



# TALES FROM THE SWAMP

**September 2018**

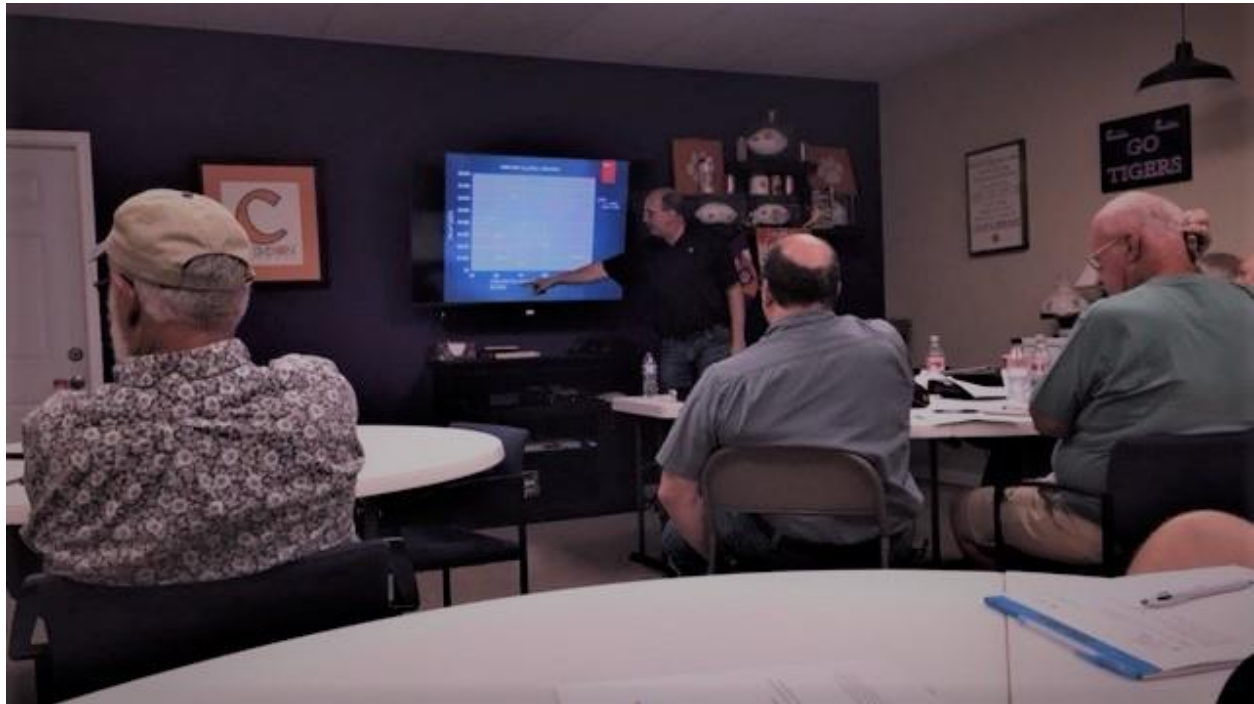
**Author: Frank KG4IGC**

## **From Your President:**

This year's Shelby hamfest was held August 31<sup>st</sup> thru September 2<sup>nd</sup> 2018. Unfortunately, I was unable to attend this year. I wanted to go, but life has its priorities sometimes. I am hoping to attend the Myrtle Beach hamfest later this year if all goes well. If you did get to attend, be sure to share your experience with us on the clubs groups.io message board, we would love to hear about your trip!

Regarding education, there was great attendance at the 2<sup>nd</sup> Advanced Contest Class presented by Kevan N4XL and hosted by Jim K9JDP. The SFCG would like to thank Kevan for doing a wonderful job in organizing and presenting these classes, he did an amazing job. We would also like to thank the Dutch Fork ARC and the South

Carolina DX Association for helping to organize these classes. Here is a snapshot of Kevan teaching the class held on August 18<sup>th</sup> in Grey Court, SC:



It was a very educational class I am glad that attended. I had a lot of fun and got to see a few of our members plus make some new friends from the upstate. The club also gained a new member, Gary Lyons W0GX who has a very impressive contesting history dating back to the 1970's!

