TALES FROM THE SWAMP

May 2021
Editor: Kevan Nason, N4XL

A Special Edition Filled with Contest Tips

Thank you to our current group leadership.

President – Ed, K3DNE
Vice President - Dave, WN4AFP
Treasurer – Phil, NI7R
Secretary – Ed, WB4HRL

From the Reflector:

- Scott, N2OG, sent me some comments directly in an email. He wrote: "I have been very busy collecting POTA activations this last week. These operators are low power and can be a challenge to make a contact with them. It's an exercise is learning how to use my new radio filters. Band conditions during the day have been poor so filtering is especially useful. The FTDX 10 has a pretty good CW decoder and It is easy to use. N1MM recognizes when I change modes and correctly logged many CW contacts during NEQP. We will see how accurate it is!! All this CW got me enthused about CW so I signed up for the CWops class for September. "
- The SFCG was made aware the FCC updated its RF Exposure rules effective May 3rd, 2021.
- Dave, WN4AFP, shared a link to the N4N M/2 Rover effort in the GAQP. KX4MZ, N5ZZ, W5JR, and WK4U operated 20 hours for 335,829 claimed points. What a great effort.
- Bill, N4IQ, mentioned N1MM has a new Spectrum Window center feature.
- Bill, N4IQ, also posted a picture of his 2020 Clean Sweep mug vrom the November 2020 CW Sweepstakes contest. Way to go, Bill!

- Kevan, N4XL, mentioned he wants contesters to start using "V V V" when sending something other than an exchange during a contest QSO. He said that because Dave, AFP, sent him a personal message during the MIQP. Kevan couldn't wrap his head around someone sending him a CW message starting with "GL" (for Good Luck) in response to his CQ. Kevan couldn't figure out why a GL station would be calling him. He didn't figure out until minutes later what Dave was trying to do.
- Ed, K3DNE, asked for club input as to what folks would like for a topic in a future Zoom meeting. Only a couple anyone answered him. What's up with that people? John, K4QQG, and Kevan, N4XL, said they'd like to hear something about RTTY. Scott, N2OG, said he'd listen to anything, but silence was the overwhelming response. Since the membership showed little interest, it seems Ed has dropped the idea of trying to find a presentation.
- Dave, WN4AFP, mostly solved his difficulties with N1MM's voice keyer. He was able to use it to his advantage during the FQP.
- Ed, K3DNE, took First Place USA in the 2020 New England QSO Party. Fantastic!
- Scott, N2OG, received feedback after asking the group about his Inverted-V setup.
- Gary, AF7T, is taking over as WW4SF QSL manager for our group. Dave, NJ4F, has been carrying the load for many years. Thank you both for your contribution to the SFCG!
- There was interesting chatter about the 2020 CQWW CW Log Checking Report. It was good to see members willing to share their results – both good and bad. That's how to share learning experiences.
- Bill, N4IQ, shared his Telnet Macros. He uses them in N1MM with the NC7J Cluster (and other AR type Clusters) to receive spots originating only from stations in the Southeast United States. We are more likely to find spots from our own geographic location to be useful.

Contest Tips:

K2YWE Contesting Best Practices	
Best Practice	**Rationale**
- Enable and use the Bandmap feature of your logging software even if you are not Assisted. - The Bandmap allows you to enter stations yourself on the fly.	- If you need to check back later, the Bandmap will have the call sign and frequency noted for you - You'll waste less S&P time on waiting for station ID or on calling Dupes.
- In general, use K3ZO's "Rule of TWICE." - Modify "TWICE" to suit your station capabilities and contest circumstances: - If you can't get a station after calling him TWICE, move on. - If the station doesn't ID after transmitting TWICE, move on.	- Your time can be better spent increasing your rate. - A multiplier can quickly become worth less than the QSOs lost trying. - You can put his frequency into the Bandmap to check back later.

K2YWE Contesting Best Practices	
Best Practice	**Rationale**
• Do not waste time repeatedly calling DX stations that have moderate signals when the band is otherwise quiet from their part of the world. • This is likely to happen when big guns are just "opening the band" or "keeping it open." • Try another time.	• Many stations running high power will be heard when propagation is poor, but will not hear you despite elaborate antennas. • Remember that 1.5kW vs. 100W is roughly the difference between S-7 and S-3. These are the guys that are S9 or more under better conditions.
• When the call sign of a responder is questionable, send a complete exchange using the questionable call. Then correct it during his exchange transmission. • You can use SCP to help guess incomplete calls on the first round. • Make sure you have it right before you let him go.	• Nearly all contest stations will correct you on their transmission, good Ops without missing a beat. • It saves the time of an extra exchange devoted only to getting the call sign right. • You can revert to "normal" fill-in means if this practice fails.

