8 on HF.

FT8 sends 77-bit messages in fixed 15-second periods: 12.64 seconds of transmission and 2.36 seconds of decoding time, a data rate of 6.09 bits per second, or about 5 words per minute. FT8 requires accurate timing: each transmission must start exactly at 0, 15, 30 or 45 seconds past the minute, and if the station clock is off, messages will likely fail to decode. The software can cope with differences of up to a second or two between stations, provided clocks are set correctly from time to time, for example with WWV or another time standard. A computer's normal clock is usually adequate, but most FT8 users keep accurate time automatically using internet time servers (NTP) or GPS.

Forward error correction helps FT8 get through fading, interference and weak, noisy signals from marginal paths, low power or inefficient antennas, such as those in restricted urban locations. If an expected message is missed or not acknowledged, the software can resend it in the next time slot.

Each 77-bit message can carry up to 13 text characters. A compact encoding lets standard exchanges, such as call signs, signal reports and grid locators, fit within that limit. The protocol uses hashing to handle long or unusual call signs, which can occasionally produce false or corrupted call signs. Such errors are rare but can be mistaken for genuine or exotic stations, sometimes causing brief confusion or excitement.

FT8 is used for contesting, antenna testing and scientific research, and in amateur radio it is a mainstream mode. A complete QSO usually takes about 90 seconds. It is commonly used for HF contacts, DX and long-distance work, and many hams monitor the FT8 frequencies on HF. During meteor scatter or sporadic E, FT8 signals can sometimes be received from more than 1,000 km away. To avoid interference, hams have designated specific FT8 frequencies on each band, such as 7.074 MHz on 40 meters, 14.074 MHz on 20 meters, 21.074 MHz on 15 meters and 28.074 MHz on 10 meters.

Monthly Contest Spotlight

By Tom Behler, KB8TYJ

Below is a list of contests over the next month that I thought might interest you. It is only a small sampling of the many contests scheduled, and it covers the ones I know best. I encourage you to visit the [WA7BNM Contest Calendar](#) for the complete listing. If you have worked a contest that isn't listed here and want to tell us about it, get in touch with me, and I'll gladly include your thoughts in a future spotlight. I'm always interested in contest stories and operating tips.

I want to draw particular attention to ARRL Field Day, held the last full weekend of June. There is debate over whether it is technically a contest, but it is certainly the ARRL's premier operating event of the year. Keep in mind that you can now operate Field Day from home on commercial power as a class 1D station and give other stations full credit for the contact. You can also use Field Day to test your home station on alternative power or antennas: for example, you could operate from home on emergency power as class 1E, or set up portable as a one-person class 1B station. You can count your points toward your own score, or donate them to your local club if it accepts such donations. However you do it, Field Day can be a lot of fun and a great learning experience if you want to be adventurous.

- [**CQ WW WPX Contest, CW**](#): 0000 UTC May 30 to 2359 UTC May 31.
- [**Kentucky QSO Party**](#): 1300 UTC June 6 to 0100 UTC June 7.
- [**ARRL International Digital Contest**](#): 1800 UTC June 6 to 2400 UTC June 7.
- [**ARRL June VHF Contest**](#): 1800 UTC June 13 to 0259 UTC June 15.
- [**West Virginia QSO Party**](#): 1600 UTC June 20 to 0400 UTC June 21.
- [**ARRL Kids Day**](#): 1800–2359 UTC June 20.
- [**ARRL Field Day**](#): 1800 UTC June 27 to 2100 UTC June 28.

Article 2: DXing

Adapted from the Wikipedia article "DXing," used under the Creative Commons Attribution-ShareAlike license.

DXing, from DX, the telegraphic shorthand for "distance" or "distant," is the hobby of receiving and identifying distant radio or television signals, or making two-way contact with distant stations in amateur

radio, CB or other two-way radio. Many DXers also try to get written verification of reception or contact, called QSLs or "veries."

DX communication is communication over large or relatively uncommon distances. On the VHF and UHF bands, normally used for short-range, line-of-sight communication, DX may mean stations 50 or 100 miles away; the UHF and microwave bands have also been used for Earth-Moon-Earth contacts between stations worldwide. On the low-frequency bands (30–300 kHz), contacts over 100 miles are often considered DX, but in amateur radio on HF, DX usually means stations outside your own country.

Among amateurs and shortwave listeners, most traditional DX happens on HF, where the ionosphere refracts the signal back to Earth, from where it may reflect back up for another hop. Ionospheric refraction generally only works below about 50 MHz and depends heavily on conditions, the time of day and the eleven-year sunspot cycle. It is also affected by solar storms and other solar events that shower the Earth's ionosphere with charged particles.

The angle of refraction sets a minimum distance at which the signal first returns to Earth, and this distance shrinks as frequency decreases. As a result, a station working DX is surrounded by a ring-shaped "skip zone" where it can't hear other stations or be heard by them.

