

County Hunter News

April 1, 2017
Volume 13 Issue 4

Welcome to the On-Line County Hunter News, a monthly publication for those interested in ham radio county hunting, with an orientation toward CW operation.

Contributions of articles, stories, letters, and pictures to the editor are welcomed, and may be included in future issues at the editor's discretion.

The County Hunter News will provide you with interesting, thought provoking articles, articles of county hunting history, or about county hunters or events, ham radio or electronics history, general ham radio interest, and provide news of upcoming operating events.

We hope you will enjoy the County Hunter News. Feel free to forward, or provide links. Permission is given for copying or quoting in part or all provided credit is given to the CHNews and to the author of article.

CW County Hunter Nets run on 14.0565, 10.122.5, and 7056.5, with activity occasionally on 3556.5 KHz. Also, there is SSB activity now is on 'friendly net' 7188 KHz. The cw folks are now pioneering 17M operation on 18.0915. (21.0565, 24.9155, and 28.0565 when sunspots better). Look around 18136 or for occasional 17M SSB runs usually after the run on 20M SSB. (21.336 and 28.336)

You can see live spots of county hunter activity at ch.W6RK.com

For information on county hunting, check out the following resources:

The USACA award is sponsored by CQ Magazine. Rules and information are here:

<http://countyhunter.com/cq.htm>

For general information FAQ on County Hunting, check out:

<http://countyhunter.com/whatis.htm>

MARAC sponsors an award program for many other county hunting awards. You can

find information on these awards and the rules at:

http://countyhunter.com/marac_information_package.htm

The CW net procedure is written up at:

<http://www.wd3p.net/ch/netproc/netproc.htm>

There is a lot more information at www.countyhunter.com . Please check it out.

Back issues of the County Hunter News are available at www.CHNewsonline.com

Want county lines on your Garmin GPS?

<http://pages.suddenlink.net/w4ydy/hamlinks.html#County>

Download the file to a flash card that fits in your GPS unit, turn it on, and the county lines should appear!

De N4CD, Editor (email: telegraphy@verizon.net)

Notes from the Editor

1) N4CD Rumblings

March was a strange month – a bit different for me. Most weekends had something going on locally which reduced the ability to go out on trips. Hamfest in Irving, Annual National Accordion Convention, Vintage Radio Club Spring Auction, and more. Kept me fairly close to home most of the time. Even missed the Belton swapfest – two events were happening at the same time.

The second week of March the roof shingles on the house were replaced – damaged badly last year by a hail storm and just getting around to getting it fixed. Wow - \$22,000 to replace the roof, gutters and downspouts, power vents, ventilators, and power wash the wood fence and re-stain it. Insurance paid for it all. Texas has high house insurance rates – for such events that seem to occur on a significant number of houses about every 20 years – and that is just a matter of luck. Some folks get hit again in 3 years after a roof replacement.

The 30 and 40M inverted vee - dipoles that go over the roof had to come down and I was off the air for about 14 days before getting them back up again. Dang...had the 20m vertical but that band is mighty flaky these days. In the WI QSO party, I worked all of 3 stations on 20M – usually it's 30 or 40 easily. The band just wasn't there!

2) Parks on the Air

As a continuation of the very successful NPOTA program, some of the county hunters and former NPOTA park 'activators' are now involved in the World Wide Flora and Fauna program. You'll see spots for N9JF, KA2LHO, N4CD, and other familiar county hunter calls – as well as Norm, N9MM, KD0IRW, KC3RW/KB3WAV, and a handful of others from the NPOTA days going to the state park sites. They are all in counties, and when you see a spot, please give them a contact – whether you 'need' it or not. Same for other special event stations you come across. With the current band conditions, they welcome contacts for the effort they have put out to activate the park or special event.

Mike, W0MU, and Bob, KA9JAC, are volunteer regional reps – who upload the mobile logs to the WWFF database – and are very busy chasing parks on the air as well.

3) Sunspots

The first half of March proceeded with many (most) days with ZERO sunspots! However, the A and K index varied all over the place. Mid month, we had a sunspot group – and the A index shot up to 26 and K of 4 – no bargain. This month we include a few sunspot cycle articles.

4) QSO Party Season

We're into the middle of the Spring QSO Party season – with half a dozen events this month from MO and MS, to WI and FL, NE, ND GA – enough to keep anyone busy. Hundreds of counties up for grabs. FL, MI GA and WI are always great with many mobiles. Let's hope the bands/weather cooperates!

In addition, TX and FL have State Parks on the Air weekend scheduled in April.

Mobile Activity in March

The month started with:

Fred, K0FG, continued his multi-month trip – now in NM – headed to AZ - and circling up around into CO, NE, KS, and into MO. At the end, he was on the road for 78 days heading from FL to MO the 'county hunter way'.

Jim, N9JF, was active many days – putting out counties and parks for the World Wide Flora and Fauna Program. Ran parks in GA, VA, too. Noted in IN as well.

A few Nebraska NE/150 Special Event stations were spotted

Ray, WB0PYF was out on several trips in MO during the month

Jerry, W0GXQ, headed down to NE – and did a couple day trip to South Dakota with Mike, NF0N.

W8OP was putting out counties in WV

Mike, WU3H, headed out from CO – through KS into OK – ran on 30m CW.

Bob, N8KIE, headed over to HI to put out the county and made a lot of folks happy.

Several parks (counties) were on the air from KC3RW, KB3WAV, N9MM, KD0IRW, KA2LHO, and others.

N4UP was active in NC putting them out.

Kerry, W4SIG, made a nice run in western KY filling in many needs.

N7JPF was noted in Park, WY

K0DEQ headed to AR to run many there. Had antenna problem and cut trip short.

N7IV left ND- headed across MN and WI running them all

Several QSO Parties brought about lots of activities with county hunters like K5YAA, NU0Q, and other part timers like Bob, W0BH in OK and NO5W, Chuck, in LA. W9MSE was out in the WI QSO Party. . Full reports state by state on the QSO parties later in this issue.

KL7/VE7ACW expedition was on for 10 days from an IOTA island in First District, AK – relatively rare one. Many people caught up with them.

