



# ARRL 160 Meter Contest

## 2021 Full Results

By Mark Beckwith N5OT (n5ot@arrl.net)

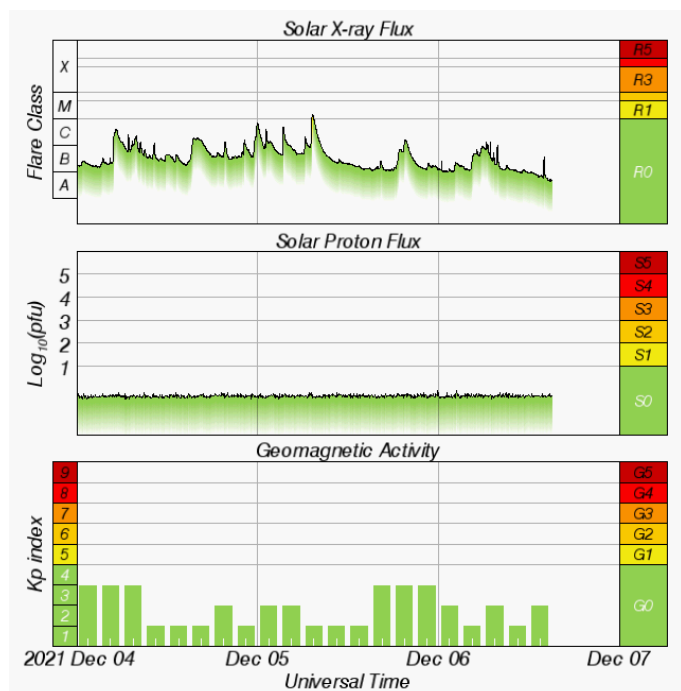
*"The sun giveth and the sun taketh away."*

- KL7SB

It is safe to say the 52<sup>nd</sup> running of the ARRL 160 Meter Contest, held on the first weekend of December 2021, was even more challenging than usual, due to odd propagation. A solar X-Ray event arrived at Planet Earth about 5 hours into the contest, just as the West Coast was coming into darkness.

*"160 sounded like a wet blanket was thrown over the country the first night."* - N6TR

For analysis we turn to Dr. W.S. Beldar of Elayer Consulting, taking an educated guess citing data from the National Oceanic and Atmospheric Administration:



Graph courtesy of NOAA, used with permission

*"You can see the sudden increase in X-ray flux about 0330 on Friday night that continued through the weekend until one final poot at 0450-0500 on Saturday night followed by quiet. X-ray flux primarily produces short-term absorption on the lower bands and probably has some effect on 160 meters. Obviously it wasn't enough to shut everything down but with the western ionosphere still somewhat exposed to the Sun's rays it could have put a damper on the band's usual opening to the west on Friday*

*night after pretty good conditions to the east. Then it just 'messed with' (technical term) the ionosphere until about the same time on Saturday but went back to sleep. The absorption doesn't last very long and the ionosphere will recover in an hour or two, unlike CME-type slobberknockers that screw things up for days. This is just my best guess at what could have been going on."*

Which just goes to show there is never a dull moment in the ARRL 160 Meter Contest.

### Swan Song



The legendary QTH of VY2ZM on Prince Edward Island. (Photo courtesy of K1ZM)

Jeff Briggs, K1ZM, well-known to all serious 160-meter enthusiasts as the author of **DXing on the Edge: The Thrill of 160 Meters**, and who regularly dominates this contest, announced that his operations from his first-rate 160-meter station on Prince Edward Island will be coming to a close.

*"My wife Miriam has asked that we return to the USA after 21 wonderful years in Canada. Prince Edward Island offers friendly honest people, clean air, low crime and reasonable summers although winters are quite harsh living right on the ocean - but it is great for 160m DXing and contests. At the ripe old age of 75, it has been my greatest pleasure to have been able to do this for over 21 years now."*

Jeff is once again the winner this year, dominating the Unassisted Single Operator High Power category by scoring more than 18% above any other. Congratulations Jeff, and thanks for two decades of showing the rest of us how it is done.

## Youth On The Air

Rapidly coming to be known as “YOTA,” the Youth On The Air initiatives established by the International Amateur Radio Union (IARU) have been gaining steam and traction throughout the world. Richard, 9A1TT, has made a station in Croatia available for younger hams who don’t have access to big stations.

Young hams who used in the 160 Meter Contest Richard’s station are Mason, KM4SII; Marty, NN1C; and 12-year-old Ryan, EI8KW.

## Records

Whether at the Section or Division level or in the contest overall, holding and breaking records in the ARRL 160 Meter Contest is a mark of great dedication to the game and to the band. In the United States and Canada this year, Brian, VE3MGY added a new Single Operator Unlimited Low Power record to his long list of 160-meter pursuits. 4 Division records fell, and 44 new highs were set at the Section level. Among the DX stations, there were 19 new records.

