THE

Hellgate Static

FEBRUARY 2025

Hellgate Amateur Radio Club (Since 1931)
P.O. Box 3811, Missoula, MT. 59806-3811
Web address: https://www.w7px.org/
Editor this month: *K7VK*

Next Hellgate ARC MEETING and RADIO LICENSE EXAMINATION SESSION Monday February 10.

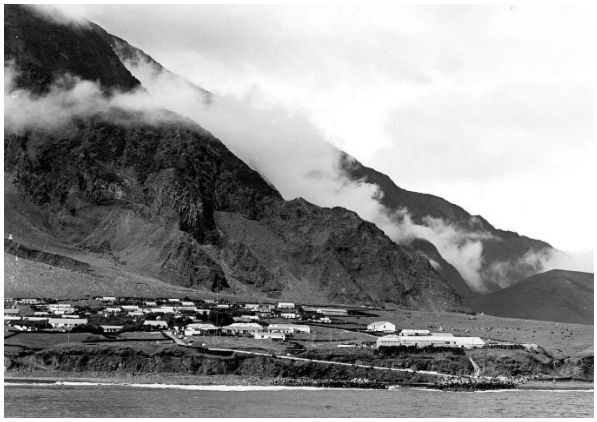
Radio license Exams are **5:30-6:30PM.** Exam **Pre-registration** information is at:
https://www.w7px.org/license-exams/
Meeting begins at **7:00PM** (Program & Business).

Both are at The Church of Jesus Christ of Latter Day Saints, 3026 South Avenue West across the street from Big Sky High School. Use the North entrance.

The Most Remote Six-Meter Radio Operation on Earth

February 10 meeting program.

W7GJ operated "moon bounce", Earth-Moon-Earth (EME), and six-meter ionospheric bounce as ZD9GJ on the small island, Tristan de Cunha during much of September through October 2024. The island is listed as the most remote inhabited island on earth. It is 1750 miles west of South Africa and over 2000 miles to the southern tip of South America. One must travel by boat to get there. Rough seas too, Yikes! Inhabited most of the time the island was evacuated for a few years in the early 1960s due to volcanic eruptions. He will present and answer questions about this DXpedition at the February HARC meeting.



. It'll include a visual presentation on planning, logistics, customs, and transportation (air, auto, boat and foot). See if you feel like a penguin or rain-soaked sheep and enjoy potatoes by the end of this presentation. Come join W7GJ to enjoy this travel adventure and ham radio DX operation.

ISS APRS Tracking

Thanks, **K7MTD** for the APRS tracking/digipeater presentation of the International Space Station (ISS) at the January HARC meeting. Members are now reporting successful and fun digipeating through the ISS.

CONGRATULATIONS Successful Amateur Radio License Candidates

N7PAS VE Contact

Chandon Fugate of Missoula passed the **Extra** exam. His callsign is **KK7YBW**.
Shannon Hanson of Whitefish passed the **Technician** exam. His new callsign is **KK7YOR.**
Jack Slayer of Missoula passed the **Technician** exam. His new callsign is **KK7YOS**.
Karlie Slayer of Missoula passed the **Technician** exam. Her new callsign is **KK7YOV**.
John Williams of Missoula passed the **Technician** exam via online remote session with Ham Radio Crash Course (HRCC). His new callsign is **KK7YOT**.
Volunteer Examiners included **W7RPG, K7MTD** and **N7PAS**l. Thanks guys.

C4FM on the 147.04 MHz Repeater - What is it?

K7VK

C4FM, Yaesu's System Fusion, is an FM Digital communication mode available on the new HARC 147.04 MHz repeater and on newer Yaesu radios. It's an addition to our traditional FM Analog mode. C4FM, stands for *Continuous Four-Level Frequency Modulation*. **So, what is it and what does it do?**

FM Digital is a newer technology, changing audio into digital bits. It's the old binary, 0 and 1 stuff. The carrier frequency is shifted to four distinct levels that represent binary 00, 01, 10 & 11. There, I'm now over my head.

With this digital conversion the communication can now transmit and receive voice, data and even images. FM Digital communication works well in crowded, noisy and interfering environments. A cool thing about C4FM is its ability to switch between FM Analog and FM Digital automatically. This is based on what FM mode the receiver 'hears'. FM Digital can also screen-display additional information such as station and repeater callsigns, GPS coordinates and brief text messages. Great for nets!

Characteristic of FM Digital communication is it's 'either heard' or 'not heard at all'. Mode comparisons by a few local operators find this new mode as described. While FM Analog can be noisy, full of static and up and down in audio strength especially with motion, we've found that FM Digital is consistently clear communication. However, the FM Digital signals are either 'clearly heard' or 'completely silent'. There seems to be no 'in between'. Opening a radio's squelch

can let your brain interpret another station's weak FM Analog transmission through the noise. This cannot be achieved with FM Digital.
Generally, with some voices we've found more realistic audio quality with a 'full-quieting' FM Analog signal. Also, it appears greater over-the-air distance communications are still achieved by FM Analog versus FM Digital. Given these differences though, there are definite advantages to having both FM Analog and FM Digital modes available.

SALES OF RADIO EQUIPMENT brings a BIG BENEFIT TO HARC

Thanks to the fine work of HARC members of (HF Committee), **K7MTD W7XT K7QA** To, **KK7NOM N7NHS**, and **K0SN** the sale of donated radio gear has been placing used radio gear in the hands of happy hams and providing funds to support HARC operations and repeaters. It's a lot of work, advertising, boxing and shipping. Thanks to them and the donors! Recent sales include a Yaesu FT757GX transceiver and matching auto-tuner, Heathkit B101 transceiver, Heathkit SB1000 amp and HP23C power supply.