Ron, N5MLP, left south TX and headed out on a multi-week trip to OK, KS, AR, MO on a quest to fill in 500 transmitted counties (with at least 3 contacts on one band, and 3 on other bands, plus a MP holder) to fulfill half the requirements for Mobile Diamond Award. With the flaky conditions, it was a challenge at times to get 3 on 20/17 meters.

Bill, NU0Q, active in running counties all over NE.

KB0BA/N0XYL were spotted in IA counties

K5YAA Headed back through MO to OK

N4UP spotted in many counties in NC and into SC and then into GA.

Kraig, KA2LHO, finished running the FL panhandle – all counties on his quest to run all of FL. Stopped by 4 parks along the way, too

Ed, K8ZZ, noted in KS and MO putting out the counties

Kerry W4SIG returned to KY and put out many in the western/southern part.

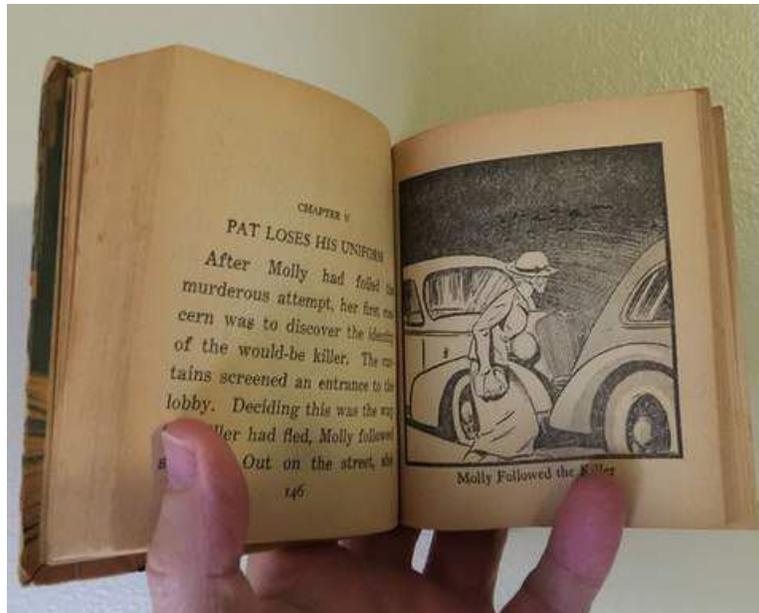
Book Review of the Month

Radio Patrol and Big Dan's Mobsters



After finishing the first “Better Little Books” we are off on a sequel to the first one. Big Dan and his mobsters are on the loose. With a crooked and 'paid for' DA, Big Dan is out on bail on the murder rap from the last book. He's out for revenge

This is a Dick Tracy type story in the 'small book' format – about 2 1/4 inches by 4 inches, with drawings on one page and text on the other. Published in 1937. There's not a whole lot of radio content. In the whole book, they use the radio exactly once. What a shame.



Pat, the Radio Patrolman who caught him the first time, and Molly, who went undercover to get the evidence for the murder rap, are up for 'elimination' as witnesses. Against the advice of his 'lawyer', Big Dan makes several attempts to kill Pat in 'accidents' that fail. Next up is framing him, so he is suspended from the force, and therefore he won't make a 'credible' witness.

Molly gets kidnapped, but through the 'youth network' of friends of Molly and those opposed to the hoodlums, the crooks are caught at the hideout, including Big Dan and his lawyer, and all ends well. One radio call gets the good guys to the site.

Back then, the bad guys could listen in to the radio – and that pretty much continued up until a few years ago – now most police and public safety communications are 'digital' and a lot harder to copy on a simple scanner.

Interesting little book from 75 years ago – and how the times have changed in technology, but not in crime.

On the Road with Norm, N9MM

Donna (XYL) and I love to go on “Great Adventures” so this time we headed to Big Bend Country in southwest Texas. On the way south from our home in Colorado Springs, we made a stop in Roswell, New Mexico.



N9MM – Motorhome and the Jeep

Roswell is the site of the 1947 crash of a UFO in a nearby field. If you don't believe in UFOs, you should visit their International UFO Museum and Research Center. You will be convinced like I was. Hi Hi. That evening I had a problematic attempt to activate Bottomless Lake State Park (KFF-2687) with only 16 QSOs on 40m. The problem turned out to be failed tuning of the vertical causing the K3 to act up. I don't know why, but a changed vertical tuning made the problem go away. Next day we traveled to Ft Davis TX.

Ft Davis is home to Historic Ft Davis (KFF-0816) which is a partially restored fort dating back to the late 1800s. It was built to protect the settlers and trade and was the most westerly fort in a chain that ran across south Texas. Most distinctive is that it is a fort without walls. My first day's operation there did not go well. Within an hour winds picked up, and repeatedly blew over my antenna. Winds that day peaked with gust at 60 mph. My poor little vertical stood no chance against them, so QRT. I did scout out nearby Davis Mountains State Park (KFF-3003), and that evening we went up to McDonald Observatory for a tour and star party.

On Day 2 at Ft Davis, I opened operations early on a mountain outlook in Davis Mountains State Park which had a very nice drop off to the east. That proved to be fun with calm winds. A nice European opening, aided by the QTH, allowed me to log a good number of DX QSOs which is always enjoyable to my inter-DXer. I finished the day by returning to Historic Ft Davis to take advantage of the more favorable weather conditions.

Next up was Big Bend Ranch State Park (KFF-2988) with 300,000 acres is big enough to hold all of rest of the Texas State Parks and have lots of room left over. Think really BIG. It is just west of Big Bend National Park, which is even bigger with 800,000 acres. Both are part of the Chihuahaun Desert extending north from Mexico. It is said that Big Bend National Park (KFF-0006) is the most isolated area in the U.S. excepting Alaska. We stayed at the tiny town of Lajatis located between the two parks and uniquely has a goat for its mayor. The closest city is 100 miles away (6,000 population) and the closest Walmart is 150 miles away. Isolated!

My operating QTH in Big Bend Ranch was a Visitors Center about 2 miles east of Lajatis. This turned out to be a good QTH mostly flat and with internet access. Most of my operations from Big Bend National Park was just inside the west entrance which was also relatively flat with internet. One day after a hike into Pine Canyon, I operated nearby in a designated campsite as we stopped for lunch which was mountainous to the west but with a good take off angle east. No internet which meant a slow rate.