This refraction is what allows shortwave reception beyond line of sight. It is used by amateurs, shortwave broadcasters and others, lets you hear AM stations far from their home areas, and serves as a backup when long-distance satellite links are disrupted by solar storms. For example, in clear ionospheric conditions France Inter on 711 kHz can be heard far into the UK, as far as Reading, Berkshire, and Radio Australia from Melbourne has been heard as far away as Lansing, Michigan, some 9,835 miles (15,827 km).

DXing arose in the early days of radio broadcasting. Listeners mailed reception reports to stations hoping for a written acknowledgment or a

QSL card verifying they had heard a distant station. Collecting these cards became popular in the 1920s and 1930s, and early broadcasters often used reception reports to judge how well their signals were getting out. Although international shortwave broadcasting is declining, DXing remains popular among dedicated listeners, and the pursuit of two-way contacts with distant amateurs is a significant part of the ham radio hobby.

AM radio DXing

Early listeners, often using homemade crystal sets and long wire antennas, found stations few and far between. With the broadcast bands uncrowded, the most powerful stations could be heard hundreds of miles away, while weaker signals needed more precise tuning or better receivers. From the 1950s through the mid-1970s, many of the most powerful North American clear-channel stations and a host of "border blasters" in Mexico pumped out Top 40 music from popular disc jockeys. Since most small local AM stations had to sign off at night, the big 50 kW stations reached listeners hundreds of miles away.

Medium-wave DXing became less popular as music formats moved to clearer, though shorter-range, FM radio during the 1970s. Meanwhile the US AM band became more and more crowded with new stations and existing stations authorized to run low power at night, peaking with the talk radio boom of the 1990s; since the 2010s, the AM band has declined. In Canada the decline came sooner, as AM stations began moving to FM in the 1980s. A few music stations, including WSM in the United States, CFZM in Canada and, on weekends, WABC, still program music on their clear-channel signals. Outside the Americas and Australia, most AM broadcasting was done by synchronized networks of government stations running hundreds or even thousands of kilowatts, but lower-powered stations and the occasional transoceanic signal remained popular DX targets.

Shortwave DXing

Especially in wartime and times of conflict, listening to international broadcasters, whose signals travel around the world on shortwave, has been popular with casual listeners and DXers alike. With the rise of internet streaming, many international broadcasters, including the BBC and Voice of America, have cut back on shortwave, though missionary religious broadcasters still use it extensively to reach less developed countries. Besides international broadcasters, the shortwave bands carry military communications, RTTY, amateur radio, pirate radio and numbers stations. Many of these use single sideband, which requires receivers better suited to DXing than to casual listening.

VHF DXing

Though sporadic, signals on the FM broadcast and VHF TV bands, especially at the low end, can skip hundreds or even thousands of miles. North American FM stations have been received in Western Europe, and European TV signals on the US West Coast. Police, fire and military communications on VHF are also DXed to some extent on scanners, though mostly listened to locally. One difficulty is identifying exactly where such signals come from, unlike commercial broadcasters, who must identify themselves every hour and often mention sponsors, slogans and local information.

Amateur radio DX

Amateurs who specialize in making two-way contacts with hams in distant countries are also called DXers. On the HF (shortwave) amateur bands, DX stations are those in other countries; on VHF and UHF, DX stations can be in the same country or continent, since long-distance VHF contacts without a satellite can be very difficult. DXers collect QSL cards as proof of contact and can earn certificates and awards from amateur radio organizations. For example, the ARRL offers the DX Century Club award, or DXCC, whose basic certificate is earned by working and confirming at least 100 entities on the ARRL DXCC List.

For award purposes, places other than nations can count as DX "countries." For example, Réunion Island in the Indian Ocean counts separately, even though it is a region of France. Because the rules for what counts can be complex, hams often say "entity" instead of "country." Some awards are based on island groups in the world's oceans, and on VHF and UHF many hams pursue awards based on Maidenhead grid locators. To give other hams a chance at new or exotic locations, amateurs mount DXpeditions to places with no permanent ham population, and frequent contests challenge operators to work as many DX stations as possible in a set time.

DX clubs and QSL cards

Many radio enthusiasts belong to DX clubs around the world, which are a useful source of news about international radio and a chance to socialize. Many DXers also collect QSL cards, which often show a picture or message reflecting the sender's country or culture on one side, and confirmation of the reception or contact on the other.

DXing equipment

DXing equipment ranges from inexpensive portable receivers to deluxe gear costing thousands of dollars. With just a simple AM radio, you can easily hear the most powerful stations hundreds of miles away at night, and car radios are also used for AM DXing. Inexpensive shortwave receivers can pick up signals from several countries at any time of day. Serious hobbyists use more elaborate receivers designed for pulling in distant signals, and often build antennas for specific bands. In general, an inexpensive desktop or PC radio can hear nearly what a very expensive receiver can; the expensive receiver usually has more filtering options and better rejection of adjacent-channel interference, which can make the difference under poor conditions.