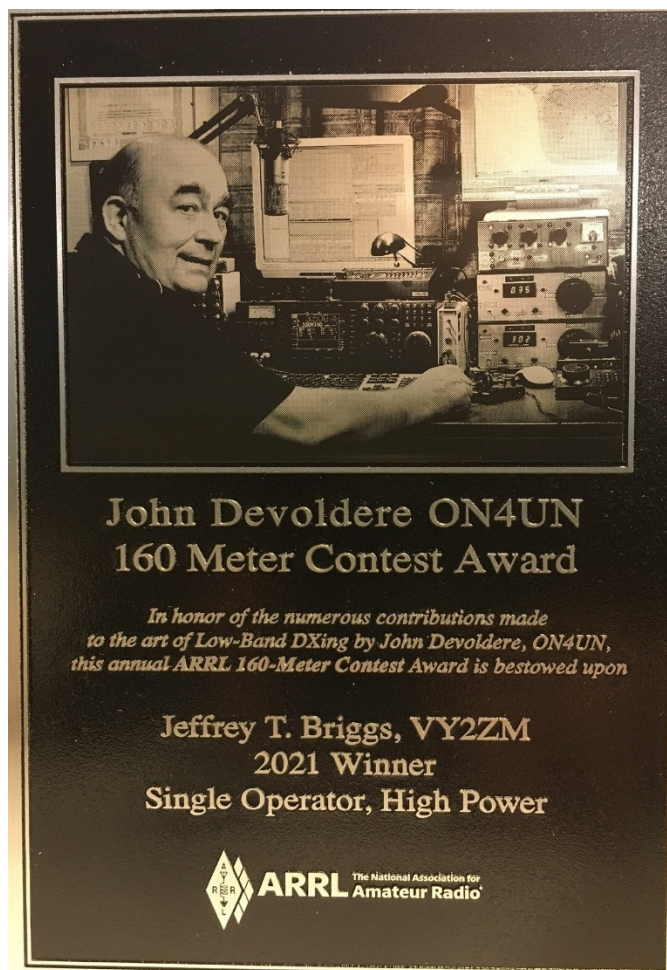
## W/VE Results

### Single Operator



Overall Single Operator winner Jeff Briggs, K1ZM, at the controls of VY2ZM. (Photo courtesy of K1ZM)

As described earlier, Jeff, K1ZM, put in a decisive effort for his final entry from VY2ZM on Prince Edward Island, besting 2<sup>nd</sup> place by over 18%. As the top scorer in the contest in the Single Operator, High Power category, Jeff will receive the John Devoldere, ON4UN, Memorial Plaque, sponsored by the ARRL.



The ON4UN Memorial Plaque, won by Jeff Briggs, VY2ZM [ARRL photo]

The race for 2<sup>nd</sup> place was super-tight, with Eric, NO3M edging out Doug, K1DG, by only two-tenths of one percent. That equates to a difference between silver and bronze smaller than a single QSO. The Olympics has nothing on 160 meters, just saying! Wow.

| W/VE Top Ten<br>Single Operator, High Power |         |
|---|---------|
| VY2ZM                                       | 611,292 |
| NO3M  | 497,940 |
| K1DG  | 496,944 |
| N8OO  | 459,756 |
| WF2W  | 428,250 |
| WB9Z  | 424,347 |
| K2ZW (JO1RUR, op)                           | 405,356 |
| K3ZM  | 384,524 |
| NA8V  | 349,280 |
| N4XD  | 316,564 |



Unassisted Single Operators in the Low Power division were led by long-time 160-meter enthusiast, competitor and record holder Ed, K1EP, at the helm of the 160-meter powerhouse at K1WHS.

*“Thanks to Dave for the use of his station and for being a gracious host. I was sleep deprived entering this contest, especially from operating a lot of 160 the weekend before, and for the all-nighter Wednesday night flying back from PJ2T.”*

160-meter enthusiasts like Ed know sleep is something you do when the band is not open.

| W/VE Top Ten<br>Single Operator, Low Power |         |
|--|---------|
| K1EP                                       | 238,245 |
| KG9X                                       | 218,540 |
| N2YB                                       | 207,264 |
| WB8JUI                                     | 197,776 |
| K8FH                                       | 185,850 |
| WDØT                                       | 183,874 |
| K8NVR                                      | 170,100 |
| WØUO                                       | 159,043 |
| KØTI                                       | 134,148 |
| W1QK                                       | 119,394 |

| W/VE Top Ten<br>Single Operator, QRP |        |
|--------------------------------------|--------|
| W3TS                                 | 69,300 |
| N7IR                                 | 47,376 |
| NK8Q                                 | 36,879 |
| W8PEN                                | 35,776 |
| WU2M                                 | 34,858 |
| K4WY                                 | 28,556 |
| AD4TJ                                | 27,650 |
| KF7MD                                | 27,588 |
| W9QL                                 | 21,836 |
| KN3A                                 | 19,875 |

## Single Operator Unlimited

Last year the Single Operator Unlimited High Power race was close, with John, VE3EJ, yielding to Craig, K9CT, by less than half a percent. This year John dug deep to win the category. As EJ put it:

*“As slow and boring as the 'wee hours' of the second night might be, hanging in there for those few QSOs and potential multipliers can make the difference that might just gain you a place or two in the finishing order.”*



Jim, KW3U, managed 24 hard-earned QSOs with this spectacular, vintage, low power unassisted setup from Pennsylvania. (Photo courtesy of KW3U)

In a Two-Peat Repeat, QRP operators Mike, W3TS, in Pennsylvania, and Gary, N7IR, in Arizona, finished One-Two for the second straight year. To quote fellow QRP entrant Dave, AD4TJ, “QRP on 160 is hard.”



John, VE3EJ, and Lola – a QSO-retrieving Labrador in Ontario - showing what it means to operate with assistance. QSOs with VE3EJ were valid for the GTA multiplier only. (Photo courtesy of VE3EJ)

| <b>W/VE Top Ten<br/>Single Operator Unlimited, High Power</b> |         |
|---|---------|
| VE3EJ   | 546,720 |
| AA1K  | 529,434 |
| VA2WA   | 495,528 |
| AB3CX   | 444,600 |
| W1UE  | 413,058 |
| N1LN  | 403,194 |
| K9CT  | 395,912 |
| K1LT  | 343,026 |
| WØAIH (KØTG, op)  | 338,140 |
| K5NA  | 313,614 |

Second place went to Jon, AA1K, in Delaware, a rare state, but seemingly always on the band.

*“I decided to try the Unlimited category this year. It was fun to watch progress on the online scoreboards.”*

Speaking of online scoreboards, third place in this category went to Victor, VA2WA. A major proponent of real-time score reporting, Victor says enthusiastically,

*“Let’s make contesting a reality show!”*

Hmm. What would we call it? Maybe...

