TALES FROM THE SWAMP

December 2019

From your President:

November was a busy and exciting month for our club! We have had three major contests this month and some pretty amazing overall club scores. It all comes down to good participation and a lot of butt in chair time (BIC). The club has done very well this past year, and we couldn't have done it without your continued support. Judging from our stats page on the club website, participation is on an upward trend which is great! We have also had a few new heavy hitters added to the club roster who consistently produce high Q counts in all of the major contests. This will help us tremendously in the upcoming club competitions.

Earlier this month, we added a new member among our ranks, Ed Kucharski K3DNE from Cross Hill, SC. Ed is a well-seasoned contester in HF, VHF, & microwave, and we are pleased as punch to have him on our team. Last weekend, he did an amazing job in the ARRL Sweepstakes SSB contest and made a staggering 1048 Q's with 83 sections, great job Ed!

This upcoming weekend is the CQ World Wide DX Contest, CW. This is one of the biggest contests of the year, and there will be plenty of DX stations to work if you're looking for some all-time new ones for your log. We would like to get as many operators as possible on the air this weekend. If you are worried about your CW skills, don't fret! There will be plenty of slow to medium speed coders out there amongst the speed demons. Remember, every Q counts! Doesn't matter if you make one Q or 1000 Q's, take your time, enjoy the contest and if someone sends too fast for you, send QRS (Please slow down)

Expect to hear a lot of cut numbers in this contest, there will be a lot of operators using them in order to shave off any time that they can to complete a Q. Here is a handy chart for those of you who are not familiar with cut numbers:

Number	Normal Morse	"Cut" number	Equivalent character
0	dah-dah-dah-dah-dah	dah	T
1	di-dah-dah-dah-dah	di-dah	A
2	di-di-dah-dah-dah	di-di-dah	U
3	di-di-di-dah-dah	di-di-di-dah	V
4	di-di-di-di-dah	di-di-di-di-dah	4
5	di-di-di-di-dit	dit	E
6	dah-di-di-di-dit	dah-di-di-di-dit	6

7	**dah-dah-dit-dit-dit**	**dah-dah-dit**	**G**
8	**dah-dah-dah-di-dit**	**dah-di-dit**	**D**
9	**dah-dah-dah-dah-dit**	**dah-dit**	**N**

There will be some fierce competition among contesting clubs so fire up those rigs and come out and support your club!

The club will be celebrating its fifth year as a club come January. When Dave NJ4F, Mark KM4RK, Ted K7OM, and I started this club, we had no idea how much it would grow. We have some of South Carolinas finest contesters among our ranks, thank you all for your continued support. We may be a small club, but thanks to all of you, we have the ability to pack a powerful punch when it comes to contesting.

I would like to remind everyone that our next annual club meeting will be held on Jan. 25, 2020 at 1 PM. Lizards Thicket, 4616 Augusta Road, Lexington, SC; their phone number is 803-785-5560. Dave WN4AFP will be looking for nominations for the 2020 slate of officers sometime before the club meeting in January. If you have someone in mind for any of the officer's positions or would like to nominate yourself, be sure to let Dave know. In closing, I hope you all have a wonderful Thanksgiving, best wishes to all of you and your families for a very Merry Christmas!

Brag List:

CQ WW WPX CW:

N4XL SA LP All 1,657,435 1st in the 4th call area, 3rd in NA

N4IQ SA HP All 907,722 7th in the 4th call area.