Tips from the EI8IC website

- **Pre-Contest Checklist**
    - Set the computer clock to the correct date and exact GMT time.
    - Caps Lock and Num Lock set as required.
    - Configure Logging Program for this contest.
    - Load the CW or Voice Memories, and listen to them through the rig.
    - Prepare the Keyboard Overlay sheet.
    - Simulate five qsos on computer, then erase log file.
    - Check computer is on same band and mode as transceiver.
    - Print out full Contest Rules and re-read them.
    - Print out latest Propagation Forecast for the bands needed.
    - Print out Contest Band plans from EI8IC's pages.
    - Print out Announced Operations from NG3K's pages.
    - Print out your Logging Program command-set.
    - Get an EI8IC Zone Map, for contests based on zones.
    - Prepare Floppy Disc or SmartDrive for log dumps. *(Editor: Yeah, this is old. But virtually every point from EI8IC's web pages, including this list, are still applicable. Even if we don't use floppy discs anymore It's still a good practice to have a backup of your computer files.)*
    - Visual check of all antennas and cabling.
    - Check rotators are calibrated and functioning.
    - Test station on all bands, noting for any RFI.
    - Check the position of all knobs and switches, especially:
        - Attenuator

- ▪ Noise Blanker
- ▪ RIT
- ▪ Vox Delay
- ▪ Split Frequency
- ▪ Upper/Lower Sideband
  - o Tape card behind linear amplifier and ATU controls, and mark all tuning positions in coloured text, using one colour per band.
  - o Un-plug the shack telephone, and turn on answering machine.
  - o Gather together all contest necessities:
    - ▪ Notepad and pencils
    - ▪ Spare headphones and microphone
    - ▪ Eyeglasses
    - ▪ Throat Lozenges or Cough-Syrup
    - ▪ Damp cloth and towel for accidents
    - ▪ Food and Drink
    - ▪ Clean clothes for mid-contest shower
    - ▪ Torch and spare operating-light bulbs
    - ▪ Box of fuses and test-meter
  - o Check location of all backup-equipment and cables.
  - o Review past contest logs and magazine results.
  - o Plan strategy, and prepare band change and off-time plan.
  - o Feed the cat.
- **How to Search and Pounce** *(Editor: This is a compilation of a group of emails collected by KE1FO in response to a question by WZ2T about the best ways to Search and Pounce. These are only excerpts and it is recommended you visit the EI8IC website for the full version)*
  - o <u>From ND3F</u>
    - ▪ Even if you don't work a station on the first or second or third call, mark them in the band map, put a scratch pad memory on the freq, and come back later (but soon).
    - ▪ Become an expert tailender. It really works, especially on CW.
    - ▪ Look in between the big guns for decent signal stations that you can work-- slope tuning or very narrow filters required! Work on your timing--send your call sign during a pileup "null" (be first, last or just at the right time to be heard). When I had the newbies over for SS phone, this was their biggest problem - they couldn't figure out why folks almost always came back to me on the first or at worst second call, but they had to call many times to get through - timing is crucial.
  - o <u>From N1RR</u>
    - ▪ Raising ur code speed: YEARS of PRACTICE / CONTESTING / Making Contacts / W1AW code Practice+Bulletins
    - ▪ Don't practice with speeds you can copy at 100% accuracy, you would not be pushing yourself - Practice at speeds you can not copy completely!
    - ▪ S&P rates are dependent upon: UR TX PWR / UR ANT / PROP.