**“Survivor Top Band”?**

**“The Apprentice Multiop”?**

**“Antenna Idol”?**

**“America’s Funniest Busted Spots”?**

**“Briggs Dynasty”?**

**“Keeping up with the Unlimited Ops”?**

Victor complained of tough conditions, including noise and other static that made for poor propagation.

Deserving of mention is fourth-place finisher Mike, AB3CX, methodically climbing the ladder of accomplishment, building a rural station on previously neglected land.

*“What has helped me the most on 160 meters is being inspired by people like Jon, AA1K, and others who put up incredible scores.”*

Nearly all of Mike’s station is built from refurbished second-hand components. Read more about Mike’s new 160-meter antenna later in this article.

The big news in the Single Operator Unlimited Low Power arena is a new all-time record set by Brian,

VE3MGY, who attended the band for nearly 30 hours. Known for his advice,

*“Compete, compete, and compete. The more you do, the better you will get,”*

Brian hammered the competition to arrive on hallowed ground. Not bad for a kid who first listened with an AM clock radio. (But that’s how it starts. – OT).

| <b>W/VE Top Ten<br/>Single Operator Unlimited,<br/>Low Power</b> |         |
|--|---------|
| VE3MGY   | 278,610 |
| NE9U   | 215,476 |
| N3HEE  | 174,561 |
| K8BL   | 167,400 |
| NØUR   | 160,952 |
| NJ3K   | 157,320 |
| KM6Z   | 134,562 |
| NØHJZ  | 130,626 |
| W9XT   | 128,847 |
| NØAT   | 113,475 |



Single Operator Unlimited Low Power contestman Steve, WA8Y, when he learned his receive antenna network would get the job done. (Photo courtesy of WA8Y)

Did we say QRP on 160 is hard? The top ranks of the Single Operator Unlimited QRP group show a spirited contest within a contest. Congratulations to Mike, KA4RRU for maintaining a rate of nearly 30 QSOs per hour for 20 hours, with only 5 watts, to prevail in the top spot of this challenging category.

| W/VE Top Ten<br>Single Operator Unlimited,<br>QRP |        |
|---|--------|
| KA4RRU  | 78,960 |
| KKØU  | 51,480 |
| KEØL  | 43,800 |
| VE3NE   | 32,778 |
| K8ZT  | 24,186 |
| WE9R  | 18,513 |
| KB9RPG  | 9,080  |
| VE3NZ   | 384    |
| K2GMY   | 320    |
| VE6EX   | 192    |

## Multi-Operator

In a clash of the domestic titans, the operators of category favorite W2GD once again took top honors in Multi-Operator High Power from their salt-water-enriched QTH in New Jersey, beating out the formidable K9RS team in Delaware. Spokesman John, W2GD relates,

*“We felt the contest this year was better than the past few years. From the start there was more DX activity, particularly early both evenings.”*

| W/VE Top Ten<br>Multioperator, High Power |         |
|---|---------|
| W2GD                                      | 581,536 |
| K9RS                                      | 389,125 |
| WW2R                                      | 372,204 |
| NØNI                                      | 352,447 |
| KØRF                                      | 347,710 |
| W9SN                                      | 331,108 |
| KR9U                                      | 263,984 |
| NA7TB                                     | 250,357 |
| VE2OJ                                     | 242,130 |
| K1RX                                      | 240,816 |

Third place went to the crew at WW2R, operating the venerable Florida 160-meter contest station put up by Steve, N2CEI.

*“Still some of the most fun a ham can have on two dark, foggy, damp nights in Northern Florida.”*

The competition in Multi-Operator Low Power section was dominated by the Renegade Rovers of Russellville, Alabama. Laura, K4CNY, and Christopher, NV4B, drove the club’s station to victory crediting “proper antennas

and diversity reception.” The husband/wife team of Janice, KA9VVQ, and Bruce, W9FZ, landed the second-place spot, while the husband/wife team of Susan, K1RQ, and Brian, NJ1F, placed third. Note – despite the results, this category is not limited to couples.

| W/VE Top Ten<br>Multioperator, Low Power |         |
|--|---------|
| KT4XA                                    | 105,544 |
| KA9VVQ                                   | 56,980  |
| NJ1F                                     | 30,800  |
| WA5SNL                                   | 25,437  |
| W4TG                                     | 21,540  |
| W6OFM                                    | 11,280  |
| W1FM                                     | 440     |

## DX Results

### Single Operator

If you’re familiar with 160 meters, then you won’t be surprised to learn nearly all the DX leaders are in North American countries. Proximity is big on 160. The top DX Single Operator High Power is no stranger to this podium. Stan, K5GO/ZF9CW, piloted his tropical station on Cayman Brac to a decisive victory among all the entrants. He confesses:

*“160 Meters is special and without question my favorite band overall.”*

Stan outscored Laurent, FM5BH, and Marco, XE2S, who landed second and third respectably. Notably, after that, the top-10 was rounded out by stations on other continents.

| DX Top Ten<br>Single Operator, High Power |         |
|---|---------|
| ZF9CW (ZF5T, op)                          | 211,560 |
| FM5BH                                     | 27,328  |
| XE2S                                      | 25,074  |
| EI7KD                                     | 21,624  |
| GM6XX (GM4ZUK, op)                        | 12,792  |
| OM2XW                                     | 7,280   |
| LY7M                                      | 4,736   |
| ON4WW                                     | 4,690   |
| JA5DQH                                    | 4,686   |
| OH1XX                                     | 4,020   |



The top four of the Low Power Single Operators was split evenly between Cuba and Dominican Republic, with Rey, CO2RQ, outscoring all challengers.

| DX Top Ten<br>Single Operator, Low Power |        |
|--|--------|
| CO2RQ                                    | 44,856 |
| HI3AA                                    | 29,412 |
| CO2JD                                    | 11,004 |
| HI8A                                     | 2,184  |
| DL5CL                                    | 1,794  |
| F5PLC                                    | 680    |
| OLØA (OK1CZ, op)                         | 672    |
| JE1SPY                                   | 660    |
| PAØTCA                                   | 608    |
| XE1AY                                    | 396    |

Second place finisher Ez, HI3AA, who operated his DX station via remote from his home in Florida, reported it was plenty of fun, but

*“...the second night was extremely noisy. Perfect excuse for beers.”*

Long time competitors Juan, CO2JD, and Rafael, HI8A, landed the third and fourth places. As with the High-Power group above, the next spots were operators from Europe and Asia.