NI7R SA HP All 718,128 10th in the 4th call area

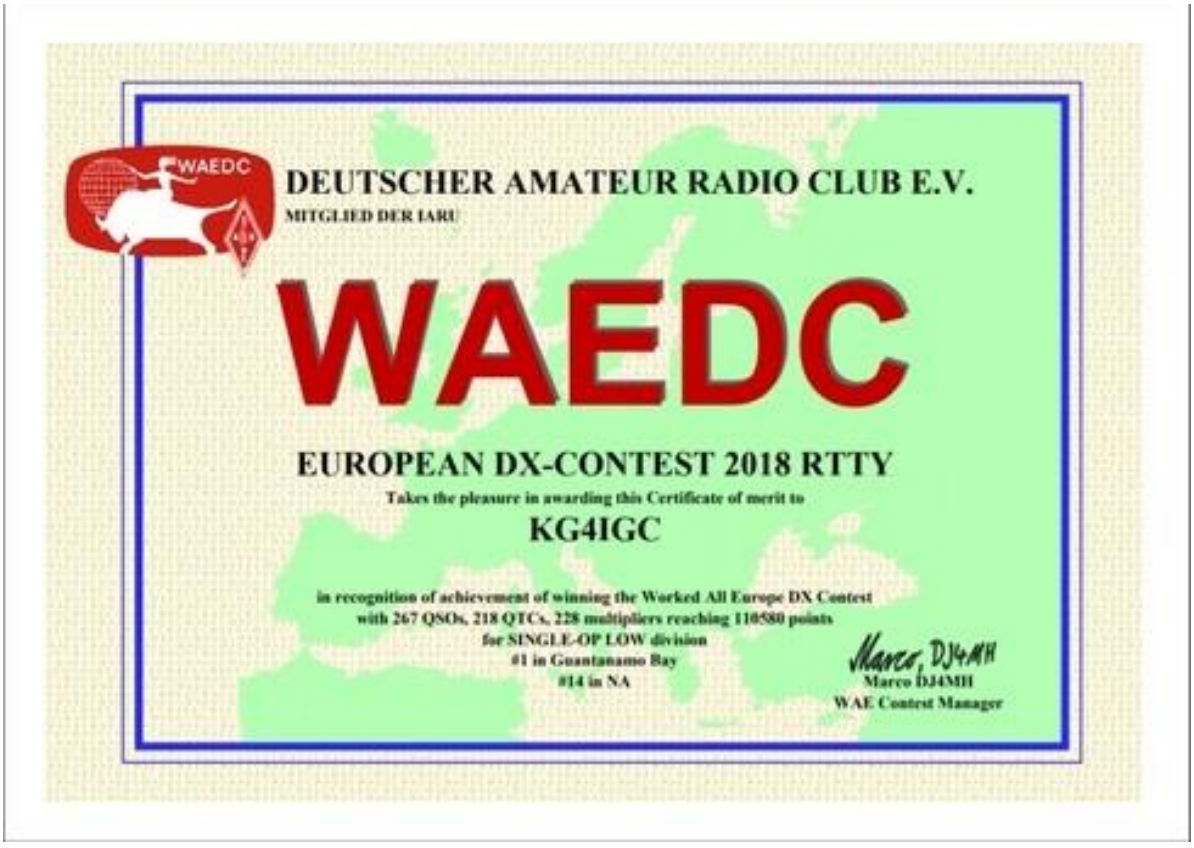
K7OM SO HP All 235,304 24th in the 4th call area

WB4HRL SA HP All 31,080 36th in the 4th call area.

WN4AFP was awarded this certificate for his participation at the NR4M superstation:

WAE RTTY Contest 2018

Frank KG4IGC certificate of participation, # 14 in North America, Guantanamo Bay is a mistake due to his KG4 designation.



From across the pond:

Ron N4VZ has informed me that they finally got fiber optic internet at their home that is under construction in the Philippines. Unfortunately, he cannot connect to his Flex. After checking via his security camera, Ron noted that the rig has a flashing red light indicating a problem. He checked with Flex and

they are saying that there is a boot failure of one of the three internal computers. Naturally, the only fix is to return the rig to Flex so they can re-flash the ROM. On a side note, Ron looked into getting his permanent license. In order to do that, he has to pass 10 (yes, 10) individual tests which includes a 25WPM code test. Ron tells me that he might take a crack at the tests before he returns to the states.

Member Contributions:

Ferrite chokes

By Kevan N4XL

The following are some excerpts from a PowerPoint presentation I'm giving to the Greenwood Amateur Radio Society. If you are interested in this topic, I found the information in the References sources given at the end to be very useful. If no website is given google the reference title and you should find it. Contact me if you have difficulty doing so. If you are thinking of building your own baluns then I highly recommend looking at K9YC's web site. He has developed a cookbook to help with that.

I've heard people say, "You need a balun." and others say, "I put a in a balun and things just got worse. I won't use them." We've all probably heard an Old Timer say "All you need is a seven or eight coils of coax at the antenna feed point." G3TXQ's information was enlightening to me as to whether or not you

actually need one and that if you aren't aware of their limitations they actually can make problems worse instead of solving them.