After the class I had the added fun of riding part of the way back and hanging out with Al NE4EA. If you did not get to attend, we hope to have the presentation available on the clubs website soon.

Despite a few setbacks, Dave WN4AFP has been working feverishly on the SCQP results. You can now see the detailed line scores on the [SC QSO Party website](#). The contest summary will be posted soon.

The 2018 CQ WPX SSB results are also out, and you can find them [here](#). The club had eight participants this year for a claimed aggregate score club total of 2,246,491 points. Several of our ops have some nice certificates headed their way, be sure to check out the brag list further down the newsletter.

In case you have not heard, WWV, WWVB, & WWVH have been put on the budget cuts list by NIST (National Institute for Standards and Technology). As you can imagine, not too many people are very happy about it. One ham went as far as to write his congressman and also wrote a pretty good article called [NIST takes aim at WWVB, WWV and WWVH](#). At the moment there are two petitions circulating in the ham radio circles working to keep these stations on the air, [Whitehouse.gov WWV Petition](#) & [Change.org WWV Petition](#). Please take a few minutes to sign these petitions. 100,000 signatures are needed by September 15<sup>th</sup>.

[The CQ WW RTTY DX Contest](#) is right around the corner, September 29-30, 2018 0000 GMT Saturday- 2359 GMT Sunday. We had a pretty good turnout last year for this contest, and hopefully we will have more of the same this year. For the newer members, this is one of the more popular contests of the year where we can pool our scores together and enter the club competition. Our club total last year was 942,292 points with eight participants. If you do not have plans to go to [SEDCO](#) this year, come on out and join the fun!

## **Brag List:**

K7OM SPDX RTTY Contest 2018 participation certificate

N4IQ North American SSB Sprint 2016 First Place SC HP 8,650 points

K7OM CQ WPX SSB SO HP ALL 93,964 #18 USA 4<sup>th</sup> call area #106 NA #254 World

KG6MC CQ WPX SSB SOA HP ALL (T) 394,786 #9 USA 4<sup>th</sup> call area #57 NA #177 World

N4IQ CQ WPX SSB SO HP 40M 1,617 #5 USA 4<sup>th</sup> call area #13 NA #55 World

NI7R CQ WPX SSB SO HP ALL 59,584 # 22 USA 123 NA 296 World

W4SLT CQ WPX SSB SO HP ALL 93,936 #19 USA #107 NA #255 World

WJ4X (N4XL) CQ WPX SSB SA LP ALL 797,810 #1 **USA** #3 NA #16 World

WN4AFP CQ WPX SSB SO LP 40M (T) 84,042 #1 **USA** #1 NA #25 World

WU0B CQ WPX SSB SA LP ALL (T) 149,552 #4 USA #22 NA #101 World

## **Notable Mentions:**

Ron N4VZ's XYL Kate K4VZT celebrated her birthday on Sept 1<sup>st</sup>. On behalf of the entire club, happy birthday Kate!

## **Member Contributions:**

### **Archived Ham Radio Resources**

By: Kevan Nason N4XL

Frank, KG4IGC asked me for input to help with the Swamp Fox Contest Group newsletter so I went back to my hard drive and looked at what was there. Found this, and since someone recently asked about what to eat to help get you through a long contest I thought I'd share it. It originally came from a Wikipedia web page under the Ham radio Contesting section. I went looking for the link, but I can't find it now. I have no idea who the author was.

This is a work in progress...

Garbage in, Garbage out, as the saying goes...

Contesting is a demanding sport. A good portion of contesting is brain-work, and some is physical work. Both require good nutrition to work optimally. Most will agree that starting a contest off with a bag of potato chips and a beer, while it might be satisfying, may not allow one to be at his or her optimal performance level.

