



The Hellgate Static

October 2020



Hellgate Amateur Radio Club
P.O. Box 3811, Missoula, MT 59806-3811

Inside this issue:

- MARS COMEX October 3rd-26th
- 60 Meter Operation FAQ
- FCC considers changes to proposal to delete 3.4 GHz Amateur band
- Starlink Provides Emergency Communications for Washington Fires
- September HARC Meeting Minutes

Upcoming Events

October 3-26	MARS COMEX
October 16	HARC 2 meter Transmitter Hunt
October 16-18	Boy Scout Jamboree on the Air
October TBA	Western Montana Dirt Derby
December 5	Skywarn Recognition Day
December 14	Christmas Dinner

Officers:

President: Mike Leary, K7MSO

Vice-President: Eric Sedgwick, NZ7S

Treasurer: Dick Walton W7XT

Secretary: Donna Pecastaing, KC5WRA

Standing Committees:

Emergency Coordinator: Jerry Ehli, N7GE

QSLs, Awards: Bob Henderson, N7MSU

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Repeater Advisory Committee:

Eric Sedgwick NZ7S (Chair)

Tom Mc Ginley, K7QA

Tom Hellem, K0SN (Re-elected)

Paul Shuey, N7PAS (Re-elected)

October Zoom Meeting

Due to the current Corona virus crisis, the HARC October meeting is scheduled to be conducted remotely via zoom teleconferencing software on October 12th.

Watch for an invitation to the meeting in your Email, it will contain the meeting ID, a password and a link to the meeting. Be sure your microphone is enabled.

If you have not received an invitation by Monday morning, October 12th, contact Mike Leary at mleary2001@yahoo.com and request an invitation.

Stay healthy and we hope to see you there.

MARS COMEX Exercise October 3rd-26th

(From ARRL Newsletter 9/21/20)

Military Auxiliary Radio System (MARS) volunteers will take part in the Department of Defense (DOD) Communications Exercise 20-4, starting on October 3 and concluding on October 26.

The MARS focus is interoperability with ARRL and the amateur radio community. "Throughout the month of October, MARS members will interoperate with various amateur radio organizations that will be conducting their annual simulated emergency tests with state, county, and local emergency management personnel," said MARS Chief Paul English, WD8DBY.

"MARS members will send a DOD-approved message to the amateur radio organizations recognizing this cooperative interoperability effort." MARS members will also train with the ARRL National Traffic System (NTS) and Radio Relay International (RRI) to send ICS 213 general messages to numerous amateur radio leaders across the US. "This exercise will culminate with MARS Auxiliaries sending a number of summary messages in support of a larger DOD communications exercise taking place October 20 - 26," English added.

Throughout October, MARS stations will operate on 60 meters, and WWV/WWVH will broadcast messages to the amateur radio community. English assures no disruption to communications throughout the month-long series of training.

How you can participate: MARS COMEX 2020-4 is currently underway. One of the focuses of the exercise is interoperability with the Amateur Radio Service. There are several ways for amateurs in our area to become involved. MARS stations during exercise will receive requests for information such as weather information that is received from the airport by **over the air radio reception**. In the Missoula area that airport is **KMSO, 126.6500 MHz AM** modulation. Many amateur radios that are sold now days will tune to these frequencies. Internet or phone call for this information is not allowed. However finding the frequency for the airport is allowed. Most likely this info will come from a MARS stations however it could come by way of amateur radio relayed on VHF or HF.

There will also be check in nets on **60 meter Channel 1 at 12:00 pm** on the following dates listed below. Amateur stations will check in after they hear net control open the net and request checkins. The dates listed cover what is known to MARS as Region Eight. Other nets may be on every day they will just be from other regions around the country. Amateurs should check-in to any or all of them.

Messages will be put onto the Montana Traffic Net (MTN) system from MARS stations as they receive messages for specific individuals. Amateurs Radio operators are encouraged to participate by being active on MTN and local VHF nets.

If there are questions or concerns regarding this information please contact me.