- How many times do u have to call ? If no answer, do u push the "A=B" button and tune for the next guy?
  - From G3RTE
    - One of the best bits of advice is to have a good memory when it comes to S & P. Not too hard when you are in a single operator section but not so easy when you take over from somebody else in a multi op section of a contest.
  - From K4OJ
    - Listen to everything you hear, sometime you don't wait for the exchange to get to the point where you hear the guys call.
    - A seasoned contester can know to stop the dial or keep tuning by listening to everything sent. Example: if you hear a section of NWT being sent and you already have the mult - KEEP TUNING - odds are damned good it is the guy you already worked, and if it isn't there will be a humongous pileup on him.
    - In a DX contest, listen to the zone being sent, if it is a new one you know you have to work the guy even if he hasn't signed his call!
    - The more you contest the better your mind will be at processing the thought "W3LPL" - you will know without typing it into your software that you have already worked them, etc.
    - Above all keep tuning - don't get hooked on listening to a rare dx station - it is just a contact, the longer you dwell the fewer contacts you will make on that weekend.... keep moving.
  - From AA4LR
    - I'll pass on some tips that Randy K5ZD gave me a few years ago.
    - Your first tip is to tune faster. Your first objective is to find a station who you haven't contacted before. Once found, you have to call and then contact him. Don't waste any time here listening to pig farmers or ragchewers.
    - The third tip is knowing when to give up. After two or three tries, you might as well move on. You'll come back to them later. If someone CQs in my face, I give them one more try and then move on -- I know I'm just too weak for them to work. Come back to them later when conditions are better. Don't think about multipliers until you are about 12 hours into the contest.
    - The final tip is to try a CQ any time you find a clear frequency. You can achieve much higher rates calling CQ than you can S & P. I usually CQ for 1 minute, then move on if I get no responses. If I make a few contacts, I'll CQ for 2 minutes before moving on.
    - There is definitely some skill involved in S&P and it can be learned through lots of practice. On CW, you have to be able to 'guess' if a station is new based on just getting part of his call. This is a combination of knowing he calls active in the contest and the ability to use the check partial feature of CT. On Phone, it helps to have an ear for recognizing different accents and voices. The "secret" seems to be:
      - a) knowing what to listen for
        - partial calls
        - accents

- special sounds of propagation effects
- pileups
- unusual exchanges
- hunting for common ops on needed bands
- b) knowing what to SKIP
  - Weak ones on a fast scan
  - Stuff that doesn't "sound" like DX (in a DX test)
  - Stuff spotted on bandmap (if current)
- c) doing it all quickly
  - A=B switch
  - Trying not to S & P on the same band for more than 30 mins
  - Knowing what propagation should be to wherever
  - Since most of this involves listening, much of it should be practicable between contests. So the general solution is to spend a lot of time in the "chair". Doing it fast and knowing what to skip certainly aren't simple, but should come with experience.
  - o From KS4XG
    - Hook up rig control to your computer and use it with a logger that supports a band map. This will drastically reduce the time you waste recognizing the same set of folks you worked already. You can also easily evaluate where the gaps are. As a side effect, after the contest you can see the ratio of your S& P and running QSOs because the frequencies have been captured.
    - The loud stations will sometimes leave the high bands well before they close to jump on a lower band before it gets crowded. This can provide great opportunities for weaker stations to run. The rate will stink, but it may smell very sweet compared to the alternative on the other bands.
- **How to be Competitive** (*Editor: These are excerpts. It is recommended you visit the EI8IC website for the full version*)
  - o This article, by Rob Hummel, WS1A, discusses ways to be really competitive in an HF Contest. He writes: If you want to be competitive, you must be positive. Here are some suggestions.
  - o Acquire as much knowledge as possible about the contest. First, learn the rules of the contest. That means knowing the exchange and the scoring. It also means understanding what strategy you should use to maximize your score. Figure out how long should you chase a multiplier and how many Qs do you need to be competitive. Figure out if a multiplier a 3-point qso is more valuable to you toward the end of the contest. Calculate how many mults you will need to be competitive.
  - o Study the local competition. Study the scores, multipliers, and prefixes worked by those in your area. Call them or write them and find out their strategies. (Of course, they may not want to tell you!) Ask for copies of their logs. Study where they pointed their antennas and when. Find out what bands they favored and why. Anyone who beats you is in a position to teach you something. Instead of reviling them, study them. Don't forget the other end of the spectrum. Some of the most

valuable lessons I've learned have come from low-power stations with wire antennas.