Caribbean specialist Brian, ND3F, activated C6AQQ in the Bahamas to take all the spoils in the DX Single Operator Unassisted QRP division, completing 43 hard-earned QSOs with 26 different states/provinces. That is a major accomplishment with only 5 watts on 160 meters!

| DX Top Ten<br>Single Operator, QRP |       |
|------------------------------------|-------|
| C6AQQ (ND3F, op)                   | 2,236 |
| CO6EC                              | 810   |
| EA5Y                               | 8     |
| YO4BEW                             | 0     |

## Single Operator Unlimited

F1AKK ran up the highest score of all the DX Single Operator Unlimited High Power competitors from the TM6M contest station in Northwest France. Oli managed 512 QSOs in 65 states/provinces - no small feat from across the Atlantic. Oli was in good company with the

ubiquitous Laci, OM2VL finishing second, and Nick, G4FAL, running G6XX to place third on Laci's heels.

*“G6XX is an original callsign from the Transatlantic Tests of the 1920s and was heard all over North America in 1923. Thanks to everyone who managed to pull G6XX out of the noise.”*



EA7X was credited by more than one domestic competitor as their only QSO with Europe. Thanks Jose! (Photo courtesy of EA7X)

| DX Top Ten<br>Single Operator Unlimited, High Power |        |
|---|--------|
| TM6M (F1AKK, op)                                    | 65,910 |
| OM2VL   | 35,984 |
| G6XX (G4FAL, op)                                    | 33,072 |
| EA8/EA1DAV  | 32,886 |
| EA7X  | 24,190 |
| OK1CF   | 18,330 |
| IQ2CJ (IK2PFL, op)                                  | 16,284 |
| GW6XX   | 14,256 |
| M3A   | 12,948 |
| G4AMT   | 10,528 |

Like the High Power Unlimited operators above, the Low Power Unlimited Single Ops are a dedicated bunch – especially the ones outside of North America. Alec,

SP2EWQ, led the pack with nearly 100 QSOs all the way from Poland. Second was Humberto, XE1HG, operating from Mexico.

| <b>DX Top Ten<br/>Single Operator Unlimited, Low Power</b> |       |
|--|-------|
| SP2EWQ   | 4,176 |
| XE1HG  | 3,564 |
| HA8BE  | 920   |
| LZ2ZG  | 828   |
| ED1R (DH1TW, op)   | 768   |
| GW4W (GW4EVX, op)  | 646   |
| G4BRK  | 510   |
| YV4ABR   | 374   |
| OZ1AAR   | 288   |
| DJ2SX  | 162   |

## Multi-Operator

Here would be a clash of the DX titans, bringing together a couple of potent and experienced multi-operator groups to battle for top honors in the DX Multi-Operator competition. Long time Caribbean blowtorch PJ2T headed by Geoff, WØCG, succumbed to the C6AGU team headed by George, AA7JV. The PJ2T team was partly on-site in Curacao and partly remote, while the C6AGU team members were all present in the Bahamas.

George is eager to explain that this expedition was a proof-of-concept for his new Radio in a Box (RIB) DXpedition device. Interested readers can read more about that at the end of this article.

There were only nine entries in this category, so all of them can be found in the top-10 box.

| <b>DX Top Ten<br/>Multioperator, High Power</b> |         |
|---|---------|
| C6AGU   | 203,958 |
| PJ2T  | 137,760 |
| LU8DPM  | 29,960  |
| OL1A  | 13,520  |
| EW5A  | 9,842   |
| JA3YBK  | 8,568   |
| LZ5R  | 6,732   |
| OHØZ  | 1,496   |
| OK6O  | 1,364   |

Likewise, for the DX Multi-Operator Low Power group, there were only two entrants. Mark, V31MA on the coast

of Belize managed 129 QSOs in 47 states/provinces, while the team at JF1AMX found an opening for 14 low-power QSOs in as many states/provinces. That is a lot of really careful listening on the part of many operators!

A sincere and heart-felt “thank you” to all the operators outside the USA and Canada who braved the challenges of 160 meters to get on and make QSOs. It has made this event successful for 52 years running.

## Club Competition

Club competition is always energetic, and the ARRL 160 Meter Contest has a history of enthusiastic participation at the club level. For 2021, the Potomac Valley Radio Club mustered the most participation and the highest aggregate score. The Society of Midwest Contesters did the same in the Medium size category, while the Iowa DX and Contest Club was crowned king of the Local clubs.