On our way back to Colorado, we made a stop at Palo Duro Canyon. Again think BIG. 120 miles long, 20 miles wide, and 800 feet deep. There are two state parks in the canyon, but a large part of the canyon is privately owned. During the late 1800s Charles Goodnight ranched 6 million acres of the canyon.



N9MM Vertical Antenna Set-Up

Much to my surprise I was able to log an eyeball QSO in the Palo Duro Canyon State Park (KFF-3046) with Bob, N4CD. Oh, and we exchanged intra-park QSOs too. What a great opportunity!

One of the nice attributes of KFF is its affiliation with WWFF and the international hunters that brings. I think my favorite part of KFF is working the DX hunters, and I'm grateful for the European operators that took the trouble to search out my meager signal and make QSOs. Two guys, ON4VT and IK1GPG, worked me in five locations, and several more managed four. Nice hunting!

QSO Stats:

Location QSO Total Countries

Bottomless Lake KFF-2687 16 3

Fort Davis KFF-0816 115 14

Davis Mountains KFF-3003 108 13

Big Bend Ranch KFF-2988 241 11

Big Bend NP KFF-0006 110 10

Palo Duro Canyon KFF-3046 213 12

International Crystal – Out of Business

From the ARRL Newsletter of 3/17/17

International Crystal Manufacturing (ICM) of Oklahoma City has announced that it will be going out of business, probably at the end of May. Royden Freeland Jr., W5EMH, son of the company's founder, posted a letter this week on the ICM website.

“We will be honoring all orders that we have already taken and will be able to fill a limited amount of new orders dependent upon raw materials available,” Freeland said. “We would like to thank you for your past business. The success of ICM over the previous 66 years has been largely due to its amazing customer base.”

International Crystal produces RF control devices — quartz crystals, oscillators, QCM crystals, filters, TCXOs/VCTCXOs, and precision crystals.

Royden R. Freeland Sr. founded International Crystal in 1950, at first operating out of his garage. One of his first contracts was to produce crystals for Collins Radio. The elder Freeland and his wife died in a 1978 air crash, and his son took over the company, which expanded into the production of other electronics in the 1980s.

In the 1990s, though, it sold off some of its equipment and distribution business to concentrate on its core enterprise — the manufacture of crystal and oscillator products.

The announcement caught some manufacturers off guard, and they are seeking to source the products they had been buying from ICM, one of the few remaining US-based manufacturer of crystal products. Radio amateurs requiring crystals for projects or as replacement parts for older equipment also will have to look elsewhere.

- - - -

de N4CD

For many years, if you needed a special crystal to replace something in your older rig, International would custom make it – to the original manufacturer's spec. Back in the day, many ham rigs were full of crystals for the various oscillators used in receivers and transmitters – often one per band – plus the IF crystal filters (up to 8 crystals). Now, in ham rigs, there might be one crystal for the time base – and everything else is done in software.

It's sad to see it go away – there's still a need for tens of thousands of crystals a year!

On the Road with N4CD

March has a few hamfests here in TX. On Saturday the 4th I head over to the Irving TX hamfest. It's a small one and you usually don't find much – but – if you don't go, then someone tells you of a goodie you missed. So it was 30.5 miles and 45 minutes to get over to the hamfest held in a Bingo Hall – probably 50 tables. Weather cloudy, warm 65 deg. Rain expected later today. No mobile activity planned today – big ARRL DX SSB contest going on, too.

I wandered around an hour and met a few other folks from radio clubs there. Less and less 'older stuff' shows up – and fewer and fewer collect it. There were a half dozen Hallicrafters receivers – sitting with no buyer interest. One, an S-107, tugged at my heart – it was the first superhet receiver I bought in the late '50s when I was a SWL – but I really really didn't need it. There were a couple SX-99, SX-100s for sale. They were probably going to sit all day. Another table was full of 50s and 60s rigs – Hammarlund, Johnson, Nationals – but as noted before from the last auction at the Houston AWA event – prices on those are going down and down. Even 'restored' they don't bring in much money. Who has the space on the operating bench for old boat anchors? Or collects 'one of each' model these days? They were good radios 'in the

day' but those days are now 'way in the past'. Probably most hams these days don't own a single piece of equipment with tubes in it. Heck, most people now were born after 1985.

There's something called the 'collector curve'. People tend to start collecting in their 40s and 50s, but really add to collections in their 50s and early 60s. They tend to concentrate of what they knew as kids or teenagers. For cars – not long ago, it was 50s cars that were really in demand. '57 Chevy – early 1950 Fords....etc. Any car of that era would probably find a buyer. Then those folks hit the late 60s and 70s – and their collecting days started to wane, and they started selling their collections – but now to fewer and fewer buyers. The peak had passed.

Now, it was a slightly younger generation – that grew up in the 1960s that were seriously collecting. Their kids were out of college – and they had the resources to buy their childhood dream cars – '63 Corvette – and the muscle cars of the day – Plymouth Road Runner (Hemi?) and Dodge Charger and Challenger, Pontiac GTO, Firebird, Chevelle, etc. Cars with big V8's in them that got 8 mpg, made lots of noise, and were fast for the times. The curve moved up 10 years. That will go on for a decade, then they too will look at downsizing. If they make it to 80s, they're likely not driving a Hemi on the way to the corner grocery/drug store to pick up some milk and a prescription....or park in the Assisted Living parking lot. Hi Hi. Remember those cars need an oil change every 3000 miles – go through tires and shock absorbers and everything else. You've got to be willing to work on 60 year old cars to keep them running – and not many are these days.

I'm not sure what folks who grew up in the 1970s will collect – I don't remember a whole lot of memorable cars.

The same is true of ham gear – for a while, those who got their start in the late 50s and early 60s were buying up the rigs of the day - maybe the ones they wish they had when they got their first license. Eico- Heathkit – Johnson – KnightKits – Harvey Wells – National – Hammarlund - Drake - Eldico,and of course, Collins. Likely Collins will continue to be in demand – it was the Cadillac of the day – but the demand for the other rigs is dropping like a rock. Rigs are flooding the flea markets – from those now downsizing as they hit the 70 year old mark.