- o Improve your station. Learn the truth about feedline matching, antenna loss, VSWR, directivity, and gain. That means read and study. That means experiment. That means cut and try. Shrug off the myths embraced by the mediocre. Don't listen to people who tell you that 2:1 SWR is good enough because all the power goes somewhere eventually. Or that 9913 is lossless at HF. Or that a 1 dB difference in a signal is unnoticeable at either end. Or that connector loss is negligible. All those statements are lies. Find out why. Work on your antennas. Nothing is perfect or stays that way. Put up new antennas. Try wires. Try loops. Try beverages. Try low-noise receive antennas. Try slopers. Try, try, try. All these antennas are relatively low-cost.
- o Learn your radio. All (well, most) of those knobs on your radio have a purpose. Find out what they do. Read and study the manual. Do you know where the manual is? If you can quickly set a split frequency, you might be the first to work a new station of 40m. If you learn how to use those 100+ memories efficiently, you can stack up big stations and throw your call in rapidly to 2, 5, or more stations simultaneously. Get all your filters in place. Get a voice keyer. Learn your DSP. Get a better mike. Tweak the audio until it sounds crystal clear and with all the punch of a buzz saw cutting through aluminum. Remember that setting for the contest, then turn it back to mushy so the boys on 80m don't complain.
- o WORK the contest. If you're going to work a contest, then, by God, WORK IT. A 48-hour contest runs for 48 hours. If you want to be competitive, you will run for 48 hours too. Hey, if you can't, then you can't. But then don't whine about not winning. The single biggest weapon that a small pistol has is persistence. I've heard lectures from big guns where they advocate switching bands when your QSO rate drops below 60/hour. That's okay for a big gun, but here are some surprising statistics:
    - At a rate of 60 Qs/hour, you would work 2,880 stations in a 48-hour contest.
    - At 30/hour, you'd work 1,440 stations in a 48-hour contest.
    - Even a rate of 15/hour (only one QSO every 4 minutes!), you'd still work 720 stations in 48 hours!

  How many Qs did you work in the last contest? I've WON contests where I didn't make 720 total Qs. Cherry pickers don't win. If you give up when the time between Qs stretches out to 4, 6, 10, or more minutes, you give up your competitiveness. A contesters mettle is measured in the dead of night when calling CQ endlessly on a seemingly dead band or when tuning 20m or 40m or any other band straining to pull that next new station out of the noise. (Hint: This is where 1 dB or less makes all the difference in the world.)
- o Have fun. Winning is fun. But so is competing. It's great fun being a part of an overall event that's larger than some petty self-centered concern about whether your QTH is "unfairly disadvantaged." If you want to have fun in a contest, find people who are having fun and do what they're doing. Don't be poisoned by the facile argument that a contest where everyone isn't a winner is unfair and unfair is no fun. Everything is fun if it involves amateur radio.

- Conclusion(s). If you like contests or think you might, understand that there are hundreds and thousands of like-minded souls out there who want you to be the best you can be. We'll help, encourage, and congratulate you for every QSO you make and every log you submit. Every DX station is looking for you. Every QSL you get is a thank you. Ignore the bitter, the miserable, and the perpetually dissatisfied. They're not your competition; they're QRM.

  Rob Hummel (WS1A

How do you get better? K5ZD, CQ-Contest Reflector, October 31, 2008 *(Editor: Excerpts from the post.)*

- I think we all can acknowledge that practice is an important part of learning and improving any skill… Why does no one ever talk about practice with regard to radio contests?
- Start at the bottom of the band and see how fast you can search and pounce your way to the top. Then go back to the bottom and do it again. The first time is about knowing how to acquire the next signal and dump in your call (or decide to keep tuning). The second pass is the valuable one. It helps you practice call sign recognition, duping skills, and how to dig between the fast loud guys.
- Work Field Day running high power. No better simulation for practicing running skills. :)
- Work RTTY contests to learn SO2R skills. In RTTY, the computer is doing the brain work and the QSOs have a fairly consistent timing and pattern. This frees you to practice the keyboarding skills of jumping between the two logging windows. For even higher level of practice, try running on two bands at the same time (while never transmitting on two bands at once). The goal is to do it so smoothly that no one listening can tell what you are doing!
- Search and pounce in a contest using low power. Almost everything I learned about busting pileups came from my early years in ham radio with 100 watts and wires in trees. You take a different approach when you are not the loudest guy in the pileup. Learn that different approach and then be amazed when you apply it while running a KW!
- W4AN used to do work in his shack with two radios turned on listening to two different stations. He would practice copying both. You probably won't be able to copy solid on both, but you will learn how to quickly shift focus back and forth. The goal is to get this skill happening without thinking.
- Get on the air between contests and make some QSOs. Nothing helps your CW sending more than having to think and send at the same time. :)

Observations by the Editor:

- There was an interesting discussion about State QSO parties at https://groups.io/g/QSOParty/topic/82382454 . Ideas discussed included balancing the events across the year, SSB vs CW scoring, Rover issues from state to state, single day vs two days, etc.