Enthusiasts also use personal computers with radio control software for FM reception, such as XDR-GTK, designed for receivers like the Sony XDR-F1HD and NXP TEF668x-based receivers, which can connect and

control multiple receivers at once. Tools like FM-DX Webserver, used through a web browser, extend this further for FM and AM DXers. These setups allow diversity reception, side-by-side comparisons of antennas and receivers, and remote scanning.

Many simple wire antennas can be made inexpensively. Two dipoles at right angles to each other, for example one running north–south and one east–west, can give dramatically different reception patterns.

Calendar of Upcoming Events

May 2026

- **May 13–30**, 0000–0000 UTC: Grand Prix du Canada. VE2SPEED, home station, Saint-Jérôme, Quebec, Canada. Frequency: 14.011 MHz.
- **May 18–24**, 0000–2359 UTC: The Indianapolis 500, race two. W9IMS, Indianapolis Motor Speedway ARC, Indianapolis, Indiana. Frequencies: 3.840, 7.245, 14.245, 18.140 MHz.
- **May 22–23**, 1100–1100 UTC: Vietnam Veterans Memorial special event station. K9V, Whitley County Amateur Radio Club, Fort Wayne, Indiana. Frequencies: 7.243, 14.243, 21.343, 28.343 MHz.
- **May 23**, 1100–1530 UTC: Shawshank Prison on the Air. W8WE, Intercity Amateur Radio Club / ARES, Mansfield, Ohio. General Class portions of 20, 40 and 80 meters; 146.940 MHz, PL 71.9 Hz.
- **May 23**, 1200–2359 UTC: Amateur radio origins of KDKA. KD3KA, Allegheny Valley Radio Association, Wexford, Pennsylvania. Frequencies: 3.840, 7.240, 14.240, 21.340 MHz.
- **May 25**, 1100–2100 UTC: USS Orleck Amateur Radio Society Memorial Day event. WJ4DD, USS Orleck Amateur Radio Society, Jacksonville, Florida. Frequencies: 14.250, 14.320, 7.190, 7.250 MHz.

- **May 27–31**, 0000–1500 UTC: Scott Joplin International Ragtime Festival. W0R, Sedalia-Pettis Amateur Radio Club (SPARK), Sedalia, Missouri. Frequencies: 14.250, 28.4 MHz.
- **May 30**, 1400–1900 UTC: Audie Murphy. W2A, New River Valley Amateur Radio Club, Christiansburg, Virginia. Frequency: 14.262 MHz.
- **May 30**, 1600–2100 UTC: Historical Wineries of Ohio. W8L, W8NCK, Fremont, Ohio. Frequencies: 14.045, 14.260, 21.045, 21.260, 28.410 MHz.
- **May 30–31**, 1000–1700 UTC: Selfridge ANG Base 2026 open house and air show. N8S, Utica Shelby Emergency Communications Association, Mount Clemens, Michigan. Frequencies: 7.240, 14.240, 21.240, 28.340 MHz.

June 2026

- **June 1–15**, 0000–2359 UTC: CQ Pride, celebrating Pride Month. N6L, Pride Radio Group, nationwide. All bands.
- **June 1–14**, 1300–2200 UTC: W2W D-Day commemoration. K3NEM, Amateur Radio Club of the National Electronics Museum, Middle River, Maryland. Frequencies: 14.244, 14.044, 7.244, 7.044 MHz.
- **June 6**, 1400–1900 UTC: D-Day. W6J, New River Valley Amateur Radio Club, Christiansburg, Virginia. Frequency: 14.262 MHz.
- **June 6–21**, 0000–2359 UTC: Lewis and Clark Trail on the Air. W7AIA, Clark County Amateur Radio Club, various cities and states. Frequency: 14.240 MHz.
- **June 6–7**: Museum Ships Weekend. Participating stations include:
 - WJ4DD, USS Orleck Amateur Radio Society (Ships on the Air), Jacksonville, Florida, 1300–2100 UTC. Frequencies: 14.250, 14.320, 7.190, 7.250 MHz.
 - N1S, historic ship USS Nautilus (SSN-571), Generations Amateur Radio Club, Groton, Connecticut, 0000–2359 UTC.

Frequencies: 3.950, 7.250, 14.270, 21.075 MHz.