One fellow had a Heathkit DX-40 and VFO. Had a price of \$100 on it, but said, please make me an offer. The XYL said I can't bring it back home! Probably would have taken \$50, but I just didn't need a DX-40 in nice shape. For you newbies, that was a tube type radio that would run close to the 75w input level- crystal controlled Novice

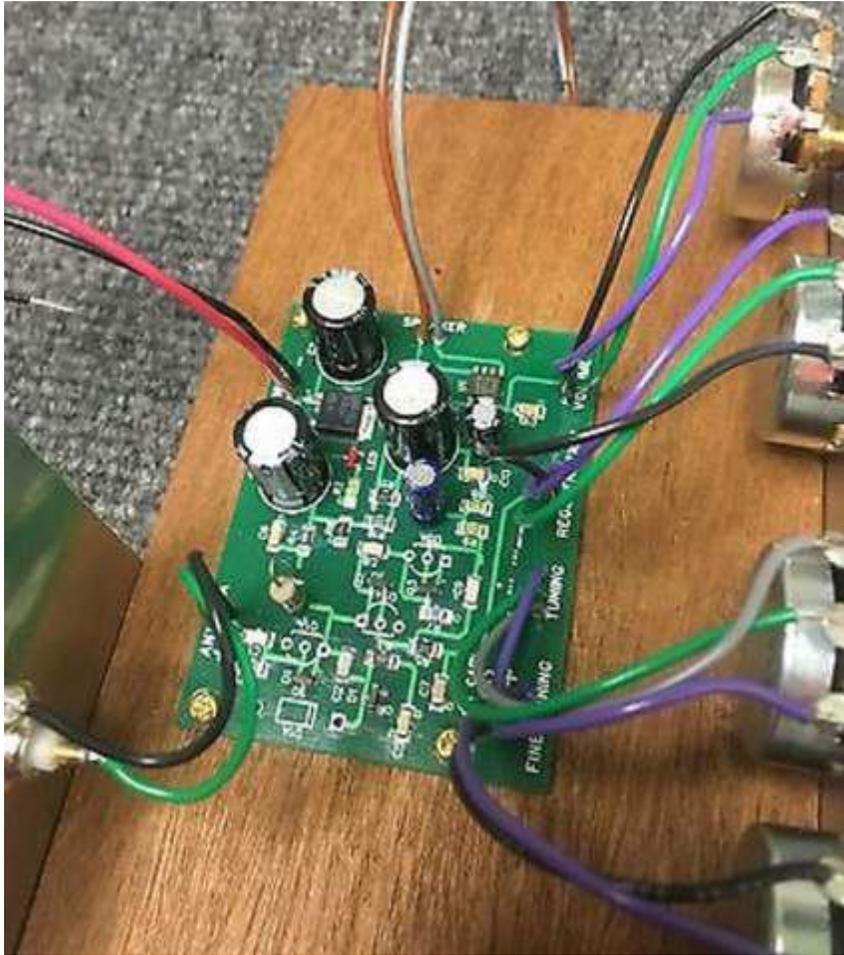
oriented transmitted – rock-bound unless you had the external VFO – 80,40,20,15, and 10m bands. It featured a Pi-network output that would load a wide variety of antenna types. Back then, it was a very decent rig for novices starting out in the 60s. Other common rigs of the day included the Knight Kit T-60, various Johnson rigs, Harvey Wells, and homebrew handbook designs.

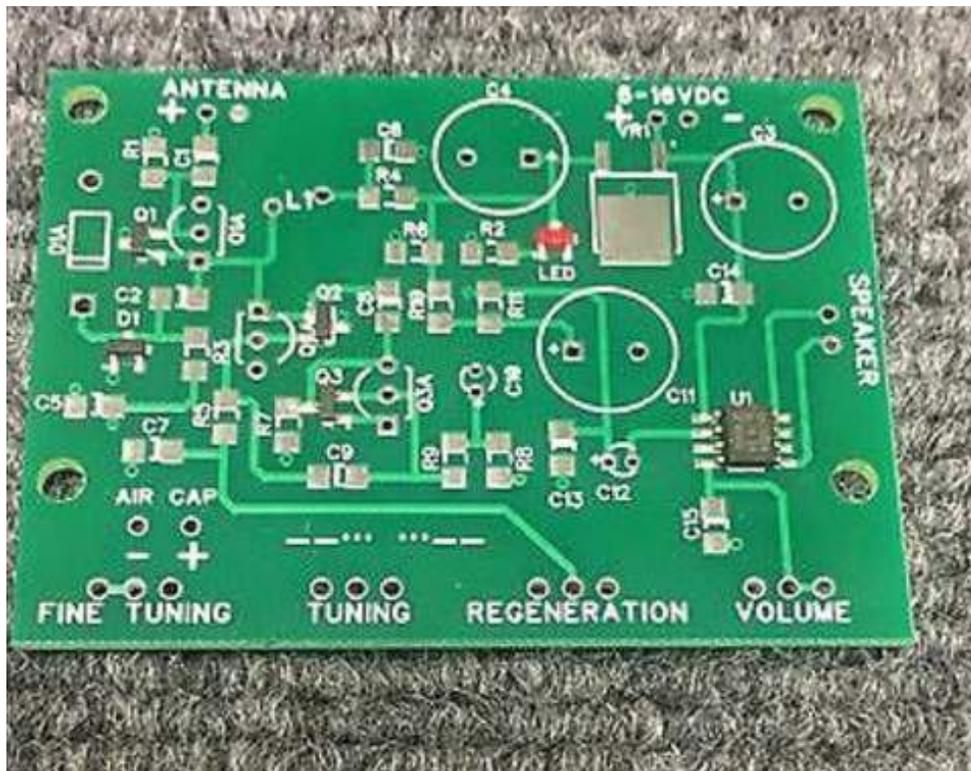
He also had a Heathkit Twoer- a simple 'lunchbox' VHF AM rig from the late 50s, with a dynamotor mobile supply too.....that, these days, isn't worth \$10. Who needs a couple watt out crystal controlled AM rig, with super regen receiver as wide as a barn door? I doubt he could get even \$5. Well, he has to get rid of it. Wife said it isn't coming home. Hi hi In the 1950s, the FCC created the Technician license that let folks get on 6m and 2m with only a 5 wpm code test. Tens of thousands jumped in and there was loads on 6 and 2m AM with inexpensive rigs. Repeaters didn't exist for hams then. (In a few radio oriented cities, like Chicago(Motorola), Syracuse and Schenectady, NY and Lynchburg, VA (GE) – a few experimental repeaters popped up – some AM, some using converted commercial equipment but 99.99% of activity was AM. There were tens of thousands who went mobile and 'hill topping' on nearby high points to see what they could work. (N4CD included).