I think Bill, N4IQ, is far more of an expert than I am about these thingy's and encourage him to speak up. In fact, it was a comment from Bill about the choosing a balun to give maximum impedance at the frequency of interest and a posting by K9YC about a "cookbook" he has for winding ferrite chokes that prompted me to revisit ferrite choke design.

Excerpts:

1. Common Mode Current is UNWANTED current flowing on the outer surface of the coax shield.
2. Common mode current has more than one cause. Sources are an imbalance in the antenna system (antenna + feedline) or External signals being picked up on the coax shield (RFI from consumer devices or RFI from other radio transmitters)
3. "Pin 1" problems affect almost every piece of ham radio equipment. They exacerbate EMI caused by common mode currents. (google K9YC Pin 1 problem for explanation)
4. All ferrite chokes are not the same. Far from it. One choke does not fit all. Air chokes (coiled coax) are nowhere near as effective as a properly designed balun.
5. A properly selected ferrite choke places a high impedance in series with Pin 1 impedances. Most of the voltage generated from common mode current will therefore (hopefully) be developed across the choke instead of in your equipment.

6. Baluns made of ferrite beads placed around the jacket of coax are not as effective as toroid wound baluns. Many low cost baluns are of the ferrite bead type. Since they are cheaper and/or easier to make, people buy/build more of them. Since they don't work as well, people say baluns don't work.

7. For HF frequencies, Mix 31 is a good mixture to choose for many applications.

8. Baluns have both reactive and resistive components. In some applications the reactive component of the balun interacts with the reactive component of the antenna system in such a manner as to make RFI problems worse rather than better. You should choose a balun with high resistive values and low reactive values at frequencies of interest.

9. The reactive component of a balun varies with frequency. In the case of a multi-band antenna the reactive component may help reduce RFI on some bands and make it worse on others.

10. It is well known that baluns burn up. "Resistive chokes have the disadvantage that if they have insufficient impedance to reduce the CM [common mode] current to a very low value, there may be significant core heating."

11. "Aim to choose a choke which has a high impedance and is resistive over the frequency range of interest. For high power applications RG400 coax can be used in place of RG58 with little change to the choke impedances. "

12. K9YC General Rules

    - *More impedance is better.*
    - *All ferrite chokes should be designed to operate in the frequency range where their series equivalent resistance is large and their series equivalent reactance is small.*

- *These conditions are satisfied at or near the choke's resonant frequency.*
- We do this by selecting a suitable material, core size, and number of turns

13. G3TXQ says:

As we vary the length of the coax, the braid path impedance changes. When the coax is close to a quarter-wave long the CM path is high-impedance and relatively little current flows along the braid whether we include a choke or not; when it is close to a half-wavelength long substantial current flows if we don't include a choke. But there is no length of coax where an "unlucky" reactive choke impedance could not make things worse!

14. References

- A Ham's Guide to RFI, Ferrites, Baluns, and Audio Interfacing, Revision 7, Jan 2019 by Jim Brown K9YC
- Picture of Common Mode Noise Filters, Palomar-engineers.com
- Ferrite Mix Selection, Palomar-engineers.com
- Power, Grounding, Bonding, and Audio for Ham Radio by Jim Brown, K9YC
- Amateur Radio (G3TXQ) - Common-mode chokes
- Common Mode Current,DJ0IP http://www.dj0ip.de/common-mode-chaos/
- #84: Basics of Ferrite Beads: Filters, EMI Suppression, Parasitic oscillation suppression / Tutorial by W2AEW, YouTube
- The effect of a 1:1 balun on a resonant dipole, IZ2UUF, YouTube

A personal note from Kevan, N4XL

This note comes about because I have just completed preparing a presentation about ferrite chokes. While researching I learned a few new things and corrected some misconceptions I had been carrying around for years.

Frank, KG4IGC, asked me to give him a technical article for the newsletter. A word of caution about the information in my articles. Don't take them as necessarily being technically accurate. They represent the state of my current understanding of how things work – which I've too often later found to be incorrect. Over the years I've learned that, for me at least, it is better to try and understand concepts rather than details. I usually make presentations that simplify complex ideas. I sometimes intentionally say things that are technically

inaccurate, but when explained in that fashion allow me to visualize what is happening in a manner that allows me to solve real-world problems. There have been several occasions where someone who really knows how things work finds fault with my explanations. I welcome that criticism and think it is great. That is often how I find out I really don't know how something works after all! It doesn't bother me to admit I'm wrong. That's part of being human.