There are a few "Golden Rules" of nutrition that will act as building blocks for you to find out what *\*your\** body needs to be functioning at its best. From there, tweaks and supplements can take you beyond the plateau level to the next step.

I'm a weight lifter, and I liken contesting to weight lifting. Consider this analogy: as a weight lifter, one needs to be in intimate contact with the iron and bar, and know his or her limits to lift safely. You should also have a very good understanding of what foods and behaviors contribute to a good or bad day in the gym. Conversely, in the shack, we should be cognizant of what makes for a good run, how we are able to think and process things best, and what contributes to "bringing us down". Once we get to the point where progress seems to have become slow or non-existent, supplements can be brought in for the extra edge. In weight lifting, things like protein powder supplementation, creatine, caffeine, etc. are all used successfully and in moderate amounts, can seriously contribute to one's performance.

So, what are some of the important things to remember?

- Drink lots of good water (consider a Brita or similar filtered carafe for the refrigerator, much cheaper than bottled water over the long run and a carbon filter is effective at removing many things out of tap water)
- Keep processed food to a minimum - our bodies have been designed to eat whole foods.
- Keep sugars to a minimum - check the label - A can of Coke has ~39 grams of sugar!
- Eat many small meals, not a big breakfast, lunch and dinner

- Try to avoid the roller coaster of getting tired and waking up with sugar and/or caffeine
- It's also a good idea to hydrate before a contest begins. Start at least a day ahead of time, especially for an SSB contest. There are some supplements that are very useful for contesting, I'll touch on those in another article.

OK1RR has a DX & Contesting page that can be found here at <http://www.ok1rr.com/index.php>.

I found some information from there that I had pulled and saved to my hard drive. The file on my drive is eighteen years old and dated 3/27/2000. Here are two excerpts I find helpful and still use today.

### Tune for lower pitch

Many operators tuning for a 800 Hz pitch which may correspond to default factory setting of many radios. After some years with headphones it may become uncomfortable regardless of the fact that the human ear is mostly sensitive on frequencies of 1 kHz.

Try some 500 Hz pitch. The noise peak caused by narrow filters may seem not so sharp, your ears may become tired not so quickly and, finally, you may feel some 'additional selectivity'. This fact is very easy to explain - if you listen to two signals, one of 1000 Hz pitch, second of 1100 Hz, there is a difference of 10 %. At 500 Hz the same 100 Hz difference represents twice - 20%. Ask your

physician about relationship of the ear sensitivity vs. frequency.

Many of keen CW operators using a pitch of 400-500 Hz. Compare their receiving abilities to your (especially on low bands) and tune lower!

### Use AGC - fast or off

AGC generally decreases receiver sensitivity. It matches RX sensitivity to incoming signal level but the game is about the strongest signal coming through the IF filter - the receiver sensitivity is matched to any strong signal, regardless of its desirability. Any QRM decreases sensitivity and longer AGC time constant increases the time of inaudibility of the weak DX signal.

In early 'tube' years some receivers have separate gain control for RF and IF stages. It allows the operator to adjust the gain accurately to the actual band situation. Some operators calling for this facility now, in the era of computer controlled and totally automated solid state rigs! They are using the AGC occasionally, mostly in local QSOs. If you work DX, try AGC off (CW) or AGC fast (SSB), you will be surprised how your receiver works! Of course, remember to adjust RF gain properly...

None of those three thoughts from the two people are anything an experienced contester needs to be told. But many new people may not be aware of them. I think reading those two articles was the first time I had been presented with those ideas so when I first ran across



them it was useful and I copied the pages to my drive. I have adopted those concepts and they are now a key part of my contesting tool box.