Thanks,

Eric Sedgwick NZ7S

406-544-1312

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Amateur Radio Operation on the 60 Meter Band

(From ARRL 60 Meter FAQ)

Amateurs are permitted to operate on five frequency channels, each having an effective bandwidth of 2.8 kHz.

Table 1:

Channel 1: 5330.5 kHz

Channel 2: 5346.5 kHz

Channel 3: 5357.0 kHz

Channel 4: 5371.5 kHz

Channel 5: 5403.5 kHz

These frequencies are available for use by stations having a control operator holding a General, Advanced or Amateur Extra class license. It is important to note that the frequencies shown above are suppressed carrier frequencies – the frequencies that appear in your transceiver’s tuning display when your transceiver is in the USB mode.

Amateurs may transmit with an effective radiated power of 100 W or less, relative to a half-wave dipole. If you’re using a commercial directional antenna, FCC Rules require you to keep a copy of the manufacturer’s gain specifications in your station records. If you built the directional antenna yourself, you must calculate the gain and keep the results in your station records.

When using a directional antenna, you must take your antenna gain into account when setting your RF output power. For example, if your antenna offers 3 dB gain, your maximum legal output power on 60 meters should be no more than 50 W (50 W plus 3 dB gain equals 100 W Effective Radiated Power).

In addition to increasing the power amateurs can use on 60 meters, the Report and Order also expanded the number of legal operating modes:

Upper Sideband (USB)

CW

Digital

Each mode comes with its own requirements for legal operation on 60 meters.

Upper Sideband Operation

Upper Sideband operation on 60 meters is simple. Just tune your transceiver to one of the channel frequencies shown in Table 1 and operate, being careful you do not overmodulate and create “splatter” that would fall outside the 2.8 kHz channel bandwidths. If your transceiver allows you to adjust your maximum SSB transmit bandwidth, setting it to 2.4 kHz should keep you well within the legal limit.

CW Operation

CW operation must take place at the center of your chosen channel. This means that your transmitting frequency must be 1.5 kHz above the suppressed carrier frequency as specified in the Report and Order (see Table 1). Operating at strict channel-center frequencies may come as a disappointment to many, but cooperating with the NTIA is key to expanded privileges in the future.

The channel center frequencies are:

Channel 1: 5332.0 kHz

Channel 2: 5348.0 kHz

Channel 3: 5358.5 kHz

Channel 4: 5373.0 kHz

Channel 5: 5405.0 kHz

Consult your transceiver manual. Some transceivers transmit CW at the exact frequencies shown on their displays, but others offset the actual transmission frequency by a certain amount (for example, 600 Hz). If your manual is not clear on this point, contact the manufacturer. If you have access to a frequency counter, this is an excellent tool for ensuring that your CW signal is on the channel center frequency.

Digital Operation

Our expanded privileges on 60 meters were the result of collaboration between the FCC and the NTIA – the National Telecommunications and Information Administration, the agency that manages and coordinates telecommunications activities among US government departments, the primary users of the band. The NTIA expressed concern about possible interference and requested that amateurs limit digital operating to PSK31 and PACTOR III only.

It is certainly possible to interpret the FCC Report and Order somewhat broadly as it concerns digital operating on the band, but be careful not to read too much into the text. Therefore, as a practical matter it appears that any J2D data emission is to be permitted up to a bandwidth of 2.8 kHz, provided that care is exercised to limit the length of transmissions

With an eye to the potential for expanded 60 meter privileges in the future, the ARRL believes it is critical to cooperate fully with the NTIA. Therefore, the ARRL asks all amateurs to restrict 60-meter digital operations to PSK31 or PACTOR III.

With PSK31 you must operate on the following channel center frequencies:

Channel 1: 5332.0 kHz

Channel 2: 5348.0 kHz

Channel 3: 5358.5 kHz

Channel 4: 5373.0 kHz

Channel 5: 5405.0 kHz

The easiest way to achieve this is to place your transceiver in the USB mode and tune to one of the suppressed carrier channel frequencies shown in Table 1.