I bought a Yaesu log book for a buck and that was about it. Headed back on home. I resisted the urge to bring home some other radios. No regens were up for sale.

On the Trail of Regens

A very nice 'kit' radio using SMT parts showed up on eBay for \$20. You get a PC board with the multi-pin devices already soldered in, and you have to mount 22 SMT (surface mount technology) parts along with a few other wire lead ones to get a working regen receiver. Here's a a pic or two of the final board assembled and during assembly.





Surface Mount parts mounted

The description on Ebay was:

A great performing regenerative receiver kit based on this design

<https://circuitsalad.com/category/rf/page/4/>

I used the "version 2" design but substituted a pot with a varactor for the air cap so there are no hand capacitance issues to deal with. Uses 1206 size SMT parts with six smaller parts pre-mounted as shown in first photo. You install the 22 remaining SMT parts and the 6 through hole parts along with the externally wired pots. Second photo shows all SMT parts mounted. All parts are included except for user supplied speaker, 9-16V power source, and an antenna. Photo of parts does not show two of the four pots, but they are all included. Frequency coverage is about 5660-10040 kHz with the supplied 10uH inductor, or 9660-16680 kHz with the supplied 3.3uH inductor. For reference I included a photo of a completed radio showing the PCB mounted on a piece of wood with a makeshift front panel. The radio works well connected to the horizontal loop on

my roof. Received BBC, Radio New Zealand, Radio Habana Cuba, etc. If you do not want to assemble the SMT parts let me know and I will do that for you at no extra charge. Free shipping via First Class Mail.

From the web page – the designer of the circuit wrote:'

I was inspired by the circuit design of the TEN TEC regenerative radio kit. I used some of the same ideas, but changed the design to better match my design criteria. In this design, I had eight important design objectives:

Simplicity – this type of radio should not be complicated and I have seen designs on the web that may perform well, but seem unnecessarily complicated.

Tuning/fine tuning – I use a cheap poly variable for main tuning and a junk box rectifier as varactor for fine tuning.

No special inductor required – I have tried all sorts of junk box inductors and they all work great. With this design, no tapped coils or tickler windings are required. This design could easily be made into a multi-band radio

Extremely smooth and stable Regeneration control – I adjust a DC bias point condition instead of RF Feedback to control regeneration and the performance is excellent. There is no hysteresis or abrupt transition from regeneration to oscillation.

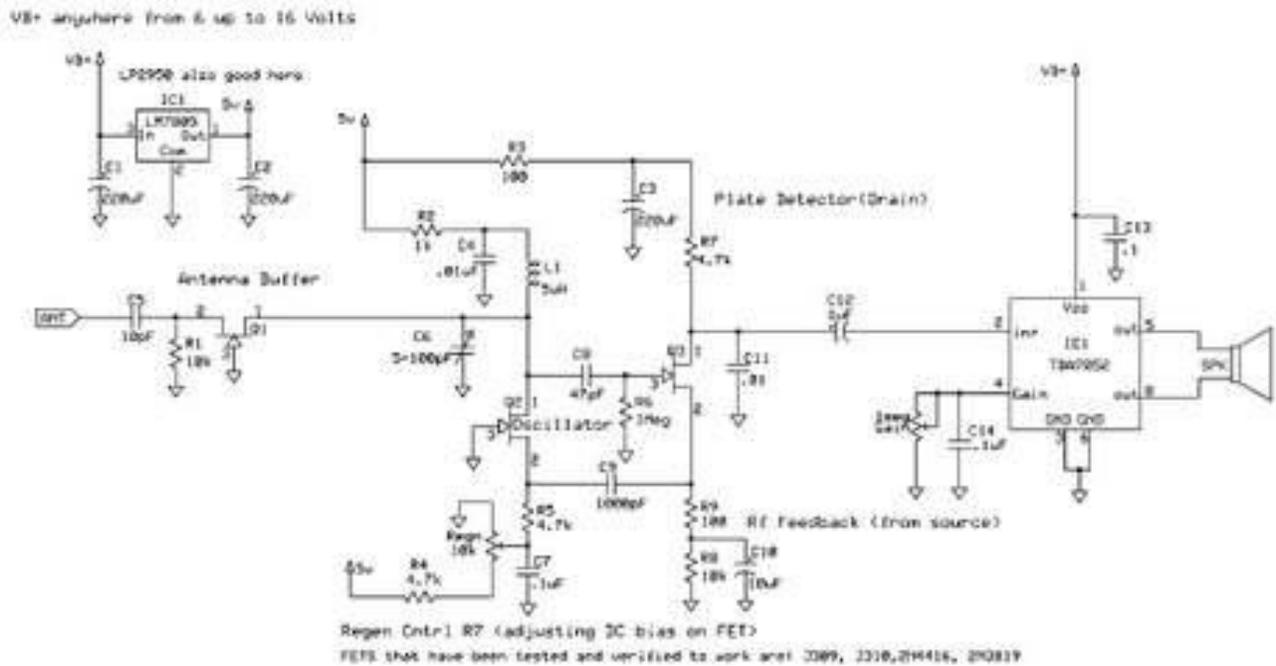
Ample Audio Gain with no motorboating or instability – I stayed away from the LM386(which could be used) and chose a TPA301 amplifier IC – which give excellent results.

Antenna Isolation – This is achieved with a simple grounded gate input stage which shares the LC tank with the oscillator.

Excellent sensitivity – This design is the best performing Regen I have ever built
No critical adjustments and easily repeatable results – I have built this circuit now three times with different inductors, for different bands and with different JFET device types on bread-boards, etc. The results have all been the same and I have only had to make minor tweaks to optimize performance for different JFET types and significantly higher or lower frequency bands. The radio currently tunes 7-11MHz.