Apparently, both of those pages were removed and are unavailable now. I am glad I saved them as it is good to review things you learned early on and keep it fresh in your thoughts. There are literally thousands, if not hundreds of thousands, of websites talking about contesting, DXing, home brewing, etc. If you run across something grab it and put it in an archive file so it is available for future newsletter articles! More to the point for you more experienced folk, if you find some reference material you think you might need later in your ham career grab it before it is reconciled to the “wayback machine” internet archive website where it will be harder to find.

*\*\*\*If you would like to contribute an article, contesting information, or suggestions for the club newsletter, please contact [Frank KG4IGC](#).*

## **Upcoming Events:**

[W4DXCC DX and Contest Convention \(SEDCO\)](#) September 21st and 22nd, 2018 Location: 410 Pine Mountain Road, Pigeon Forge, TN Phone: (865) 428-8350 Fax: (865) 428-5217 Click here for info on [Hotel Reservations](#).

## **Club happenings:**

Frank KG4IGC shared an email from Robert S57AW reminding everyone of the SCC RTTY Contest.

Gil KS4YX told the club that he snuck into first place in the Roanoke Division & SC in the 2018 ARRL International Contest CW. Gil was running QRP, great job Gil!

Frank KG4IGC introduced our newest member, Gary Lyons W0GX from North Augusta, SC. Gary heard about the SFCG from the North Augusta Belvedere Radio Club newsletter.

Al NE4EA shared the [repeater list](#) from Charleston Amateur Radio Society. Tom AJ4UQ shared the [current status of the SCHEART link](#) and also the [schedule](#).

Dave WB5NHL inquired when the SCQP results would be posted, they can now be seen on the [SC QSO party website](#).

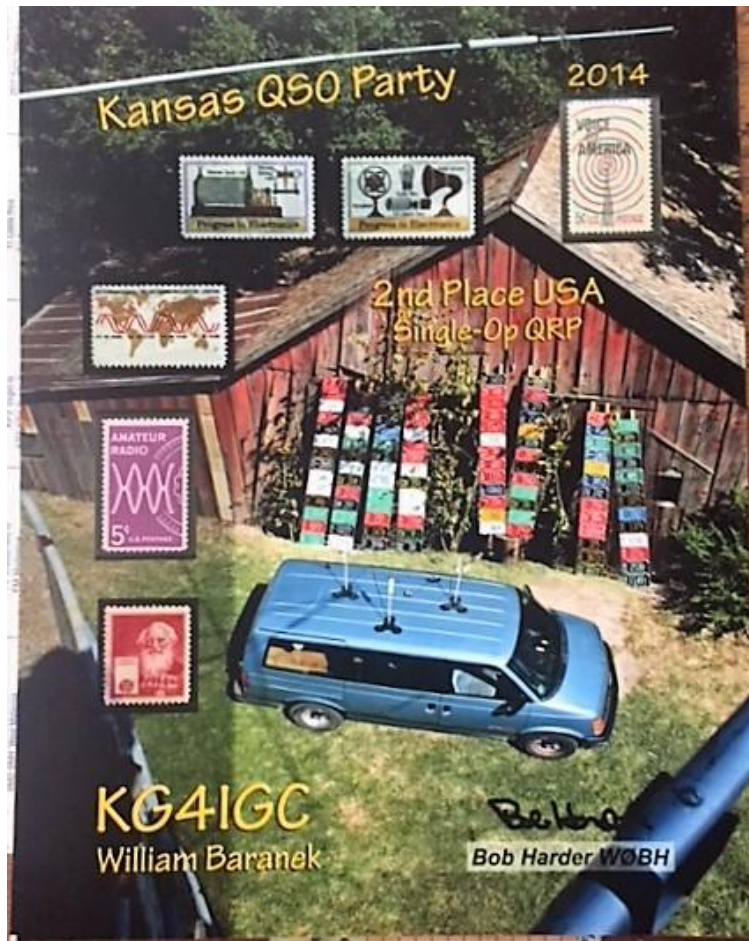
Kevan N4XL informed the club about the possibility of WWV, WWVB, & WWVH shutting down due to budget cuts. He directed our attention to an online petition to sign, and that 100K signatures were needed by September 15<sup>th</sup>, 2018 to move the petition to the White House. The petition can be found [here](#). *CQ-Contest has this from Frank, W3LPL: "Exact quote from page [NIST-25 of the proposed FY2019 NIST budget](#)".*

Dave NJ4F has the following items for sale: (2) VX-1R (2 ea.) FT-50R,(3 ea.) FT-51R, FT-530, spare batteries & chargers.