- NI6IW, USS Midway Museum Ship (CV-41), San Diego, California, 1700–2359 UTC. Frequencies: 7.250, 14.320, 14.070 MHz; D-STAR on Papa System repeaters.
- K3SAV, Nuclear Ship Savannah ARC, Baltimore, Maryland, 1400–2200 UTC. 40 meters.
- K8E, Toledo Mobile Radio Association, National Museum of the Great Lakes, Toledo, Ohio, 1400–1830 UTC. Frequencies: 7.039, 7.260, 14.239, 14.260 MHz.
- NB9QV, USS Cobia Amateur Radio Club, Manitowoc, Wisconsin, 1400–2000 UTC. Frequencies: 7.240, 14.240 MHz.
- W4BSF, USS Tennessee Battleship Museum, Big South Fork Amateur Radio Club, Oneida, Tennessee, 0001–2359 UTC. Frequencies as listed by the sponsor: 3.900, 7.200, 14.750, 28.400.
- N4WIS, Battleship USS Wisconsin (BB-64), USS Wisconsin Radio Club, Norfolk, Virginia, 1400–2130 UTC. Frequencies: 14.264, 7.064, 7.264, 21.064, 21.364, 28.364 MHz.
- **June 7**, 1700–2100 UTC: Pima Air and Space Museum 50th anniversary. WE7GV, Green Valley Amateur Radio Club, Sahuarita, Arizona. Frequencies: 14.242, 14.246, 14.248 MHz.
- **June 10–15**, 0000–2359 UTC: 190th anniversary of Arkansas statehood. K5A, Bella Vista Radio Club, Springdale, Arkansas. Frequencies: 14.040, 14.260, 7.040, 7.260 MHz.
- **June 11 – July 19**, 0000–2359 UTC: Football/Fútbol on the Air, the 2026 World Soccer Tournament. W5C, Lake Whitney Amateur Radio Society, Dallas, Texas. Frequency: 14.074 MHz.
- **June 12 – July 19**, 0000–2300 UTC: World Soccer Tournament. WM3PEN, Holmesburg Amateur Radio Club, Philadelphia, Pennsylvania. Frequencies: 14.276, 7.276 MHz.
- **June 13–14**, 1400–2200 UTC: Honoring emigrants on the Oregon Trail at Fort Laramie, Wyoming. K7WY, Oregon Trail Radio Pioneers,

Fort Laramie, Wyoming. Frequencies: 28.525, 21.290, 14.235, 52.0 MHz.

- **June 20**, 1400–2359 UTC: 20th anniversary of the museum ship Icebreaker Mackinaw. W8AGB, CCECPSCO, Mackinaw City, Michigan. Frequency: 14.250 MHz.
- **June 20**, 1400–2100 UTC: East Coast Reflector Meet and Greet. W2ECR, East Coast Reflector, Orchard Park, New York. Frequencies: 7.217, 14.317 MHz.
- **June 20–21**, 1400–2100 UTC: USA 250th. W8FO, QCWA Chapter 142, Perrysburg, Ohio. Frequencies: 14.235, 21.235, 28.535, 50.125 MHz.
- **June 21**, 1200–2200 UTC: World Giraffe Day. W3G, East Penn ARC / Education Alliance for Amateur Radio, Trexlertown, Pennsylvania. Frequency: 7.266 MHz.
- **June 24 – January 1**, 0000–0000 UTC: Celebrating the lives of President Ronald Reagan and Mrs. Nancy Reagan. N6R, Ventura County ARS, Thousand Oaks, California. Frequency: 14.255 MHz.
- **June 24–29**, 0001–2359 UTC: W3M Montgomery ARC Field Day. W3M, Montgomery ARC, Damascus, Maryland. Frequencies: 7.030, 14.185, 28.400 MHz.
- **June 25–27**, 1500–1800 UTC: 37th Red Power Roundup. W0NOZ, Huron Amateur Radio Association, Huron, South Dakota. Frequencies: 28.385, 21.385, 14.285 MHz.
- **June 25 – July 8**, 0000–2359 UTC: America250 DARC. KM0DRC, Doniphan ARC, Doniphan, Missouri. Frequency: 28.500 MHz.
- **June 27–28**, 1800–1800 UTC: GSBARC Field Day. W2GSB, Great South Bay Amateur Radio Club, Babylon, New York. Frequencies: 14.245, 28.500, 21.325, 7.275 MHz.
- **June 28 – July 3**, 0100–0400 UTC: Trail to Eagle. K2BSA/8, Boy Scouts of America, Michigan Crossroads Council, Metamora, Michigan. Frequencies: 14.330, 7.270, 3.840 MHz.

Handiham Radio Club Board, May 2026

- President: Jerry Maccoux, W0UH
- Vice President: Tom Behler, KB8TYJ
- Secretary: Mélanie Carriveau, KN4ZSY
- Treasurer and Handiham Program representative: Lucinda Moody, AB8WF
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- Second Member at Large: Christoph Bungard, DF9WM

To reach the club or any board member, please contact the Handiham Radio Club through the Handiham Program.

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