Rich, WO2Y, contributed 12,105 points to the Frankford Radio Club with this clean setup. (Photo courtesy of WO2Y)

| <b>Club</b>                   | <b>Score</b> | <b>Entries</b> |
|-------------------------------|--------------|----------------|
| <b>Unlimited</b>              |              |                |
| Potomac Valley Radio Club     | 8,288,415    | 106            |
| Frankford Radio Club          | 7,308,895    | 79             |
| Yankee Clipper Contest Club   | 4,760,206    | 67             |
| Society of Midwest Contesters | 4,547,071    | 62             |
| Minnesota Wireless Assn       | 3,908,325    | 71             |
|                               |              |                |

|  |           |    |
|--|-----------|----|
| <b>Medium</b>                                    |           |    |
| Contest Club Ontario                             | 3,275,182 | 38 |
| Mad River Radio Club                             | 1,898,114 | 19 |
| South East Contest Club                          | 1,502,468 | 21 |
| Tennessee Contest Group                          | 1,361,503 | 20 |
| North Coast Contesters                           | 1,204,991 | 11 |
| Central Texas DX and Contest Club                | 1,112,931 | 16 |
| Northern California Contest Club                 | 950,521   | 33 |
| Grand Mesa Contesters of Colorado                | 849,001   | 13 |
| Arizona Outlaws Contest Club                     | 824,631   | 19 |
| Florida Contest Group                            | 745,848   | 18 |
| Hudson Valley Contesters and DXers               | 638,730   | 12 |
| Niagara Frontier Radiosport                      | 571,451   | 10 |
| Alabama Contest Group                            | 566,453   | 9  |
| DFW Contest Group                                | 563,027   | 11 |
| Rochester (NY) DX Assn                           | 490,340   | 10 |
| Southern California Contest Club                 | 475,084   | 15 |
| Deep Dixie Contest Club                          | 442,695   | 6  |
| Big Sky Contesters                               | 424,646   | 5  |
| Maritime Contest Club                            | 378,267   | 6  |
| Kentucky Contest Group                           | 326,526   | 10 |
| Willamette Valley DX Club                        | 309,460   | 9  |
| Carolina DX Association                          | 290,403   | 8  |
| Bay Area DXers                                   | 244,215   | 4  |
| Swamp Fox Contest Group                          | 236,162   | 10 |
| North Texas Contest Club                         | 230,946   | 3  |
| Northeast Maryland Amateur Radio Contest Society | 229,581   | 8  |
| Texas DX Society                                 | 179,107   | 4  |
| Orca DX and Contest Club                         | 175,907   | 11 |
| Kansas City Contest Club                         | 146,119   | 5  |
| Driftless Zone Contesters                        | 127,106   | 3  |
| Arkansas DX Assn                                 | 113,708   | 4  |
| Western Washington DX Club                       | 113,026   | 5  |
| Heartland DX Association                         | 77,059    | 5  |
| 599 DX Association                               | 73,451    | 3  |
| Order of Boiled Owls of New York                 | 61,355    | 3  |
|  |           |    |
| <b>Local</b>                                     |           |    |
| Iowa DX and Contest Club                         | 441,468   | 4  |
| CTRI Contest Group                               | 291,179   | 6  |

|                                 |         |   |
|---------------------------------|---------|---|
| St Louis ARC                    | 236,739 | 3 |
| Not Quite Workable Contest Club | 214,452 | 4 |
| Providence Radio Assn           | 115,196 | 4 |
| Redwood Empire DX Assn          | 108,018 | 3 |
| Bristol (TN) ARC                | 84,651  | 3 |

## Honorable Mentions

Honorable mention goes to N8OO for working more DX entities than any other station in the contest including the Unlimited Single Operators and the multiops.

Top country totals:

| Station | DX Entities | Category            |
|---------|-------------|---------------------|
| N8OO    | 57          | Single Op           |
| W2GD    | 55          | Multiop             |
| VY2ZM   | 53          | Single Op           |
| AA1K    | 53          | Single Op Unlimited |
| VE3EJ   | 53          | Single Op Unlimited |

Honorable mention for this year's best antenna description goes to AJ, AJ1AJ:

*"Clearly I need to do something to bring my 160-meter signal up. I'll try to get a 160-meter inverted L but that's far from certain. If I do need to load my 80-meter vertical with my loading bucket I'll at least be up 7db because I can increase power from 100 watts to 500 watts. I probably won't be able to bring the feedpoint enclosure inside to build a matching network, but it strikes me that I should at least be able to bring the real resistance up by doing a crude beta match in the field and reduce the feedline losses from the mismatched antenna, although at this frequency I don't know how much it matters."*

## War Stories and Tall Tales

### C6AGU

There is a story behind this effort that readers may appreciate.

*"We operated as C6AGU from Wood Cay, (Schooner Cays, near Eleuthera) in a DXpedition-like mode, using what is called the RIB (Radio In a Box). The RIB is a new DXpedition device that was*



*designed to overcome the USFWS (and other environmental protection agencies') objections to DXpeditions camping on protected islands, etc. It is a complete station in a water-tight enclosure that is put on the island but is operated remotely from a boat anchored nearby (1 mile in this case). This way, there are no people on the island, both the birds and the Amateur Radio operators are happy.*

*Besides using the contest as a way to proof-test the equipment, we wanted to demonstrate that operating a RIB remotely does not detract from operational efficiency. There was a write up on the RIB in QST for January 2022 by W3UR. Here are some photos."*



Two views of the C6AGU "Radio in a Box" used to win the DX Multi-Operator High Power category. (Photos courtesy of AA7JV)

## ZF9CW

*"There are times when one band or another may be the favorite due to conditions at the time but 160 meters is special, and without question my favorite band overall.*

*The challenges of digging out weak signals and making antennas that will help you do it is the attraction. When trying to explain ham radio to ones who aren't familiar with the hobby, I have always talked about the band of frequencies we have just above the AM broadcast band and tell them I have made a two-way contact with India on a frequency just above their vehicle's radio dial with a relatively small antenna and transmitter power that is 3% of a big AM radio station.*



The operating position at ZF9CW where Stan won DX Single Operator overall. (Photo courtesy of K5GO)



The view out to sea from ZF9CW. If you look closely you can see it is midwinter back in the USA. (Photo courtesy of K5GO)