Tom W1TEF shared a humorous story about his participation in the Kansas QSO Party. This is a very popular and fun QSO party, and also the 10<sup>th</sup> anniversary to boot. The goal is to get a clean sweep of the 1X1 calls OR complete the Spelling Bee.

In honor of the 10 year anniversary, Bob Harder, W0BH added Yellow Brick Road to the spelling bee. The other words to spell out to complete the challenge were KANSAS, QSOPARTY, SUNFLOWER. The Kansas KP has a very nice certificate. The stamps you earn by

completing the spelling bee words; here is a picture from the 2014 QP:



Dave WN4AFP invited club members who are interested in working on their CW skill to check out LCWO.net Dave set up a group for the SFCG on this site, for more info, please contact Dave and he will be happy to help. Dave's current speed is 52 WPM....

Tom W1TEF has shared the following Special Event info with the club:

*Via CWOps and ARRL: Enigma Special Event*

"The 4th running of the Enigma Reloaded operating event will get under way on September 22 and continue until September 30. Sponsored by the [A.R.I. Fidenza Radio Club](#), the event celebrates the history of the Enigma cipher machine and its crucial role in World War II, as well as the individuals who developed the device and contributed to its success.

Enigma Event 2017 takes place in two stages: From September 22 until September 29, so-called Activator Stations will be on the air for others to work. On September 30, Activator Stations will exchange predefined CW messages previously encrypted by a real or emulated Enigma machine."

## **Past Contests:**

### **Alabama QSO Party**

WN4AFP SOCW LP 1,120 points

### **CW Open (1200Z-1559Z)**

N4IQ Single Op HP S02R 42,966 points

### **(2000Z-2359Z)**

N4IQ Single Op S02R HP 36,490 points

**(0000Z-0359Z)**

N4IQ Single Op S02R HP 51,156 points

WN4AFP Single Op LP 9,600 points

**Ohio QSO Party**

WN4AFP Single Op LP 4,365 points

W4SLT Single Op HP 2,014 points

**SCC RTTY Championship**

K70M SOAB HP 11,773 points

KG4IGC SOAB LP 3,990 points

**Russian RTTY WW Contest**

K70M SOHP 14,985 points

**NAQP SSB**

WN4AFP SOLP 3,666 points

**SARTG WW RTTY**

N4IQ S02R SOAB HP

K70M SOAB HP 1715 points

## WAE DX Contest, CW

K7OM SOHP 2,565 points

WN4AFP SOLP 928 points

## SFOTA:

Current Leaderboard

### 2018 OVERALL STANDINGS

	CALL	Contests	CW QSO'S	SSB QSO'S	DIGITAL QSO'S	RTTY QSO'S	TOTAL QSO'S
1)	N4IQ	96	8443	289	0	3952	12684
2)	K7OM	34	1750	596	16	3409	5771
3)	WN4AFP	69	3233	957	0	0	4190
4)	NI7R	13	1667	183	0	584	2434
5)	KG4IGC	18	547	927	0	722	2196
6)	N4XL	2	380	1037	0	0	1417
7)	NJ4F	7	437	20	0	887	1344
8)	WU0B	4	0	800	0	302	1102
9)	KG6MC	4	463	621	0	0	1084
10)	KS4YX	4	229	0	0	692	921
11)	W4SLT	6	0	581	0	0	581
12)	NE4EA	5	222	46	0	0	268
13)	AJ4UQ	6	1	132	1	119	253

