



# The Hellgate Static

## December 2021



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

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### Upcoming Events

**No December HARC Meeting**  
**See you next year**

### Officers:

**President:** Mike Leary, K7MSO  
**Vice-President:** Eric Sedgwick, NZ7S  
**Treasurer:** Dick Walton W7XT  
**Secretary:** Joe Geldrich, AG7FH

### Standing Committees:

**Emergency Coordinator:** Jerry Ehli, N7GE  
**QSLs, Awards:** Bob Henderson, N7MSU  
**Webmaster:** Mike Leary, K7MSO  
**Radio License Exams Contact VE:**  
Paul Shuey, N7PAS  
**Static Editor:** Terry Cook, KF7BQ  
Bluetooth\_one@hotmail.com

### Repeater Advisory Committee:

Eric Sedgwick NZ7S (Chair)  
Tom Hellem, K0SN  
Paul Shuey, N7PAS  
Tom Mc Ginley, K7QA (Re-elected)

We are back to having monthly meetings and license class testing in person. The meetings are on the 2<sup>nd</sup> Monday of each Month

Meetings will be held 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 as all others will be locked.

**Please note: Masks are currently required while in the building.**

Testing will begin promptly at 5:30PM, and end at 6:30PM.

Meeting area will be set up between 6:30-7:00PM and meeting will begin at 7:00PM (Business & Program).

Cleanup and Sanitizing will be done from 9:00-9:30. Volunteers may assist.

## HARC FIELD DAY 2021

FD 2021 for HARC and W7PX turned out better than expected. We possibly set a new scoring record for class 1A in Montana and maybe even the entire ARRL NW Division, although ARRL does not publish records for FD. Your HF Committee decided to set up 2 separate stations this year, one using W7PX for a serious competitive scoring effort and the other using the call K7BG for new members and others wanting to get FD operating experience.

We were hoping to enlist as many operators and help for setup and teardown as possible. This year's crew included team leader Tom K0SN, Pat, N9RV, Tom, K7QA, Rich, K7QNZ and new member John, W7KRZ. Bill KJ7PCR came up Saturday afternoon to observe the action.



*Tom K0SN at K7BG*

Dick, W7XT had planned to participate but had to spend the weekend dealing with a few health challenges. We are happy to hear Dick is back to full speed again. Those of you who could not attend and participate really missed out enjoying this traditional major ham radio club event of the year.

The W7PX setup consisted of an Elecraft K3S with full N1MM logging and control laptop integration, set up inside the comfort of K0SN's camper trailer. Antennas used were the excellent 3 element 20/15 meter yagi (custom built by K0SN) on the HARC trailer and 40 foot crankup mast. Two zepp dipoles with ladder feedlines were strung up between fir trees at 60 feet up, one for 40 meters and the other for 40 and 80 meters that was shared with the K7BG station. K0SN's tennis ball cannon with

fishing line established the rope pull-up anchor points on the support trees.

The K7BG station setup consisted of the club's new Elecraft K3S, also with full N1MM laptop PC integration set up in the KGVO/KYSS camper trailer provided by Townsquare Media. Unfortunately the K3S developed a nasty intermittent Saturday evening and had to be replaced by the club's Elecraft K2 backup transceiver. It performed well for the remainder of the event. Antennas used were K0SN's custom 2 element 20/15 meter yagi on a custom 25 ft "teeter-totter" mast and the 40/80 zepp dipole shared with W7PX. See all the attached pictures.

N9RV and K0SN alternated roughly 2 hour shifts on the W7PX station from 12N until 11PM when K7QA pulled the graveyard shift. Then back to N9RV and K0SN Sunday morning until FD ended at 12N. Watching both Pat and Tom carve through the pileups calling W7PX with QSO rates of 100 per hour and greater was a real treat.

John, W7KRZ operated most of the event using SSB with the K7BG call sign. Since John is a General class, we decided to borrow the K7BG Extra class call from Matt Trott with his blessing to have full use of all bands. Matt was a longtime Great Falls area contester who recently moved to South Dakota.

John pitched his tent Friday and stayed for the entire 3 day event along with K0SN onsite. He really got in the groove racking up Qs and was a great help during set up and tear down. During break times for John, K7QA rattled off some CW and SSB Qs on K7BG. It sure would have been nice to have more members join the action on that station.



Pat N9RV at W7PX



John W7KRZ at K7BG

Rich, K7QNZ came up Sunday morning with a box of delicious donuts and helped tear down. We got the entire setup dismantled and loaded in 2 hours. And then we enjoyed cold beers trading previous FD war stories and chatter about various logging programs.

Propagation conditions on 20, 40 and 80 meters were superb with a very quiet sun and rising solar indexes. We were hoping 15 meters would perform well but it sadly disappointed, especially on Saturday. Sunday perked up a bit but we'll have to wait til next year for 15 and maybe even 10 to open up as solar cycle 25 gets more active.