*I am fortunate to have a station on Cayman Brac with my transmit antenna only 75 feet from the salt water. The antenna is a shunt fed 60-foot 25G tower with a couple of small tribanders. My biggest thrill was being called by a well-known W4 who was only about 579. He told me he had turned his power down to 1 watt when he gave me my report!"*





ZF9CW secret weapon: a broadband birdcage-fed vertical radiator on 160 meters. (Photo courtesy of K5GO)



AB3CX's 160-meter vertical being assembled and installed by Ray, W2RE. Photo courtesy of AB3CX]

## AB3CX

*"What has helped me the most on 160 meters is being inspired by people like Jon, AA1K and others who put up incredible scores. I have no idea how anyone works so many DXCC entities on 160 meters! I'm only up to about 150 now.*

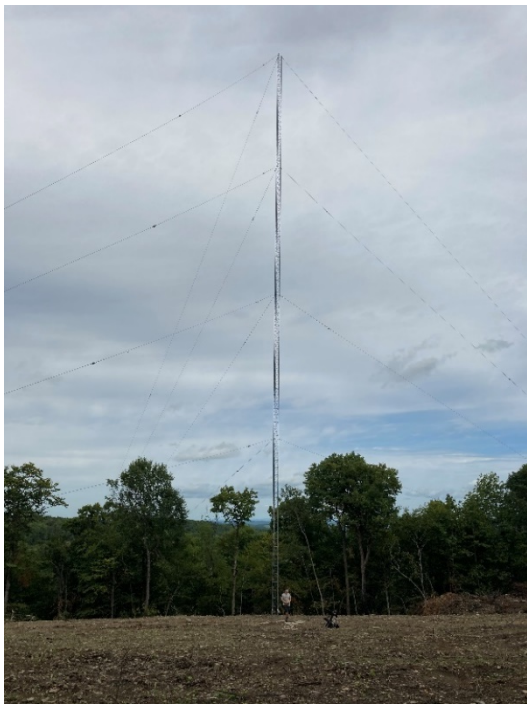
*My ongoing project is a hilltop contest station on 30 acres of previously neglected pasture land, about 12 miles from my home. It is not remoted, so that limits my casual operating.*

*A few years ago, I had marginal antenna systems for 160 meters. When I put up my contest station, my first antenna was a simple vertical wire with a single elevated radial. A couple of years after that I was able to put up an inverted vee with the apex at about 115 feet on a tower, but again I wasn't overly confident in the way that was working in contests. It seemed like I was always the last guy to get through the pileup!*

*Then, two years ago, I undertook a major project. We cleared a circle at the top of a hill on my property about 100 to 120 feet in diameter and planted a Rohn 25G tower in the center. It has an insulated base using three pieces of machined fiberglass, and four levels of guy wires insulated from the tower. The thing changed my whole outlook on 160 meters! It has about 80 radials on the ground now, varying from 100 to almost 150 feet in length. It will load up anywhere on 160 meters without using a tuner and take full power.*

### **Soapbox!**

Don't miss the compilation of comments - see [contests.arrl.org/160m/soaps/2021/](https://contests.arrl.org/160m/soaps/2021/) for some great stories and photos.



The finished antenna at AB3CX. (Photo courtesy of AB3CX)

*The feedline to the shack is some kind of older 5/8" Heliax for which we had to make homebrew connectors.*

*To receive, I have five different beverage antennas to choose from with a remote switching system. Now it's always a lot of fun in any of the contests to get as many multipliers as I can on 160.*

*In the photos, the guy on the tower is Ray, W2RE, who gave me my first chance to operate at a superstation in his days before Remote Ham Radio."*



When not operating on 160 meters, AB3CX enjoys restoring and displaying old radios. (Photo courtesy of AB3CX)

## Until Next Time

Well, sooner or later these great 160 stories are going to slow down when the sunspots increase in number and people focus on the other bands again. I'm pretty sure if it was just up to me, I might say, "Long live 160 meters forever!" or something like that, but it is not up to me. Until then, keep those matching network bearings oiled and I'll see you the first weekend in December!

**The 2022 ARRL 160-Meter Contest begins 2200 UTC December 2 and runs through 1559 UTC December 4. Log submissions are due by 1559 UTC December 11, 2022**