### 2018 INDIVIDUAL MODE STANDINGS

CALL	CW QSO'S	CALL	SSB QSO'S	CALL	DIGITAL QSO'S	CALL	RTTY QSO'S
N4IQ	8443	N4XL	1037	K7OM	16	N4IQ	3952
WN4AFP	3233	WN4AFP	957	AJ4UQ	1	K7OM	3409
K7OM	1750	KG4IGC	927			NJ4F	887
NI7R	1667	WU0B	800			KG4IGC	722
KG4IGC	547	KG6MC	621			KS4YX	692
KG6MC	463	K7OM	596			NI7R	584
NJ4F	437	W4SLT	581			WU0B	302
N4XL	380	N4IQ	289			AJ4UQ	119
KS4YX	229	NI7R	183				
NE4EA	222	AJ4UQ	132				
AJ4UQ	1	NE4EA	46				
		NJ4F	20				

## Upcoming Contests:

### **HF CONTESTS**

[CWops Mini-CWT Test](#), Sep 5, 1300z to Sep 5, 1400z, Sep 5, 1900z to Sep 5, 2000z, Sep 6, 0300z to Sep 6, 0400z; CW; Bands: 160, 80, 40, 20, 15, 10m; Member: Name + Member No., non-Member: Name + (state/province/country); Logs due: September 8.

[NRAU 10m Activity Contest](#), Sep 6, 1700z to Sep 6, 1800z (CW), Sep 6, 1800z to Sep 6, 1900z (SSB), Sep 6, 1900z to Sep 6, 2000z (FM), Sep 6, 2000z to Sep 6, 2100z (Dig); CW, SSB, FM, Digital; Bands: 10m Only; RS(T) + 6-character grid square; Logs due: September 20.

[SKCC Sprint Europe](#), Sep 6, 1900z to Sep 6, 2100z; CW; Bands: 160, 80, 40, 20, 15, 10m; RST + (state/province/country) + Name + (SKCC No./power); Logs due: September 13.

[NCCC RTTY Sprint](#), Sep 7, 0145z to Sep 7, 0215z; RTTY; Bands: (see rules); Serial No. + Name + QTH; Logs due: September 9.

[NCCC Sprint Ladder](#), Sep 7, 0230z to Sep 7, 0300z; CW; Bands: 160, 80, 40, 20, 15, 10, **6m**; Serial No. + Name + QTH; Logs due: September 9.

[Kulikovo Polye Contest](#), Sep 8, 0000z to Sep 8, 2359z; CW; Bands: 20m Only; KP: RST + "KP", non-KP: RST + Serial No.; Logs due: September 23.

[WAE DX Contest, SSB](#), Sep 8, 0000z to Sep 9, 2359z; SSB; Bands: 80, 40, 20, 15, 10m; RS + Serial No.; Logs due: September 24.

[SARL Field Day Contest](#), Sep 8, 1000z to Sep 9, 1000z; CW, SSB, Digital; Bands: 160, 80, 40, 20, 15, 10m; RS(T) + Number of transmitters + Category (see rules) + Province (or "DX"); Logs due: September 16.

[SKCC Weekend Sprintathon](#), Sep 8, 1200z to Sep 10, 0000z; CW; Bands: 160, 80, 40, 20, 15, 10, **6m**; RST + (state/province/country) + Name + (SKCC No./"NONE"); Logs due: September 16.

[Ohio State Parks on the Air](#), Sep 8, 1400z to Sep 8, 2200z; SSB; Bands: 80, 40, 20, 15, 10m; OH Park: park abbreviation, OH: "Ohio", W/VE: (state/province), DX: "DX"; Logs due: September 22.

[Russian Cup Digital Contest](#), Sep 8, 1500z to Sep 8, 1859z, Sep 9, 0600z to Sep 9, 0959z; RTTY; Bands: 80, 40, 20, 15, 10m; Serial No. + 4-character grid square; Logs due: September 19.