80 and 40 Zepp dipole at 60 feet



40 meter Zepp dipole at 60 feet

FD team leader KOSN already has more ideas and plans on how to improve next year's FD. This site is near perfect for its down sloping terrain and wide open look to the horizon in all important directions for propagating a big signal with only 100 watts. We know that the Mount Sentinel location might pose an access problem for some members, but the road is pretty decently maintained and can be easily driven with front wheel drive and 4x4 vehicles.

You can see many of the early posted FD scores on [3830scores.com](http://3830scores.com). W7PX is still leading the class 1A category nationwide with 2262 total QSOs and a 7840 score. K7BG added 260 Qs with a 730 score. It will take ARRL many more months to compile and publish all the entries for FD 2021.

Make early plans now to participate in FD 2022! **Update: The final scores for Field Day 2021 are in**



## We placed 2<sup>nd</sup> in the Nation for Class 1A (Three or more persons Club/Non-Club Portable under 150 Watts)

Congratulations and a huge thank you to all the members and visitors that helped make this possible.

The screen shot of final scores as posted by the ARRL shows just the very top performers in the 1A classification. There were over 150 participants in the class.

This year's crew included team leader Tom K0SN, Pat, N9RV, Tom, K7QA, Rich, K7QNZ and new member John, W7KRZ. Bill KJ7PCR came up Saturday afternoon to observe the action.

Dick, W7XT had planned to participate but had to spend the weekend dealing with a few health challenges.

### Three or More Person Club/ Non-Club Portable

1A						
Not Case ARC						
W3USA	1,753	2	3	8,134	OH	
Hellgate ARC						
W7PX	2,262	2	5	8,090	MT	
Blazing Paddles FD Team						
AB9YC	1,644	2	6	8,004	IL	
NCAARS/Brock Mtn. CG						
NG5M	1,582	2	5	7,218	AR	
Mui's Marauders						
W2RA	1,717	2	3	7,218	WNY	
Lafayette DX Assn.						
W9LDX	1,475	2	11	6,226	IN	
Bedlington Terrior ARC of Tucson						
WA7ND	1,510	2	2	6,000	AZ	

## THE CHARLIE WIGGLY BULLSHEET

News and Views from HARC's CW ops

By Dick Walton W7XT

### CW's Keys

Year ago, The University of Montana's Chemistry Department laboratory was connected to the chemicals storage room in the basement by buzzer. One day a rather new member of the faculty, toying with the buzzer's button, sent a couple CQs. Immediately there came back from the storeroom "DE" (from) followed by a call sign. The sender of the reply was another member of the faculty who happened to be a very active, accomplished ham.

The spring-loaded button switches for the buzzers were being used as telegraph keys. They had the basic characteristics of the manual keys that have been in use since telegraphy began. Telegraph keys are in fact spring-loaded momentary contact switches. They close a circuit, causing a current to flow, resulting in a signal discernible by the ear or eye. As most everyone with an interest in ham radio knows, the information in those signals is conveyed in a code whose elements are "short" sounds, "long" sounds, and a crucial but much neglected third element, spaces, i.e., intervals of no sound. The lengths of these three are intended to be determined by constant ratios; e.g., dits are to be one-third the length of dahs. The absolute length of the elements is determined by the sending speed: dits at 20 WPM are much shorter than at 5 WPM, but the ratio of the relative lengths of dits and dahs is meant to remain the same, whatever the speed.

At present there are three types of keys in common use by ham radio CW operators: manual keys, semi-automatic keys ("bugs"), and keys used with electronic keyers.

The basic design of manual keys was established in the early days of landline telegraphy. The main component is a lever held in the switch's open position by a spring, the switch being closed by pressing the lever down. The operator's end of the lever bears some kind of handle, usually in the form of a knob or rather wide button. Most contemporary keys employ a design patented by JH Bunnell in 1881. Thousands of keys of this basic design were made for the U.S. military in WWII, the most famous being designated the J-38. A great many Novice Class hams, including the author, used a surplus J-38, purchased for little more than a dollar. It didn't take many hours of rag-chewing with one of those "pump handles" to develop a stiff arm.

The semi-automatic key came into use about the turn of the century (not this one—the last one). In these clever devices the lever arm of the switch moves horizontally. The dahs are made just as if using a standard manual key turned on its side, but the dits are made by swinging the lever in the opposite direction, causing it to strike a stop, leaving a springy strip of metal vibrating on the arm's end. The switch's contact is on the end of that metal strip, making contact with the other side of the circuit on each vibration. Bug sent dits tend to be shorter than the ratio to dahs called for by Sam Morse's specifications, resulting in some operator idiosyncrasy, his, or her, "fist."