The basic paradigm of this design is to break up the traditional oscillating detector into a separated regenerative amplifier and detector circuit.

The detector is a “plate detector”, where RF is fed back to the Amplifier via a partially RF decoupled source (normally bypassed all the way for RF when used as a detector).



If you were to look inside your new ham rigs (IC7300, KX3, K3, etc) you'll find them stuffed with SMTs by the gazillion and very few parts with leads!

Idaho QSO Party

from the 3830 contest reflector:

K7TQ mobile - 151 cw QSO

Thanks to all the "regulars" who worked me in several of the eight counties. K7AWB managed to find me in all of them. Lots of fast QSB both days

made for an interesting time. A thank you to Kootenai Amateur Radio Society for putting on the contest.

W1END in NH reported 4 cw QSO in 3 counties

K4FT caught 7 cw QSOS

K1RO in NH caught 10 on cw – 8 counties

KN4Y, ED, reported six QSOs in the IDQP

“Big plans for the Idaho QSO Party, bowl full of candy and cooler with Gatorade. Then the call, would I substitute for a sick bowler in the Tallahassee City bowling tournament. Torn between two enjoyments, but the sweet voice calling assured me I would enjoy bowling more. So my plans changed to a part time QSO party effort or QPE.

KA7T – fixed ID – reported 196 cw 106 ssb and 302 digital QSO

State Parks on the Air

Half a dozen states have annual State Parks on the Air weekends. Ohio is one. Texas is another. It's an opportunity to work more counties and if you are in one of those states (or nearby) you might consider running a park or two for the State Event.

This month there's a **Texas State Park on the Air** weekend in April. Maybe a dozen parks will be on the air, so if you have time, listen for them, give them a contact or two, and spot them.

Unfortunately, to add to all the confusion of park numbers and designators, most of the state contests use a different set of numbering of the parks from the now well defined

WWFF KFF series designators. You'll have to do a bit of Googling to find the county or cross checking between the KFF file and the particular info for the state contest. Most don't allow the WARC bands either (Frown) and are likely mostly SSB events.

Here's a bit on the Texas State Event:

The use of spotting nets on repeaters, packet nodes, simplex operation, telephone or by any other means is permissible.

Operation on all Amateur bands is permitted, except on 60 meters, 30 meters, 17 meters and 12 meters.

Operation in all modes is permitted

Contacts made through repeaters, digipeaters, internet, or gateways are not permitted.

Stations may be worked only once per band per mode for QSO count.

The Texas TSPOTA event is SCHEDULED TO OCCUR ANNUALLY ON THE SECOND FULL WEEKEND (SATURDAY AND SUNDAY) IN APRIL In the event that Easter Sunday falls on this weekend, the TSPOTA event will occur on the first full weekend (Saturday and Sunday) in April

Operating times are from 1400Z on SATURDAY to 0200Z on SUNDAY and from 1400Z to 2000Z on SUNDAY. Stations may work the entire contest period.

Exchanges: : RS/T plus

TX Park: "TX" + park designator

TX non-park: "TX"

Stations outside Texas use State, Country, Canadian Province, or maritime region
DX: "DX"

More info at

http://tspota.org/index_htm_files/TSPOTA_Rules%202017%2003%2016%20PDF.pdf

and <http://tspota.org/news.htm>

-- --

Now – MI has a continual program for the next 3 years! Here's a bit of info on it:

Welcome to **Michigan State Parks on the Air** (MSPOTA). MSPOTA is Michigan's version of the very successful ARRL National Parks on the Air. The overall 100th anniversary of Michigan State parks will be celebrated in 2019 with a soft start in 2017. MSPOTA will run consistent with those centennial dates. The event includes 117 MDNR Parks & Recreation sites including State Parks, Recreation Areas, Scenic Sites and State Trails rotated over the 3 years. That adds up to about 50 parks across the state active in each event year. One park in each of the 4 Lower Peninsula regions will be active in all event years as will all 24 of the Upper Peninsula parks. The schedule is such that regardless of what region of the state you are in there will always parks to work during the event. Awards will be available on a variety of schemes. The MDNR will be printing 500 custom QSL cards for each park. which will be available by SASE. MSPOTA is not just another ham radio contact program, it is a furthering of the already strong relationship between the State of Michigan and the Amateur Radio Service.

Amateur Radio is an active part of the Michigan State Police Emergency Management and Homeland Security Division's "AuxComm" auxiliary communications initiative. We encourage you to keep perfecting your EMCOMM skills in mind as you participate in MSPOTA. Our ARES/RACES relationship with the State of Michigan is one of the reasons that the MDNR has partnered with MSPOTA and is taking an active role with us. MDNR P&R sees MSPOTA as an opportunity to promote its centennial and amateur radio as well. In fact during our first meeting with them they were offering more off shoot program potentials than we could keep up. We hope you find MSPOTA as an opportunity to get outdoors and get on the air. 73 Will, W8WDR

Visit the web site at: <http://www.mspota.org/>

Their web site does have both the MI state park designator and the KFF number for each of the parks when you use the pull down menu.

Headed to the MI Mini? Maybe you'll run a few state parks along the way?

- - - - -

Ohio has one scheduled for September

Make sure to mark your calendar for the 2017 Ohio State Parks On The Air (OSPOTA) contest – September 9, 2017. The contest is always held on the first Saturday following the Labor Day holiday. Each year this event has grown and we anticipate another year of growth with even more participating Amateur Radio Operators.

<http://www.ospota.org/ospota/index.php>

- - - - -

Florida State Parks on the Air – April 1!

Our inaugural event will be the first Saturday in April, 2017 (yes, it's April 1st.) Operating time is from 1400 UTC to 2200 UTC. Most Florida parks open at 8:00 AM local time, and close at sundown. The operating time period of 10:00 AM – 6:00 PM (local) should allow time to enter the park, set up a station, operate, and tear down in time to leave before park closing. See the rules page for more details.

In the time leading up to the contest – please, get out and operate from our State Parks! One way to do this is by participating in our Worked All Florida State Parks awards. We don't have any type of official agreement with the Florida Department of Recreation and Parks (FDRP), so the more we get out there operating, always courteous and respectful of the rangers, wildlife, and other visitors, the more fun we will have on contest day. Be polite, follow park staff instructions, and don't hesitate to demonstrate ham radio to curious onlookers. Show them that this is another way that we can get out and enjoy our Florida Parks – you just might spark an interest in ham radio for your visitors! Share what you've learned about potential operating locations and conditions on the Yahoo Group, and send in photos of your adventures so we can share them here and through our social media channels.