Some people have begun calling me a "Technical Expert". Others go the opposite direction and call me a "Know It All". The truth is I am neither. My formal electronics education ended in 1976 when a 2-year Technical school gave me a certificate saying I could fix stereos and TV's. My Extra class license came a few years later. I firmly believe the only reason I was able to pass the Extra test is it was multiple guess and they had published the question pool ahead of the exam. I doubt if I could pass one today without a few months study. It's now near the end of 2019 and most of what little I do remember from that long ago is woefully outdated. Hardly the qualifications for being a "Technical Expert".

As to "Know It All", nope. Not me. I'm wrong a lot. However, if people ask me to explain something or give a presentation, I'll usually try to help them out as best I can. And I have been known to post very long messages to contest blogs whose purpose is to share ideas about how to improve contest scores.

Unlike many Ham's who used their teenaged interest in radio to then gain an education and professional career in electronics or those who used their electronics education for a career and then moved into amateur radio, I joined the Navy at 18. Those of you who have been in the military will appreciate what happened next. The detailer said 'I see you have an electronics education and a General Class Ham Radio license. You're going to be a mechanic.' Nor did I have an Elmer to teach me how to be a ham. I'm pretty much a self-taught "technical expert" which means I make a lot of mistakes and certainly don't think I know it all. I'll share another interesting turn of events. After being a mechanic for 20 years in the Navy I retired and ended up working for Monsanto. I was hired and put in charge of the Electronic Repair and Calibration Shop doing board level repairs and ISO calibrations because "You know electronics". It was a steep learning curve. My coworkers cut me some slack though since a shop next door did automatic valve repair and I was able to help them out of a jam now and then. Gotta' love how life works out!

I love to learn new things and that drives me to try and figure out how to make my ham shack better. Doing so also helps drive up my contest scores. Because I'm always studying and trying to improve people ask me my opinions on things and to give presentations and write articles. Okay, I'll do that. All I ask in return is just please be aware I am not that "technical expert" some seem to think I am.

I encourage those who read this to do two things. First, follow up on anything that interests you by doing further research on it. And lastly, tell me if I'm wrong so I can continue to learn. Feel free to do it publicly so we can all learn from my mistakes.

Sincerely,

Kevan Nason

N4XL

From the Reflector:

Dave NJ4F offered a gift certificate that he won at the Myrtle Beach hamfest from Mastrant to anyone who could benefit from it.

Kevan N4XL passed on the sad news of N4PN Paul Newberry's passing.

Dave WN4AFP reminded us to be mindful of log submission deadlines. This applies to both contests and SFOTA. Log due date reminders can be found on the WA7BNM website.

NU4E told us about his temporary setup at his company's parking lot for the ARRL SSB Sprint.

Kevan N4XL talked about elevated radials and gave a couple of good resources for everyone to check out:

http://lists.contesting.com/archives//html/Topband/2013-03/msg00004.html

https://rudys.typepad.com/files/qex-ground-systems-part-3.pdf

http://lists.contesting.com/archives//html/Topband/1996-10/msg00155.html

Matt NU4E told us about his new 40 meter triple ground plane antenna. His fiberglass pole is about 17.5m, he attached the radiator at 17m, the radiator is 10.08m and all three radials are 9.98m long. The feed point is at about 7m, radials are almost 120° apart and sloping down to 3-4m. Photos of his antenna can be found on Matts website.

Phil NI7R informed the club about announced operations for the upcoming CQWW DX Contest, CW.

Kevan N4XL pulled data from the 3830scores website for only US All Band entries in the last CQWW SSB contest and played around with the data. Below are the results:

Percent of q's from all US all band entries by band

160	80	40	20	15	10
2%	9%	18%	43%	24%	4%

Percent of countries worked by band

160	80	40	20	15	10
3%	13%	21%	33%	26%	4%

Percent of zones worked by band

160	80	40	20	15	10
5%	13%	24%	30%	22%	7%

Percent of mults worked by band

160	80	40	20	15	10
3%	13%	22%	32%	25%	5%

Contests:

CQWW DX Contest, SSB Oct. 26, 2019

WB4HRL SO(A)AB HP 306 Q's 55 Zones 171 Cty	179,444
N4XL SO(A)AB LP 587 Q's 83 Zones 263 Cty	535,954
KG4IGC SO(A)AB LP 203 Q'S 56 Zones 147 Cty	104,545
WU0B SO(A)AB LP 222 Q's 53 Zones 133 Cty	101,370
KG6MC SOAB & (Classic) HP 225 Q's 51 Zones 122 Cty	102,589
K7OM SOAB HP 225 Q's 51 Zones 122 Cty	11,808
NU4E SOAB LP & (Classic) 505 Q's 83 Zones 231 Cty	403,490
WN4AFP SOAB LP & (Classic) 101 Q's 29 Zones 69 Cty	22,932

Club claimed aggregate score: 1,462,132

ARRL Sweepstakes Contest, CW Nov 2, 2019

K7OM SOHP 125 Q's 58 Sect.	14,500
WN4AFP SOLP 272 Q's 75 Sect	40,800
N4XL SOLP 6 Q's 6 Sect.	72
N4IQ SOUHP SO2R 825 Q's 83 Sect	136,950
NI7R SOUHP 320 Q's 83 Sec	53,120
WB4HRL SOUHP 203 Q's	26,390

Club claimed aggregate score: 271,832

WAE DX Contest, RTTY Nov. 9, 2019

K7OM SOHP 272 Q's 412 Pts 140 QTCs 247 Mults 101,764

WB4HRL 305 Q's 405 Pts 100 QTCs 236 Mults 95580

KG4IGC 261 Q's 422 Pts 161 Q's 223 Mults 94,106

Club claimed aggregate score: 291,450

NA Sprint SSB Contest Nov. 10, 2019 SFCG Team #1

N4IQ SOHP (SO2R) 147 Q's 44 Mults 6,468

KG6MC SOHP 62 Q's 44 Mults 1,674

NU4E SOLP 135 Q's 36 Mults 4,860

WU0B SOLP (SO2R) 64 Q's 30 Mults 1,920

K3DNE 63 Q's 27 Mults 1,701

Club claimed aggregate score: 16,623

ARRL Sweepstakes Contest, SSB Nov. 16, 2019

WN4AFP SOLP 78 Q's 32 Sec 4,992

NU4E SO QRP 50 Q's 28 Sec. 2,800

K3DNE SO Unlimited HP 1048 Q's 83 Sec 173,968

WB4HRL SO Unlimited HP 222 Q's 65 Sec 28,860

WU0B SO Unlimited LP 256 Q's 69 Sec 35,328

Club claimed aggregate score: 245,948

Upcoming Contests:

QRP Fox Hunt, Nov 20, 0200z to Nov 20, 0330z; CW; Bands: 80m Only; RST + (state/province/country) + name + power output; Logs due: November 21.

Phone Fray, Nov 20, 0230z to Nov 20, 0300z; SSB; Bands: 160, 80, 40, 20, 15m; NA: Name + (state/province/country), non-NA: Name; Logs due: November 22.

CWops Mini-CWT Test, Nov 20, 1300z to Nov 20, 1400z and, Nov 20, 1900z to Nov 20, 2000z and, Nov 21, 0300z to Nov 21, 0400z; CW; Bands: 160, 80, 40, 20, 15, 10m; Member: Name + Member No., non-Member: Name + (state/province/country); Logs due: November 23.

RSGB 80m Autumn Series, SSB, Nov 20, 2000z to Nov 20, 2130z; SSB; Bands: 80m Only; RS + Serial No.; Logs due: November 23.

NAQCC CW Sprint, Nov 21, 0130z to Nov 21, 0330z; CW; Bands: 160m Only; RST + (state/province/country) + (NAQCC No./power); Logs due: November 24.

NCCC RTTY Sprint, Nov 22, 0145z to Nov 22, 0215z; RTTY; Bands: (see rules); Serial No. + Name + QTH; Logs due: November 24.

QRP Fox Hunt, Nov 22, 0200z to Nov 22, 0330z; CW; Bands: 80m Only; RST + (state/province/country) + name + power output; Logs due: November 28.

NCCC Sprint, Nov 22, 0230z to Nov 22, 0300z; CW; Bands: (see rules); Serial No. + Name + QTH; Logs due: November 24.

CQ Worldwide DX Contest, CW, Nov 23, 0000z to Nov 25, 0000z; CW; Bands: 160, 80, 40, 20, 15, 10m; RST + CQ Zone No.; Logs due: November 29.