WINTER FIELD DAY (WFD) – is in the Logs!

Several HARC members completed Winter Field Day, January 25-26. Burrrr! Here are their summary reports.

From **KK7BIP**

Winter Field Day is the colder companion to the Field Day we all know and love. Whereas Field Day is intended to put your portable operating and emergency communications skills to the test, Winter Field Day steps up the challenge with snow, and cold temperatures. Winter Field Day takes place on the last full weekend of January. This year the time frame was extended past the old "noon to noon" to 1600 UTC to 2159 UTC allowing for more time to operate. Stations have the option to operate under different categories including Home, Mobile, Indoors, and Outdoors. If you don't want to fight the cold, consider one of the warmer categories, it will still be a great test of your skills and equipment.

The Hellgate Amateur Radio Club set up a station at Harpers Lake Campground near Seeley Lake, Montana. To endure the single digit temperature, we deployed an ice fishing tent and propane heater. The campground was the perfect spot to deploy a few wire antennas and have a campfire. We operated solely on battery power. (KK7NOM), (N7NHS), (W7RPG), (KE7HJN), and (KK7BIP) made a total of 112 contacts as far as Alaska and Hawaii. Our biggest challenges were staying warm,

keeping the heater lit, and getting our antennas to tune up. At noon, in collaboration with the Montana Traffic Net, we took the opportunity to practice formal traffic handling as a further practice of Emergency Communications. We hope you will join us next year.

KR7Q, lone operator, reports that he "had a good time." He operated 'mobile' from the 3-mile Community Center parking lot near Stevensville. This was his' first time with WFD. He managed to stay warm, operating 4.5 hours on mostly 20m & 15m using 30 watts from an FT-710 and an End-Fed Halfwave antenna. He made 93 contacts. A cool thing to do during Ham Radio Operations in public places, He put a sign on his window so passersby would know what he was doing. He reports warm receptions from the local Center Manager and with several publics who stopped by. Good Ham Radio PR!
Here's a link to a video he prepared of his activation.
https://www.montanaartqwerks.com/My-Ham-Radio-Page-de-KR7Q/2025-HAMN-RADIO-PHOTOS-VIDEOS/Winter-Field-Day-2025

NEW NET on 2-METERS

HARC has a new net on 147.04 MHz, Tuesday at 7 PM local time. **K7MTD** says it's an FM Digital net using the **C4FM** digital mode. The purpose is to determine the characteristics of the FM Digital mode through the repeater and simplex.
Other nets on 147.90 & 147.04 MHz repeater, FM analog, are Wednesday night from 7:30 to 9:30 local time and Saturday 9 AM local time. The later net is an informal net for general ham radio discussions including items for sale. These Nets are open to all.

147.04 REPEATER COVERAGE Update

K7VK

Thanks to the reports from hams in outlying areas, the initial mapping of propagation coverage of the 147.04 MHz repeater posted in the December issue of the ***Hellgate Static*** looks pretty good (Radio Mobile online, https://www.ve2dbe.com/rmonline_s.asp).
Good coverage mapping has been confirmed by amateur radio operators in Whitefish, on West Fork Butte Lookout and in the upper area of Lolo Pass. The Lolo Pass parking lot has 'light but readable' coverage as predicted as is much of Kalispell and at the Harper's Lake Winter Field Day site. Surprising coverage is better than predicted from Drummond to Philipsburg. If you have other coverage experiences, please share with other hams via the HARC nets.

WHAT'S THE CURRENT WEATHER?

A good source of current weather conditions is the National Weather Service. But you may be able to get greater detail for specific locations. The Automatic Packet Reporting System (APRS) website includes site-specific weather station information from volunteer locations. View, https://aprs.fi/#!lat=46.98460&lng=-114.11000. The blue circles with letters WX in them are the weather stations.

Click on **K7MTD** weather icon and see current data. Click on the blue "**show weather charts**" to reveal lots of graphs. Navigate around the map to view other weather stations.

HARC NEEDS a Newsletter Editor

The Hellgate Static has been a continuous club newsletter at least since 1960. Many thanks to **N7PAS**, for editing the Hellgate Static for the last 2.5 years. He has now left the position, becoming busy with other duties. **K7VK** has edited this February issue thanks to input from several HARC members.
HARC needs an editor, full time, who can be at the meetings most of the time.
If interested please contact **NZ7S**.

LOOKING for the HARC EVENTS CALENDAR?

The updated calendar of club events is on the HARC website, **https://www.w7px.org/**.
It's a good place to find what event is up next. If you have additional info, please let the webmaster **K7MSO** or asistant webmaster **N7PAS** know.

Annual harc member dues

You can assist HARC with what we provide. If not current, please consider **HARC membership**. Your annual dues contribute greatly to HARC activities including public service and club events, and for the maintenance of 5 local repeaters. It's a worthwhile tax-deductible, 501(C)(3), donation at $25 per year.

https://www.w7px.org/wp-content/uploads/membership/Membership-Application.pdf

DEDICATED VOLUNTEER CONTACTS of the *Hellgate ARC*

HARC Officers: Contact Email - QRZ
President: NZ7S
Vice-President: W7RPG
Treasurer: KJ7YHG
Secretary: K7MSO
Webmaster: contact_us@w7px.org

AD-HOC HF Committee:
W7XT, KK7NOM, N7NHS, K7QA, K7MTD, K0SN
Buy-Sell Operations hfc@w7px.org

Appointed Position Contacts:
Emergency Coordinator:
contact_us@w7px.org
QSLs, Awards: contact_us@w7px.org
License Exams Contact VE:
harc.ve.testing@gmail.com
Static Editor: editor@w7px.org
Vacant and need volunteers!