With your PSK31 software display configured to indicate audio frequencies, click your mouse cursor at the 1500 Hz mark (see below). With your radio in the USB mode, this marker indicates the center of the channel and it is the frequency on which you should be transmitting.

PACTOR III operation on 60 meters is straightforward. With your transceiver in the USB mode, tune to one of the suppressed carrier channel frequencies shown in Table 1. Note that only live keyboard-to-keyboard operation of PACTOR III is allowed. Unattended automatic operation is not permitted.

Tips for Avoiding Interference

Because amateurs are only secondary users on 60 meters, we are required to yield to other services.

In other words, if you suddenly hear a non-amateur transmission on the channel, you must cease operation on that channel immediately. Always listen before transmitting. If you hear another signal on the channel, whether it is a signal from an Amateur Radio or government/private station, don't transmit.

As amateurs exercise their new 60 meter privileges, a more detailed and specific channel occupancy plan may become clear. In the meantime, follow these tips to share the channels as efficiently as possible:

- Keep your transmissions as short as possible with frequent breaks to listen for other signals.
- Although split-channel operation (transmitting on one channel and listening on another), is permitted under the rules, this is considered poor operating practice on 60 meters because it effectively ties up two channels at once and increases potential interference. If you must operate split channel, monitor your transmit channel for other signals.
- To locate a clear channel, USB operators should begin at Channel 5 and move down (if necessary) to Channels 4, 3, 2 and 1 until a clear channel is found. CW and digital operators should reverse this pattern, beginning at Channel 1 and moving upward until a clear channel is found.
- If you hear a digital signal and you're not sure if it is an Amateur Radio signal, don't transmit; move to another channel instead. Most primary users on 60 meters operate USB or wide-shift digital signals, so they are relatively easy to recognize. To help you identify the sounds of popular amateur digital modes, see the Get on the Air with HF Digital web page at www.arrl.org/hf-digital.
- Take care when using narrow receive filters, such as when operating CW. To be in compliance you need to be able to hear other stations that may begin operating on the channel.
- Over the years, Channel 5 has become a de facto international DX channel. With that in mind, avoid domestic QSOs on this channel when possible.

HARC Monthly Transmitter Hunts

The September HARC two meter transmitter on Friday the 18th was fun, although we didn't have many participants, possibly due to a hitch in the E-mail announcing the event. Terry KF7BQ was the first to find the fox with Mike K7MSO taking the 2nd spot and Richie K7QNZ taking 3rd place. Jackie, N7RBC was the fox.

The next club transmitter hunt will take place on Friday October 16th at 7:00 PM local time. The transmitter frequency is 146.560 MHz. The fox will transmit for first minute and then be silent for four minutes repeating through the hunt. A full copy of the rules will be found on the club website at:

<https://www.w7px.org/>

The club has ordered a foxhunt transmitter controller which will make the foxes job easier and may make for a more consistent signal. The controller is unlikely to be delivered and programmed prior to this months hunt.

ARRL seeks changes in FCC proposal to delete 3.4 GHz amateur band

ARRL Newsletter Oct 2, 2020

ARRL met via telephone with FCC staff members this week to emphasize its opposition to the FCC Notice of Proposed Rulemaking (NPRM) in Docket 19-348 to delete amateur radio from the 3.3 - 3.5 GHz band.

The FCC will take final action in the proceeding when it meets on September 30.

The NPRM can be found online in PDF format at, <https://ecfsapi.fcc.gov/file/121661888341/FCC-19-130A1.pdf>.

In comments filed earlier this year, ARRL urged that the secondary status for amateur radio in the band be continued. In a series of meetings with Commissioner legal advisors and staff members, ARRL explained how continued secondary use by radio amateurs will not impair or devalue use of this spectrum by future primary licensees, including those intending to provide 5G or other services. ARRL also stressed the various public-benefit uses of the spectrum by amateurs, including ongoing use of television and mesh networks on the west coast of the US as part of efforts to contain wildfires.