| USA/Canada Regional Leaders   |         |  |   |         |  |  |         |  |   |         |  |  |         |
|---|---------|--|---|---------|--|--|---------|--|---|---------|--|--|---------|
| West Coast Region   |         |  | Midwest Region  |         |  | Central Region   |         |  | Southeast Region                            |         |  | Northeast Region   |         |
| (Pacific, Northwestern and Southwestern Divisions; Alberta, British Columbia and NT Sections) |         |  | (Dakota, Midwest, Rocky Mountain and West Gulf Divisions; Manitoba and Saskatchewan Sections) |         |  | (Central and Great Lakes Divisions; Ontario East, Ontario North, Ontario South, and Greater Toronto Area Sections) |         |  | (Delta, Roanoke and Southeastern Divisions) |         |  | (New England, Hudson and Atlantic Divisions; Maritime and Quebec Sections) |         |
| Single Operator, High Power   |         |  |   |         |  |  |         |  |   |         |  |  |         |
| WJ9B  | 171,450 |  | NØTT  | 272,475 |  | WB9Z   | 424,347 |  | N8OO  | 459,756 |  | VY2ZM  | 611,292 |
| W8KA  | 164,070 |  | KØIDX   | 259,570 |  | NA8V   | 349,280 |  | K3ZM  | 384,524 |  | NO3M   | 497,940 |
| VE6BBP  | 161,616 |  | KØTT  | 244,831 |  | VE3VN  | 280,668 |  | N4XD  | 316,564 |  | K1DG   | 496,944 |
| KG7CW   | 159,300 |  | WØSD<br>(WØDB, op)  | 243,648 |  | VA3AR  | 173,185 |  | NP2X<br>(K9VV, op)                          | 281,673 |  | WF2W   | 428,250 |
| N9RV  | 143,143 |  | WØPR  | 193,060 |  | K9BGL  | 166,176 |  | KP2M<br>(KT3Y, op)                          | 232,814 |  | K2ZW<br>(JO1RUR, op)   | 405,356 |
| Single Operator, Low Power  |         |  |   |         |  |  |         |  |   |         |  |  |         |
| N6RK  | 77,539  |  | WDØT  | 183,874 |  | KG9X   | 218,540 |  | WA1FCN                                      | 98,800  |  | K1EP   | 238,245 |
| K6EI  | 68,992  |  | WØUO  | 159,043 |  | WB8JUI   | 197,776 |  | K5LG  | 96,300  |  | N2YB   | 207,264 |
| VE7SL   | 47,196  |  | KØTI  | 134,148 |  | K8FH   | 185,850 |  | K7SV  | 72,940  |  | W1QK   | 119,394 |
| W7TMT   | 36,584  |  | NØPB  | 93,351  |  | K8NVR  | 170,100 |  | N4IJ  | 70,626  |  | N2EM   | 93,786  |
| W7XZ  | 28,556  |  | NGØC  | 87,600  |  | WD8DSB   | 117,760 |  | AC4G  | 66,450  |  | K1VUT  | 83,325  |
| Single Operator, QRP  |         |  |   |         |  |  |         |  |   |         |  |  |         |
| N7IR  | 47,376  |  | KF7MD   | 27,588  |  | W8PEN  | 35,776  |  | K4WY  | 28,556  |  | W3TS   | 69,300  |
| W6MZ  | 4,620   |  | KØQEI   | 7,912   |  | W9QL   | 21,836  |  | AD4TJ                                       | 27,650  |  | NK8Q   | 36,879  |
| VE7VV   | 3,942   |  | KEØTT   | 5,888   |  | WB8DC  | 8,600   |  | K4FT  | 18,144  |  | WU2M   | 34,858  |
| AC6YY   | 1,404   |  | WØYJT   | 5,495   |  | AB8DF  | 6,912   |  | K2EKM                                       | 1,836   |  | KN3A   | 19,875  |
| N7VS  | 528     |  | WC7S  | 5,066   |  | WB9AYW   | 6,290   |  | K4PQC,<br>WR4I (tie)                        | 1,533   |  | NY1E   | 14,664  |
| Single Operator Unlimited, High Power   |         |  |   |         |  |  |         |  |   |         |  |  |         |
| VE6WZ   | 182,263 |  | K5NA  | 313,614 |  | VE3EJ  | 546,720 |  | N1LN  | 403,194 |  | AA1K   | 529,434 |
| W6DR  | 96,624  |  | KVØQ  | 216,746 |  | K9CT   | 395,912 |  | K4XL  | 279,756 |  | VA2WA  | 495,528 |
| K9YC  | 93,525  |  | K5PI  | 175,008 |  | K1LT   | 343,026 |  | K2KW  | 246,753 |  | AB3CX  | 444,600 |
| K7QA  | 70,455  |  | NØAV  | 173,280 |  | WØAIH<br>(KØTG, op)  | 338,140 |  | AD4EB                                       | 243,837 |  | W1UE   | 413,058 |
| N6WM  | 67,147  |  | K1KD  | 168,340 |  | W8MJ   | 308,085 |  | K2AV  | 238,455 |  | W1SJ   | 303,614 |

| Single Operator Unlimited, Low Power          |         |  |        |         |  |        |         |  |        |         |  |       |         |
|---|---------|--|--------|---------|--|--------|---------|--|--------|---------|--|-------|---------|
| N3RC  | 21,533  |  | NØUR   | 160,952 |  | VE3MGY | 278,610 |  | N3HEE  | 174,561 |  | NJ3K  | 157,320 |
| K6KZM   | 16,165  |  | NØHJZ  | 130,626 |  | NE9U   | 215,476 |  | N4ZZ   | 105,032 |  | N2CJ  | 91,798  |
| VE7XT   | 5,772   |  | NØAT   | 113,475 |  | K8BL   | 167,400 |  | N3ZL   | 95,265  |  | K2QO  | 87,246  |
| W6SIY   | 5,624   |  | KØRC   | 110,208 |  | KM6Z   | 134,562 |  | K4EA   | 84,728  |  | K2ZR  | 70,840  |
| VE7CV   | 3,886   |  | WY7M   | 71,775  |  | W9XT   | 128,847 |  | N4GG   | 67,824  |  | VE9ML | 70,434  |
| Single Operator Unlimited, QRP                |         |  |        |         |  |        |         |  |        |         |  |       |         |
| K2GMY   | 320     |  | KKØU   | 51,480  |  | VE3NE  | 32,778  |  | KA4RRU | 78,960  |  |       |         |
| VE6EX   | 192     |  |        |         |  | K8ZT   | 24,186  |  | KEØL   | 43,800  |  |       |         |
|   |         |  |        |         |  | WE9R   | 18,513  |  |        |         |  |       |         |
|   |         |  |        |         |  | KB9RPG | 9,080   |  |        |         |  |       |         |
|   |         |  |        |         |  | VE3NZ  | 384     |  |        |         |  |       |         |
| Multioperator, Single Transmitter, High Power |         |  |        |         |  |        |         |  |        |         |  |       |         |
| NA7TB   | 250,357 |  | NØNI   | 352,447 |  | KR9U   | 263,984 |  | WW2R   | 372,204 |  | W2GD  | 581,536 |
| NX6T  | 200,925 |  | KØRF   | 347,710 |  | W8PR   | 235,532 |  | W9SN   | 331,108 |  | K9RS  | 389,125 |
| WD6T  | 161,076 |  | K5CM   | 213,696 |  | VE3FAS | 53,946  |  | KC4D   | 224,829 |  | VE2OJ | 242,130 |
| KØSN  | 152,511 |  | NØIS   | 212,505 |  | VA3JL  | 47,058  |  | N4HB   | 210,870 |  | K1RX  | 240,816 |
| K7RC  | 39,060  |  |        |         |  |        |         |  | W4RN   | 117,130 |  | W1DX  | 195,510 |
| Multioperator, Single Transmitter, Low Power  |         |  |        |         |  |        |         |  |        |         |  |       |         |
| W6OFM   | 11,280  |  | WA5SNL | 25,437  |  | KA9VVQ | 56,980  |  | KT4XA  | 105,544 |  | NJ1F  | 30,800  |
| W1FM  | 440     |  |        |         |  |        |         |  | W4TG   | 21,540  |  |       |         |