Florida has an award-winning State Parks system featuring more than 170 park sites, including cultural centers, archaeological digs, Civil War-era forts, wildlife preserves, and recreational areas – not to mention beaches! Be sure to visit floridastateparks.org for more information on camping, educational materials, park maps, and a complete list of parks organized by region. There is also an excellent GIS map of all the park locations available online courtesy of the Florida Department of Environmental Protection.

<http://flspota.org/>

- - - -

Kraig, KA2LHO, has been very busy with the FL parks. He special ordered a banner – magnetic – for the side of his car when in the parks making contacts. Here's what it looks like:



He removes it while traveling between parks – and has one for each side of the car!

WI QSO Party

from the 3830 contest reflector:

NE9U Multi OP Mobile 551 cw 40 ssb QSO

Worst year in 10 years! Bad conditions and self inflicted wounds...

AS others mentioned, 40 was long from start, as was 20. 20 actually sounded pretty good, but no one was on it...too bad...

Luckily 80 came to life at end....made just about half our qso's in last 2 hours! First 5 hours were steady, but slow...

TR4W says we had 70 minutes of down time.....(the self inflicted wounds)
Murphy kept on striking...

At start, computer wouldn't send code (worked fine Saturday!)

Radio powered up to PLL ERR

My config files wouldn't run at county line changes...

.
Code sending went berserk a few times....

Battery for our antenna tuner was bad...luckily found Saturday and had time to buy a new one...

Antenna stopped tuning half way through contest....biggest down time of 17 minutes...was a real head scratchier until we saw it smoking! Insulation broke and it was arcing to some metal....fixed with 3m tape and solved that problem....

Because we were behind schedule and saw the snow coming we skipped our last two counties so we would end close to home instead of 100 miles away...

But even though there were problems, the local bar near my cabin had a special event steak night just for us on Saturday night! Ribeyes on the charcoal grill!!! Can't beat that!

Also had a great breakfast Sunday morning at another little up North cafe.

Looks like Michigan is a no go for us this year due to Easter Weekend. We are having some irrational thoughts of driving 1000 miles to Florida for their party a week later.....we will see....

73

Scott NE9U
Ron KK9K
Art N9BCA

K9TIT with Operator(s): KC9FSH KC9IZF AB9TE
Went mobile and made 182 SSB contacts

KD9CSI with Operator(s): KB9YUC KC9YL KD9BMD WA9TT KC9THF
Made 121 SSB QSO

KE0TT QRP Mobile – 46 QSO – 2 counties run

K3/10 at 5 watts to a 66' inv vee with apex at 24' fed with ladder line and tuner. Odd condx this time... QSO only one WI station twice: W9EAU. No other WI. Couldn't even hear other WI on 40 and 20, and on 80 they couldn't hear me. Sorry I had to run for the border. The MN border that is... a winter storm moved in between me and home, so I left before it got out of hand. WX was still OK for radioing in WI, but the last 15 miles were getting tough going home. Always fun to be a part of WIQP, thanks for the chance. C U next time,

73, KE0TT Dan

AA0EE Multi-Op Mobile – 287 cw 10 ssb

Counties: PIE (18), PEP (17), BUF (7), TRE (17), JAC (14), EAU part 1 (2), CLA (35), WOO (18), MAR (27), TAY (41), CHI (47), EAU part 2 (54).

This QSO party was an adventure in spontaneity. We didn't make the decision to go until Sunday morning. Dave (W0ZF) had family commitments in the afternoon,

but offered his truck to Matt (K0BBC) and me to put Wisconsin on the air. We installed Matt's FT-991, set up the operating position in the back seat, and as we drove toward the Wisconsin border around noon, worked on finding the screwdriver settings for the various bands.

As we reached the border (about 7 minutes after contest start), we had rig control working but no computer-generated CW. While usually I prefer to send code by hand, bouncing along down the road induces too many mistakes for me, so when mobile I strongly prefer macro CW---especially with the callsign suffixes that change each county!

After trying different things to get the keying working, we eventually stopped and swapped in my FT-857d which my laptop is more familiar with. An hour into the contest we made our first contact.

Our multi-multi mobile setup is primarily an HF station in the back seat using the screwdriver antenna. However, we monitor 146.550 FM, and will occasionally pull over to give a call there too. The truck was pretty noisy RF-wise, and especially on 40 m I was having trouble hearing stations through the noise. It was a little frustrating knowing there was a pileup but being unable to pick out any of it.

Here are a few of the highlights: we worked WP2B four times, as well as F8BBL and IZ3NVR once each. Our most frequent states were IL, OH, TX, WI, and MN. Rates were pretty high sometimes, especially after we moved to 80 m late in the afternoon. We logged 4 stations in a minute several times. The best 10-minute period had 29 contacts (174/hr) and best 60-minute period had 95 (including 1 and 2 FM contacts respectively).

One small surprise from the log was that there are only 135 unique callsigns logged, despite nearly 300 contacts. I guess that's more data showing that it's great to be a mobile station in a QSO party! Top chasers were K9NW(10), W9RE (9), K9CT (8), N2CU (8), AF8A (7), NW0M (7), W9EAU (7), and top DX-chaser was WP2B (4)

The roads were pretty good until 6:30 or 7:00 PM, when we started to have some light snow. Despite some navigational errors which put us on the shortest path (county roads) rather than the fastest path (larger roads), we managed to finish up near Eau Claire and had a safe (but slow) drive back to the Twin Cities. There were a lot of cars in the ditches as we drove by.

After a very slow ARRL DX SSB the previous weekend, it was fun to get back into the swing of high-rate contesting with WIQP! See you next year!

~Bill
AE0EE

N0IJ Mobile - 596 cw QSO

Big thanks to my long time driver/friend W0TVD who did his usual great job. Glad to report no problems with any equipment, except my brain! Made the minimum 12 q's in WSB, but must have forgot to hit enter prior to switching to next county and lost the bonus. Have done this contest many times, but this was surely the most difficult conditions. 40 too long right away and 20 just not there. Probably did not check 80 often enough early on, but it sure was a life saver near the end. Made 40% of my q's in the last 2 hours mostly on 80 and zero 20 meter q's after 4 pm CDST.

