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Club Station

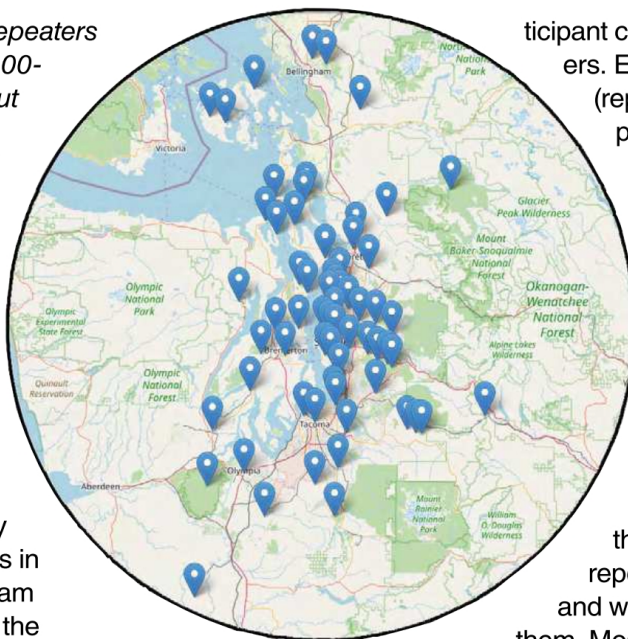# Developing a Repeater-Based Contest

Western Washington is full of repeaters (there are more than 400 in a 100-mile radius of Seattle alone), but many are seldom used. In this month's column, Puget Sound Repeater Group, WW7PSR, Secretary of the Board Quentin Caudron, K7DRQ, shares how this radio group's contest sparked more repeater activity in the area.

With so many repeaters in the western Washington area, WW7PSR wanted to find a way to introduce them to more hams in our group, as well as in other ham groups. That's why we created the casual, repeater-based contest Repeater Roundabout. In November 2022, operators from all over the Puget Sound area took to the airwaves to activate repeaters, learn about local propagation and range, and meet new people.

Contest Details

We started by emailing every club and repeater system we could find in the area and asking them to lend us their repeaters for one weekend. We looked for all repeaters VHF and up (6 meters through 23 centimeters), and all modes, including FM, digital mobile radio, D-STAR, and System Fusion. To avoid confusion with duplicate contacts, we asked for only one repeater from linked systems. The final count for the contest included 113 repeaters that represented 50 clubs across the Puget Sound area.

During the contest, participants had 48 hours to activate as many repeaters as possible. The exchange was the participant's name, a signal report, and a mention of the Repeater Roundabout. We also offered a bonus-point system for clubs that entered at least two repeaters in the event. Their points were doubled if a par-ticipant contacted all of the club's repeat-ers. Each repeater yielded one point (repeat contacts on the same repeater were encouraged but wouldn't provide more points). Scheduled contacts were encouraged, as was partici-pation over the internet with Echolink or AllStarLink.

Above: A map of the repeaters that participated in the 2022 Repeater Roundabout. Most pins repre-sent more than one repeater. The two most distant repeaters are separated by more than 160 miles.

Organizing the Event

There were significant logis-tics involved with gathering more than 100 repeaters from 50 clubs. We needed to ensure that we were explicit about which repeaters were part of the contest and where participants could find them. Most clubs and repeaters were found using RepeaterBook (**www.repeater book.com**) and from viewing documents published by our local frequency coordinator, the Western Washing-ton Amateur Relay Association. Finding contacts at each club and enrolling repeaters and clubs in the con-test took time and effort.

We developed a website — **www.repeaterround about.com** — so contestants could have a list of par-ticipating repeaters and their output frequencies, offsets, and tones. A map displayed where each repeater could be found, and a set of files was provided for program-ming radios with *CHIRP* or another software. We also provide a log sheet and a link to our Discord server.

The website was built using Jekyll and GitHub. It was updated using Python scripts for generating repeater tables, maps, and programming files, and for scoring logs and aggregating statistics. A simple command-line interface allowed users to add new repeaters, update the website, and score logs. All of our code is hosted on GitHub (**www.github.com/qcaudron/repeater_round about**) and provided under an MIT license, free for use.

We also spoke at several club meetings (**www.repeater roundabout.com/slides**) during the month prior to the event. Word spread, and the Repeater Roundabout was mentioned on many nets across the area. Multiple clubs published information about the event on their websites as well. We also arranged an information and Q&A session a few days before the event to help bring people together.

The list of repeaters, map, and radio programming files were all generated programmatically with a Python script that allowed us to add repeaters and clubs to the contest by inputting the repeater information, and all files were published to the website without having to make changes in multiple places.

We also received generous contributions from volunteers. Mike Koss, K7MCK, programmed the Icom IC-705 and AnyTone AT-878UV radios, as well as contributed a user-friendly video on how to program radios with *CHIRP* and a spectrum visualization showing how packed the local VHF and UHF bands are. Additionally, Jeff Jones, AB6MB, provided a spreadsheet with Echolink and AllStarLink details for many of the repeaters.

Contest Results

On the first day of the contest, several operators stayed up until midnight to make as many contacts as possible. Many chose to work their way up the repeater list in pairs, coordinating jumps between repeaters and making contacts as they went. Others scanned participating repeaters and chased activity following other contacts, or monitored a local repeater for an extended period of time and offered contacts to other participants. Scanning the list of repeaters during the contest proved that there was a significant increase in traffic on participating repeaters.

Altogether, 270 hams made more than 1,100 contacts across 94 repeaters. Logs were due 1 week after the contest. We asked that they be submitted in a spreadsheet (as a CSV file) via a simple web form. We scored the logs for each participant, published a leaderboard on the website, and emailed clubs and participants to let them know that results had been published.

In addition to a leaderboard for participating operators, we published a club leaderboard that showed the total number of activations across their repeaters, as well as a repeater leaderboard. The repeater table showed the number of times each repeater was activated, as well as the average signal report received over that repeater. This data could provide clubs with insights on the performance of their repeaters.

Participant Feedback

A few weeks after the contest, we held a debrief and feedback session over Zoom. Participant feedback was overwhelmingly positive, with many sharing that they were able to key up many more repeaters than expected and that they enjoyed discovering new machines and meeting new people. A number of ideas and refinements were proposed for the next iteration, including ways to log more easily and some improvements to scoring that could encourage operators to run a repeater for longer periods, allowing others to make contacts more easily.

In Conclusion

This repeater-based contest was an effective and fun way to introduce operators to local clubs and repeaters. More than that, it was an exciting community event that made connections between people and clubs, challenged operators to try something a little different, and lit up the airwaves across the entire region. We believe this event is transferable anywhere with a multitude of repeaters, and encourage others to follow, or improve upon, our model.

Write for "Club Station"

QST's "Club Station" column is a designated space for clubs to share specific and practical ideas about what has contributed to their success, in the hope that the information will help other clubs grow and thrive. Visit **www.arrl.org/qst-club-station-guidelines-and-profile-form** for more information, including author guidelines and a Club Profile Form (this form is required in order for "Club Station" submissions to be considered complete).