QCX Challenge, Nov 25, 1300z to Nov 25, 1400z and, Nov 25, 1900z to Nov 25, 2000z and, Nov 26, 0300z to Nov 26, 0400z; CW; Bands: 160, 80, 40, 20, 15,

10m; RST + Name + (state/province/country) + Rig; Logs due: November 28.

SKCC Sprint, Nov 27, 0000z to Nov 27, 0200z; CW; Bands: 160, 80, 40, 20, 15, 10m; RST + (state/province/country) + Name + (SKCC No./power); Logs due: November 29.

Phone Fray, Nov 27, 0230z to Nov 27, 0300z; SSB; Bands: 160, 80, 40, 20, 15m; NA: Name + (state/province/country), non-NA: Name; Logs due: November 29.

CWops Mini-CWT Test, Nov 27, 1300z to Nov 27, 1400z and, Nov 27, 1900z to Nov 27, 2000z and, Nov 28, 0300z to Nov 28, 0400z; CW; Bands: 160, 80, 40, 20, 15, 10m; Member: Name + Member No., non-Member: Name + (state/province/country); Logs due: November 30.

UKEICC 80m Contest, Nov 27, 2000z to Nov 27, 2100z; CW; Bands: 80m Only; 4-Character grid square; Logs due: November 27.

VHF+ CONTESTS

ARRL EME Contest, Nov 16, 0000z to Nov 17, 2359z; CW, Phone, Digital; Bands: 50-1296 MHz; Signal report; Logs due: December 17.

Tamitha Skov's Space Weather:

Space Weather for TMRO Space News 11-13-2019

SFOTA

The 2019 Swamp Fox on the Air program is winding down but there is still plenty of time for you to get those last Q counts in. We still have a little more than a month, so get those rigs on the air guys and gals! The contest period runs from January 1st through December 21st of each year, good luck to all of you and thanks for your participation!

Current Leaderboard

2019 OVERALL STANDINGS

	CALL	Contests	CW QSO'S	SSB QSO'S	DIGITAL QSO'S	RTTY QSO'S	TOTAL QSO'S
1)	N4IQ	87	8198	653	584	4546	13981
2)	K7OM	40	1639	611	14	3117	5381
3)	WN4AFP	72	3256	1375	0	393	5024
4)	WB4HRL	70	660	2855	1	1372	4888
5)	KG4IGC	24	712	1525	0	2319	4556
6)	NI7R	17	2812	33	0	392	3237
7)	N4XL	4	1327	587	0	0	1914
8)	WU0B	13	0	1622	0	42	1664
9)	KS4YX	8	280	49	38	1086	1453
10)	NU4E	4	0	690	0	755	1445
11)	KG6MC	10	755	618	0	54	1427
12)	N4VZ	8	0	612	483	271	1366
13)	NJ4F	6	310	54	0	115	479
14)	W1TEF	4	332	79	0	0	411
15)	NE4EA	5	47	72	2	74	195
16)	K4KWB	1	0	125	0	0	125
17)	AJ4UQ	4	1	0	1	100	102
18)	KD4CB	4	9	42	0	0	51

2019 INDIVIDUAL MODE STANDINGS

CALL	CW QSO'S
N4IQ	8198
WN4AFP	3256
NI7R	2812
K7OM	1639
N4XL	1327
KG6MC	755
KG4IGC	712
WB4HRL	660
W1TEF	332
NJ4F	310
KS4YX	280
NE4EA	47
KD4CB	9
AJ4UQ	1

CALL	SSB QSO'S
WB4HRL	2855
WU0B	1622
KG4IGC	1525
WN4AFP	1375
NU4E	690
N4IQ	653
KG6MC	618
N4VZ	612
K7OM	611
N4XL	587
K4KWB	125
W1TEF	79
NE4EA	72
NJ4F	54
KS4YX	49
KD4CB	42
NI7R	33

CALL	DIGITAL QSO'S
N4IQ	584
N4VZ	483
KS4YX	38
K7OM	14
NE4EA	2
AJ4UQ	1
WB4HRL	1

CALL	RTTY QSO'S
N4IQ	4546
K7OM	3117
KG4IGC	2319
WB4HRL	1372
KS4YX	1086
NU4E	755
WN4AFP	393
NI7R	392
N4VZ	271
NJ4F	115
AJ4UQ	100
NE4EA	74
KG6MC	54
WU0B	42

Fine'