- The PVRC has a link to a tutorial on the Reverse Beacon Network (RBN) by Pete, N4ZR. It is very much worthwhile reading if you want to understand this helpful operating tool. https://www.pvrc.org/N4ZR/rbn.pdf
- There is a difference between being a contester and being a competitive contester. The quest to be #1 is hard work, expensive, and frustrating. Only you can determine what your personal fun to work/expense ratio will end up being. Yet everyone likes to feel they did well during "Butt In Chair" time regardless of whether they spent 1 or 48 hours in front of the radio. The more ideas you adopt from the contest tips that were shared earlier in the newsletter the more likely it is you will have fun at whatever level of contesting you choose to pursue.

N1MM+ Tips:

Not much this month due to the N1MM Zoom presentations being given between newsletters. Here's some short quotes pulled at random from the N1MM+ user manual that might help someone or trigger a helpful idea.

- If you press the backslash "\" key (and the program is in SO2V or SO2R mode), the program opens a second, almost-identical entry window. The only difference is that it will have a "B" instead of the "A" in the title bar of the first entry window, and it may well have a different frequency and/or mode as well. But if you pop up the second Entry Window by mistake, and want to get rid of it, you simply close it by clicking the big red X.
- There is a third setting that may require attention in Windows 10. In the Windows Settings app, select Privacy, and then among the functions on the left side of the window, select Microphone. An option should appear called "Let apps use my microphone". Set this option to On. Starting with the Spring 2018 update of Windows 10, Windows interprets this option to apply to all sound card inputs, not just to the microphone input on the default sound card. If this option is set to Off, neither N1MM Logger+ nor any of the other programs it uses to decode digital modes, etc. will be allowed access to any sound card inputs.
- Do Not Install to a Cloud Server or Cloud Backup!
  If you are using some kind of cloud backup, such as DropBox, Google Drive or OneDrive in Windows 10, you should not install the user files area in the cloud, nor even in a location that is synced to the cloud, because the syncing operation has been observed to corrupt the program's database files. Make sure that the location where the installer places the user files area is on your local drive (there should not be a OneDrive, GoogleDrive or Dropbox anywhere in the path name), but do not use a location inside the Program Files or Program Files (x86) path. If necessary, you can create a new folder at the top level of the directory tree (e.g. C:\HamRadio) into which you can direct the installer to place the user files area.
- The Log Window
  If you click on any column heading, the entire log is sorted by that attribute – for example, if you click on the "Call" heading, the log will be sorted by call sign. Click on the MM-DD HH:MM heading to switch back to the normal chronological order. A further nice touch – if you click a second time on the column heading, for example the "Call", the sort order

switches from Ascending to Descending, so that all your "Z" QSOs come first, and your "As" last. Same goes for the date/time heading – normally, you'll want to leave the Log Window in ascending chronological order, so that each QSO you log appears immediately at the bottom of the list.

- You may sometime want to quickly find when you last worked a station amongst the hundreds (or thousands) of q's in a big log. Ensure your Log window is open and enter their call in the Entry Window. Use the key combination Ctrl+F. The Log will display the contact at the top of the window. Repeat to locate even earlier contacts.
- How to Get Statistics: From the View menu item in the Entry window, choose Statistics. This tool allows you to select any two data points of interest. For example, you can select hours for the Row and Zones for the Column, and the program will display a table of how many QSOs in which zones were worked in which clock hours. This is a lot easier to use than it is to explain in words, so give it a try.