| Continental Winners                   |            |        |                     |                     |         |               |
|---------------------------------------|------------|--------|---------------------|---------------------|---------|---------------|
|                                       | Africa     | Asia   | Europe              | North America       | Oceania | South America |
| Single Operator, High Power           |            | JA5DQH | EI7KD               | ZF9CW<br>(ZF5T, op) | VK2GR   | LU5YF         |
| Single Operator, Low Power            |            | JE1SPY | DL5CL               | CO2RQ               |         | HK6J          |
| Single Operator Unlimited, High Power | EA8/EA1DAV | JE1CKA | EA5Y                | C6AQQ<br>(NE3F, op) |         | CX6VM         |
| Single Operator Unlimited, Low Power  |            | JH1FSF | TM6M<br>(F1AKK, op) | XE1HG               |         | YV4ABR        |
| Multioperator, High Power             |            | JA3YBK | SP2EWQ              | C6AGU               |         | PJ2T          |
| Multioperator, Low Power              |            | JF1AMX | OL1A                | V31MA               |         |               |

## New Records set in 2021

| Operating Category Key<br>SO = Single Operator; SOU = Single Operator Unlimited; MS =<br>Multioperator, Single Transmitter<br>HP = High Power; LP = Low Power; QRP = <5W |        |        |        |
|--|--------|--------|--------|
| Overall  |        |        |        |
|  | VE3MGY | SOULP  |        |
| Division   |        |        |        |
| Atlantic   | AA1K   | SOUHP  |        |
| Canada   | VE3MGY | SOULP  |        |
| Roanoke  | KA4RRU | SOUQRP |        |
| Canada   | VE3NE  | SOUQRP |        |
| Section (by call area)   |        |        |        |
| Canada   | AB     | VE6EX  | SOUQRP |
| Canada   | GTA    | VE3EJ  | SOUHP  |
| Canada   | GTA    | VE3NE  | SOUQRP |
| Canada   | ONE    | VE3VN  | SOHP   |
| Canada   | ONN    | VA3JL  | MSHP   |
| Canada   | ONS    | VE3MGY | SOULP  |
| Canada   | PE     | VY2WW  | SOULP  |
| Canada   | NL     | VO1HP  | SOUHP  |
| U.S. Call Area Ø   | IA     | AKØM   | SOULP  |
| U.S. Call Area Ø   | MO     | KKØU   | SOUQRP |
| U.S. Call Area Ø   | NE     | KVØI   | SOULP  |
| U.S. Call Area Ø   | ND     | KØIDX  | SOHP   |
| U.S. Call Area Ø   | SD     | WDØT   | SOLP   |
| U.S. Call Area 1   | EMA    | W1UE   | SOUHP  |
| U.S. Call Area 1   | ME     | K1EP   | SOLP   |
| U.S. Call Area 2   | ENY    | WU2M   | SOQRP  |
| U.S. Call Area 2   | NLI    | KA2D   | SOULP  |
| U.S. Call Area 2   | NNJ    | N2CJ   | SOULP  |
| U.S. Call Area 2   | WNY    | WF2W   | SOHP   |
| U.S. Call Area 2   | WNY    | AB3CX  | SOUHP  |
| U.S. Call Area 3   | DE     | AA1K   | SOUHP  |
| U.S. Call Area 3   | WPA    | NJ3K   | SOULP  |
| U.S. Call Area 4   | AL     | KT4XA  | MSLP   |
| U.S. Call Area 4   | NC     | N1LN   | SOUHP  |
| U.S. Call Area 4   | NFL    | K3TW   | SOULP  |
| U.S. Call Area 4   | PR     | WP3A   | SOULP  |
| U.S. Call Area 4   | SFL    | N4BP   | SOUHP  |
| U.S. Call Area 4   | TN     | W9SN   | MSHP   |

|                  |     |                         |        |
|------------------|-----|-------------------------|--------|
| U.S. Call Area 4 | VI  | KP2DX<br>(KP2BH,<br>op) | SOULP  |
| U.S. Call Area 4 | VA  | KA4RRU                  | SOUQRP |
| U.S. Call Area 5 | STX | K5LJ                    | SOULP  |
| U.S. Call Area 5 | WTX | K5TDA                   | SOUHP  |
| U.S. Call Area 6 | SV  | W6OFM                   | MSLP   |
| U.S. Call Area 6 | SDG | NX6T                    | MSHP   |
| U.S. Call Area 6 | SDG | W1FM                    | MSLP   |
| U.S. Call Area 6 | SF  | N3RC                    | SOULP  |
|                  |     |                         |        |
| U.S. Call Area 6 | SCV | K6KZM                   | SOULP  |
| U.S. Call Area 7 | EWA | K6EI                    | SOLP   |
| U.S. Call Area 7 | WY  | WY7M                    | SOULP  |
| U.S. Call Area 8 | OH  | K1LT                    | SOUHP  |