With regard to interference potential, ARRL stated that amateur radio operators using these bands are technically proficient and have a long history of sharing with primary users in this and other bands without causing interference.

FCC staff expressed concern that because amateur operations in the band are less clearly defined than those of other services also operating on a non-interference in the band, they would be difficult to locate should interference occur. ARRL Washington Counsel David Siddall, K3ZJ, noted that Section 97.303(g), an existing amateur rule, could be amended or used to craft a notification requirement, if the FCC concluded that relying on other methods would be insufficient.

The FCC participants indicated that such a requirement, in place of deleting the secondary allocation, would be given serious consideration. (Section 97.303(g) contains specific frequency-sharing requirements for the 2200- and 630-meter amateur bands.)

Siddall also pointed out that the Amateur Television Network (ATN) filed an email with the Commission that included a letter from the California Governor's Office of Emergency Services (Cal OES) describing amateur radio's contributions, specifically calling out the need for 3.4 GHz access and explaining why other bands are not sufficient.

ARRL also argued that, in any event, continued operation in the band should be permitted until and unless an actual potential for interference exists in a specific geographic area. ARRL said the FCC should not intentionally leave spectrum capacity unused during a build-out period that the Commission's own proposal indicates will last for at least 12 years in some areas.

The 3.4 GHz band is used for AREDN (Amateur Radio Emergency Data Network) which allows amateur radio operators to provide high bandwidth services in time of disaster, using low cost commercial microwave equipment designed for wireless internet providers.

Press time Update: The AMSAT News Service (ANS) reports that at its open meeting on September 30, the Federal Communications Commission (FCC) adopted a Report and Order that sunsets Amateur use of the 3.3-3.5 GHz band

This spectrum includes the 3.40-3.41 GHz Amateur-Satellite Service allocation. AMSAT had previously filed comments opposing the FCC's proposal to delete this spectrum.

Starlink Provides Wildfire Emergency Communications

Space-X is currently providing Washington State's Military Emergency Management Department high bandwidth satellite service utilizing its fleet of approximately 800 low earth orbit satellites. Space-X is providing the service and seven ground terminal units free of charge, to demonstrate and evaluate the satellite fleet's performance.

Richard Hall, the emergency telecommunications leader of the Washington State Military Department's IT division, told CNBC, "I have never set up any tactical satellite equipment that has been as quick to set up and anywhere near as reliable [as Starlink]."

Hall also suggested Starlink was superior to other satellite broadband services his unit has used previously. Starlink satellites orbit Earth at an altitude of about 500km, or 311 miles, far closer to Earth than traditional conventional satellite broadband services.

According to Hall, Starlink offers double the bandwidth of other services and said he'd seen more than 150% decreases in latency. "I've seen lower than 30 millisecond latency consistently," he said.

Space-X is busy launching additional satellites and intends the fleet to eventually number 12,000 Starlink satellites, providing high speed internet to under-served rural areas.

Minutes – September 2020 Zoom Meeting

Attendance: Terry KF7BQ, Mike K7MSO, Jackie KC7RBC, Dick W7XT, Tom K7QA, Dave K7MTD, Rich K7QNZ, Jerry AF7AO

Google blockage to club email list ~90 on Bcc list

Approval of last meeting's minutes. Passed

Approval of Treasurer's report

- One new member dues
- Honorary Life Membership for Bob Henderson Passed
- SK Lewis Ball, Bill Ferrell, Wayne Weber,

Repeater Committee Report – tabled

HF Committee

- Ye ol' smoking generator
- Still selling equipment. HW101 stills needs work.
- Steve Flood is working on some old transceivers.

Previous Events:

- Fox Hunt

Upcoming Events:

- 2nd Fox Hunt possible 18th Sep
- Riverbank Run October 3rd ???

VHF Net Control operators:

- 16 Sep Mike K7MSO
- 23 Sep Terry KF7BQ
- 30 Sep
- 07 Oct Donna KC5WRA

*** Next Club meeting: 12 Oct

Look for alternate room