Upcoming Contests: See the WA7BNM webpages

SFOTA Current Leaderboard:

May-14-2021

Current Leaderboard

2021 OVERALL STANDINGS

	CALL	Contests	CW QSO'S	SSB QSO'S	DIGITAL QSO'S	RTTY QSO'S	TOTAL QSO'S
1)	N4IQ	52	5234	776	207	3984	10201
2)	WB4HRL	79	4388	1082	56	1518	7044
3)	K3DNE	33	750	4454	51	824	6079
4)	WN4AFP	39	2790	1132	0	0	3922
5)	AC4MC	21	1968	1305	4	133	3410
6)	KG4IGC	14	632	974	0	1374	2980
7)	K7OM	15	628	80	0	1656	2364
8)	N4XL	8	1120	1089	0	17	2226
9)	NU4E	4	1010	220	0	875	2105
10)	N2OG	8	108	896	34	738	1776
11)	K4QQG	22	0	1496	0	0	1496
12)	NI7R	2	564	0	0	0	564
13)	KS4YX	3	120	14	28	368	530
14)	K9JDP	3	0	208	0	74	282
15)	NE4EA	1	55	0	0	0	55
16)	AF7T	1	4	0	0	0	4

3830 Activity:

Contest	Call	Class	Power	Score
50SprngSprnt				
5/9/2021	K3DNE	Single Op	HP	306
7QP				
5/2/2021	K3DNE	SO(A)Mixed	HP	4,551
5/2/2021	K4QQG	SOSSB	LP	1,400
5/3/2021	KG4IGC	SO(A)Mixed	LP	13,621
5/5/2021	WB4HRL	SO(A)Mixed	HP	2,496
5/3/2021	WN4AFP	SO(A)Mixed	LP	407
ARI				
5/2/2021	K7OM	SO RTTY	HP	8,880
ArQP				
5/9/2021	K3DNE	SOSSB	HP	30
5/8/2021	K4QQG	SOSSB	LP	405
5/9/2021	WN4AFP	SOMixed	LP	1,288
BARTG 75				
4/25/2021	N4IQ	Single Op	HP	768
CQMM DX				
4/20/2021	K7OM	SOAB	HP	22,416
4/19/2021	N4IQ	SOAB	HP	86,043
DeQP				
5/2/2021	K3DNE	Single Op	HP	120
5/3/2021	KG4IGC	Single Op	LP	200
5/3/2021	WN4AFP	Single Op	LP	720
FlQP				
4/26/2021	K3DNE	SOAB(A)Mixed	HP	1,620
4/25/2021	K4QQG	SOABSSB	LP	735
4/26/2021	WB4HRL	SOAB(A)Mixed	HP	10,620
4/28/2021	WN4AFP	SOAB(A)Mixed	LP	109,416
GaQP				

Contest	Call	Class	Power	Score
4/14/2021	WN4AFP	Single OpMixed	LP	16,403
InQP				
5/2/2021	K3DNE	Single Op	HP	1,053
5/2/2021	K4QQG	Single Op	LP	144
5/3/2021	KG4IGC	Single Op	LP	300
5/3/2021	WB4HRL	Single Op	HP	14
5/3/2021	WN4AFP	Single Op	LP	1,848
MiQP				
4/19/2021	K3DNE	Single Op	HP	170
4/18/2021	K4QQG	Single Op	HP	432
4/18/2021	N4XL	Single Op	LP	22,032
4/18/2021	WN4AFP	Single Op	LP	592
NewEngQP				
5/2/2021	K3DNE	Single Op	HP	8,557
5/2/2021	K4QQG	Single Op	LP	2,072
5/3/2021	KG4IGC	Single Op	LP	9,660
5/2/2021	N2OG	Single Op	LP	14,520
5/5/2021	WB4HRL	Single Op	HP	10,692
5/3/2021	WN4AFP	Single Op	LP	18,338
OnQP				
4/19/2021	K3DNE	SO SSB	HP	480
4/18/2021	K4QQG	SO SSB	LP	480
4/18/2021	WN4AFP	SO Mixed	LP	13,965
PACCdigi				
4/18/2021	N2OG	SOAB	LP	510
SPDX RTTY				
4/25/2021	K7OM	SOAB	HP	47,120
4/25/2021	KG4IGC	SOAB	LP	42,666
4/25/2021	N4IQ	SOAB	HP	11,040
4/26/2021	WB4HRL	SOAB	HP	2,834
Volta RTTY				
5/10/2021	K7OM	SOAB	HP	1,202,920

Contest	Call	Class	Power	Score
5/9/2021	KG4IGC	SOAB	LP	5,869,716
5/10/2021	N4IQ	SOAB	HP	4,586,890

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73 es QRT de N4XL