[North American Sprint, CW](#), Sep 9, 0000z to Sep 9, 0400z; CW; Bands: 80, 40, 20m; [other station's call] + [your call] + [serial no.] + [your name] + [your state/province/country]; Logs due: September 16.

[Swiss HTC QRP Sprint](#), Sep 9, 1300z to Sep 9, 1900z; CW; Bands: 80, 40, 20m; RST + "/" + Class + "/" + (kanton, province, etc.) + "/" + first name; Logs due: see rules.

[4 States QRP Group Second Sunday Sprint](#), Sep 10, 0000z to Sep 10, 0200z; CW, SSB; Bands: 160, 80, 40, 20, 15, 10m; Member: RS(T) + (State/Province/Country) + Member No., Non-member: RS(T) + (State/Province/Country) + Power; Logs due: September 12.



[RSGB 80m Autumn Series, SSB](#), Sep 10, 1900z to Sep 10, 2030z; SSB; Bands: 80m Only; [other station's call] + [your call] + [serial no.] + [your name]; Logs due: September 13.

[Phone Fray](#), Sep 12, 0230z to Sep 12, 0300z; SSB; Bands: 160, 80, 40, 20, 15m; NA: Name + (state/province/country), non-NA: Name; Logs due: September 14.

[CWops Mini-CWT Test](#), Sep 12, 1300z to Sep 12, 1400z, Sep 12, 1900z to Sep 12, 2000z, Sep 13, 0300z to Sep 13, 0400z; CW; Bands: 160, 80, 40, 20, 15, 10m; Member: Name + Member No., non-Member: Name + (state/province/country); Logs due: September 15.

[NCCC RTTY Sprint](#), Sep 14, 0145z to Sep 14, 0215z; RTTY; Bands: (see rules); Serial No. + Name + QTH; Logs due: September 16.

[NCCC Sprint Ladder](#), Sep 14, 0230z to Sep 14, 0300z; CW; Bands: 160, 80, 40, 20, 15, 10, 6m; Serial No. + Name + QTH; Logs due: September 16.

[All Africa International DX Contest](#), Sep 15, 1200z to Sep 16, 1200z; CW, SSB, RTTY; Bands: 160, 80, 40, 20, 15, 10m; RS(T) + Serial No.; Logs due: October 1.

[Scandinavian Activity Contest, CW](#), Sep 15, 1200z to Sep 16, 1200z; CW; Bands: 80, 40, 20, 15, 10m; RST + Serial No.; Logs due: September 21.

[SRT HF Contest SSB](#), Sep 15, 1300z to Sep 16, 1300z; SSB; Bands: 160, 80, 40, 20, 15, 10m; RS + CQ Zone; Logs due: see rules.

[Iowa QSO Party](#), Sep 15, 1400z to Sep 16, 0200z; CW, Phone, Digital; Bands: All, except WARC and 60m; IA: RS(T) + County, non-IA: RS(T) + (state/province/"DX"); Logs due: October 16.

[New Hampshire QSO Party](#), Sep 15, 1600z to Sep 16, 0400z, Sep 16, 1600z to Sep 16, 2200z; CW/Digital, Phone; Bands: All, except WARC; NH: RS(T) + county, non-NH W/VE: RS(T) + (state/province), DX: RS(T) + "DX"; Logs due: October 31.

[Washington State Salmon Run](#), Sep 15, 1600z to Sep 16, 0700z, Sep 16, 1600z to Sep 17, 0000z; CW, Phone, Digital; Bands: 160, 80, 40, 20, 15, 10, **6, 2m**; WA: RS(T) + County, non-WA: RS(T) + (state/province/country); Logs due: September 30.

[New Jersey QSO Party](#), Sep 15, 1600z to Sep 16, 0359z, Sep 16, 1400z to Sep 16, 2000z; CW, Phone; Bands: 80, 40, 20, 15, 10m; NJ: RS(T) + county, non-NJ: RS(T) + (state/province/"DX"); Logs due: October 1.