Finally, there are keys that operate electronic keyers, the actual devices that do the switching on and off. These keys, usually called "paddles," are switches that control switches. Paddles are of two types, those with a single lever, and those with dual levers, called "iambic." The levers move horizontally as in a "bug." Movement in one direction closes a switch causing the keyer to close its

dah side until the lever is released; moved the other direction the dit side is closed until the lever is released. The circuitry of the keyer determines the lengths of the dits and dahs; hence, keyer sent code is more regular and machine-like than code sent with a manual or semi-automatic key. Keyer sent code is easier to copy than most sent by hand or bug, and its precise regularity no doubt causes old Sam's bones to rest more soundly in his grave.\*

## **HARC Meeting Announcements**

As the November meeting minutes show, the December HARC meeting has been canceled. For many years the December meeting has been in the form of a Christmas party at a local restaurant. In recent years we have gathered at the Eagles Club on South Avenue. The Covid pandemic forced cancellation of the party last year, and it seemed advisable not to hold it again this year. Hence, there will be no HARC meeting this month.

In view of the fact that the annual election of officers traditionally takes place at the December meeting, the election will be the first item on the agenda at the January meeting, January 10th. You will want to mark your calendars prominently for that date. The principal door prize will be a new, in the box, Baofeng UV-5R. Other items, valuable even though not new or in a box, will also be offered.

Here are the nominees as of this date, each office's nominees listed in alphabetical order:

President: Mike Leary, K7MSO; Paul Shuey, N7PAS;

Vice-President: Eric Sedgwick, NZ7S;

Secretary: Joe Geldrich, AG7FH;

Treasurer: Dick Walton, W7XT.

Further nominations may be made at the meeting before votes are cast. Voting will be by written ballot for any contested offices.

## **November Meeting Testing Results**

Congratulations to William J Largent who passed his Technician Class Exam and is now KK7BUV.

### **HARC Nov. 8th 2021, Meeting Minutes**

Mike, K7MS0 Called the meeting to order at 7:05 PM

Roll taken, Dick Walton K7XT, George McKee KJ7OKW, Tom Hellam KOSN, Tom McGinley K7QA, Paul Shuey N7PAS, Eric Sedgwick NZ7S, Bill Reese KJ7PCR, Aaron Nelson N7BIO, Dave Herzberg, K7MTD, Rich Kingdon K7QNZ, Gary Duncan KG7WYQ, Mike Leary K7MSO, Joe Geldrich AG7FH.

Mike K7MSO, Gave an informative presentation on FT-8.

Minutes from the last meeting approved.

Dick W7XT Gave the Treasures report, and reported that Bob Henderson donated a Vertical antenna, and a mobile HF antenna. And also that John Rettenmayer donate an UVI HF transceiver, new in the box. Dick also said that all of Donna's equipment is for sale.

Paul K7PAS suggested that the club buy a new projector, club approved up to 200.00 for that, Paul will Buy.

Eric NZ7S reported on the Dirt Dash, 10/30 and 31. Eric also reports that Sky Warn 12/4&5/21 will be a virtual event this year.

Tom KOSN Made a motion to cancel Dec. meeting and Christmas dinner this year. Nominations are open and will be accepted up to the Jan. meeting.

Nominations were made for Mike K7MS0 President, Eric NZ7S Vice President, Dick W7XT Treasurer, Joe AG7FH Secretary, 3 committee positions are open, Tom KOSN, Paul N7PAS, John W7KRZ, and Gary KG7WYQ, were nominated. Nominations will remain open and accepted up the Jan. meeting.

### **Net Control Operators for Wed. Night VHF Net.**

Nov. 10 Mike K7MS0

17 Ben KK7AJ0

24 Joe AG7FH

Dec. 1 Paul N7PAS

8 Aaron N7BIO

Meeting adjourned 8:55 PM, Sec. Joe AG7FH

## Classified For Sale / Wanted

HY-Gain AV-640 vertical antenna; covers 40-6 meters, no radials required, legal limit power; excellent condition -- \$275

Tokyo Hy-Power 2 meter amp for HTs; FM/SSB, 1 watt in, 25-30 out -- \$35

NFH-267 Wattmeter-Dummy Load, up to 1.5 KW, new resistor -- \$115

MFJ-402 EconoKeyer with built-in paddle -- \$30

MFJ-564 Bencher style iambic paddle, chrome (very shiny) -- \$35

Epson WorkForce 520 inkjet printer/scanner – FREE to caring, smoke-free home.

Toshiba Protégé 650 laptop computer, extra batteries, etc. – FREE to authentic antiquarian.

--Contact Dick Walton, W7XT

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### FOR SALE:

My Mosley PRO 57b 7-Element 5-Band Yagi is safely off the tower.

I'm having to downsize. Rotator failure. It's a 93 lb HF brute.

Original Manual included. New is \$1700. I'm asking \$500.

It's been up for 25 years, is in excellent condition but I'd recommend cleaning of the elements and trap connections prior to returning to service. Picture attached. Antenna details are at <http://www.mosley-electronics.com/pro.html>.

I've also got the 'in use' and 'pre-removal' SWR curves if interested. K7VK@arrl.net or 549-0027

Vick k7vk