[QRP Afield](#), Sep 15, 1600z to Sep 15, 2200z; All; Bands: 160, 80, 40, 20, 15, 10m; RS(T) + (state/province/country) + (power or NE QRP No.); Logs due: October 15.

[Feld Hell Sprint](#), Sep 15, 1800z to Sep 15, 1959z; Feld Hell; Bands: 160, 80, 40, 15, 10, **6m**; (see rules); Logs due: September 19.

[North American Sprint, RTTY](#), Sep 16, 0000z to Sep 16, 0400z; RTTY; Bands: 80, 40, 20m; [other station's call] + [your call] + [serial no.] + [your name] + [your state/DC/province/country]; Logs due: September 23.

[BARTG Sprint 75](#), Sep 16, 1700z to Sep 16, 2059z; 75 Baud RTTY;

Bands: 80, 40, 20, 15, 10m; Serial No.; Logs due: September 23.

[Run for the Bacon QRP Contest](#), Sep 17, 0100z to Sep 17, 0300z; CW; Bands: 160, 80, 40, 20, 15, 10m; RST + (state/province/country) + (Member No./power); Logs due: September 23.

[Phone Fray](#), Sep 19, 0230z to Sep 19, 0300z; SSB; Bands: 160, 80, 40, 20, 15m; NA: Name + (state/province/country), non-NA: Name; Logs due: September 21.

[CWops Mini-CWT Test](#), Sep 19, 1300z to Sep 19, 1400z, Sep 19, 1900z to Sep 19, 2000z, Sep 20, 0300z to Sep 20, 0400z; CW; Bands: 160, 80, 40, 20, 15, 10m; Member: Name + Member No., non-Member: Name + (state/province/country); Logs due: September 22.

[RSGB 80m Autumn Series, CW](#), Sep 19, 1900z to Sep 19, 2030z; CW; Bands: 80m Only; [other station's call] + [your call] + [serial no.] + [your name]; Logs due: September 22.

## **VHF+ CONTESTS**

[ARRL September VHF Contest](#), Sep 8, 1800z to Sep 10, 0300z; All; Bands: 50 MHz and up; 4-character grid square; Logs due: September 20.

[SARL VHF/UHF Analogue Contest](#), Sep 14, 1600z to Sep 16, 1000z; Analog (CW/SSB/AM/FM); Bands: 50 MHz, 70 MHz, 144 MHz, 432 MHz, 1296 MHz; RS(T) + 6-character grid locator; Logs due: December 3.

[ARRL 10 GHz and Up Contest](#), Sep 15, 0600 (local) to Sep 17, 0000 (local); Any; Bands: 10 GHz to light; 6-Character Maidenhead Locator; Logs due: October 16.

[SARL VHF/UHF Digital Contest](#), Sep 15, 1000z to Sep 16, 1000z; Digital; Bands: 50 MHz, 70 MHz, 144 MHz, 432 MHz, 1296 MHz; RST + 6-character grid locator; Logs due: October 8.

[144 MHz Fall Sprint](#), Sep 17, 1900z to Sep 17, 2300z; not specified; Bands: 2m Only; 4-character grid square; Logs due: October 1.

Also, see [Feld Hell Sprint](#), [Washington State Salmon Run](#), [SKCC Weekend Sprintathon](#), [NCCC Sprint Ladder](#), [New Hampshire QSO Party](#), [Iowa QSO Party](#), above.

## **From QST:**

### **2018 ARRL International DX Contest Results (March 3-4<sup>th</sup> 2018)**

#### **Affiliated Club Competition:**

Swamp Fox Contest Group (#34) 360,516 points 9 entries {*p. 87 Sept. 2018 QST*}

#### **Top 10:**

Single Op 15 meters WN4AFP 4,698 points p.88 {*Sept 2018 QST*}