We managed to get lost in CHIppewa county and ended up 40 minutes behind schedule. Had a nice tour, but almost tossed my cookies while Terry tried to catch up. Lots of sharp curves and bumps on a very secondary bunch of roads! Took a shorter version through SAWyer in order to get to the much needed DOUglas. Made it with 12 minutes to go and logged 36 q's in that time--wild! Another plus was after our course change we actually saw 3 Elk in the woods near Clam Lake--first time ever for that. Big thanks to the folks who followed us and made the following: K9NW--22, N2CU--21, K9CT--17, AF8A--16, W9EAU & W9RE--15, K9WX--13, WB5JID--12, and WP2B--10 including one on 80. Only 2 EU in the log. Rig: K3 and "Larry's" screwdriver on top of the Outback. Lots of fun in spite of all--thanks to all for the q's.

John, N0IJ op
Terry, W0TVD as driver

W0AA – Mobile (WA0MHJ Operator) 515 CW QSO

What an incredible day on the road in northern WI! Thanks to the XYL for driving. Band conditions were a bit odd. I struggled to find a clear frequency on 20M, and then couldn't hardly raise any replies. 40 and 80 ended up being

the productive bands. There was lots of QSB on signals, but I hope I was able to pull most through.

N2CU fixed – NY - 187cw 67 ssb

Thought I might have a win until I saw K9NW's score. Great mobile participation with terrific signals in this two-band contest. Some whispers on 20m but no go. Missed IOWA for the sweep; saw that W9HB was there earlier in the day but somehow eluded me. Mobile leaders: N0IJ (21), K0PC and W0AA (18), NE9U (17), K8IR (15), W9HB (12), NR0T (10), AE0EE (8) and some others with multiple counties.

K9NW – fixed OH at N8BJQ – 182 cw 162 ssb

The sweep was elusive: Heard CRAWFORD call another station but couldn't poach him or lure him to my frequency. Next time. (It's possible I missed a mobile or two that may have been there.)

Big thanks to all the mobiles that really keep things interesting. Round of applause for NE9U, N0IJ, K0PC, W9HB, K8IR, W0AA, WI9WI, K9TIT, NR0T, AE0EE, WB9TFH/TFF, and probably a few others that I forgot.

Tnx QSOs!

And thanks to Steve, N8BJQ, who let me drop by on short notice.

73, Mike K9NW

K0PC mobile - 544 cw QSO

Another good drive through Wisconsin (until the end).

As others have said the bands were not in great shape. I was surprised by the QSO counts for each band. 20M was really not that productive and 80M was great at the end. Unfortunately, I had to quit 20 minutes early when it started to snow and the road conditions got bad.

The trip home was slow and nasty driving into the snow storm. I was glad to hit the driveway and enjoy an adult beverage to soothe my nerves.

Thanks to those who rode along on Sunday. N2CU was my first QSO and lead the Top Ten list.

18 - N2CU
17 - K9NW
16 - W9RE
13 - N4VV
12 - K9CT
11 - AF8A, K9WX, KC3X
10 - K0HNC, W8TM

Thanks to the West Allis Radio Amateur Club for sponsoring the WI QSO Party. See you next year.

73, Pat KØPC

WI9WI mobile 251 cw

My main goal in this one was to add a few more counties in my never ending quest to operate the WIQP as a solo operator from every Wisconsin County. I had hit a bit of a bump in the last 4 or 5 years. One year I didn't operate at all due to a family commitment, one year I only added 2 counties due to equipment problems, and last year I operated fixed from home after surgery kept me off the road. This year I added 6 counties, ROC, WAL, JEF, WAU, RAC, and KEN. So I now have 18 to go.

I started in ROC near the ROC/WAL line. I am a solo operator with no driver, so I only operate while parked. My plan was to spend about 45 minutes in each county. I had high noise levels on both 40 and 20, and it was immediately obvious the bands were in poor shape. I was hoping the noise was local, but it pretty much kept up all day, though it abated quite a bit as evening approached. After WAL, I drove up into the Kettle Moraine to the JEF/WAU line. That only took about 45 minutes. Forty seemed a little better by this time. Before finishing in WAU I decided to try 80 meters, but my antenna wouldn't load. I was pretty sure I knew what the problem was and figured it

would take about 15 minutes to fix it.

I decided to drive over to RAC/KEN which

I figured would take an hour. I made a mistake in planning for RAC. I usually scope out operating sites on Google Earth before the contest, but this time I just relied on my maps. The site I chose was unsuitable, and I then made a wrong turn, wasting another 15 minutes. I finally found a good place just north of the RAC/KEN line, but the total time from WAU was now an hour and a half. After about 40 minutes in RAC I moved to KEN. By now 40 was becoming unproductive. My last QSO was with an almost inaudible Dietmar, DL3DXX. In 2011 we were in Dresden and unbidden, Dietmar gave us a tour of the city. It was now getting dark, and there was a storm forecast, so my choice was to try to fix the antenna on 80 or pack it up and drive home. I drove home which was probably a good choice. It was a 2 hour drive and the last 45 minutes featured slippery roads, and at times very poor visibility. In summary, at least for me 20 was almost completely unproductive. Forty was OK, but very long, and signals ranged from a few strong ones to many ESP level QSOs. I obviously missed tons on 80 late in the day. I only worked 6 Wisconsin counties, a new low. All except an ESP QSO with W9EAU were within 50 miles of my operating locations. Quick summary: ROC (41 QSOs/42 mins), WAL (45/42), JEF (46/48), WAU (49/33), RAC (44/40), KEN (26/28). Hopefully next year will be better. Thanks to everyone who participated.

73 Jim WI9WI

WB9TFF mobile with WB9TFH made 114 SSB QSO

Our truck mobile was set up with 2 hamsticks on each rear door with A/B switch and tuner. We operated 20m, 40m & 80m. It was nice to switch back and forth. We were on some nice high spots, especially in Washington and Ozaukee. Wished we had more counties. We operated 7 hours. Thanks for all the WIQP Q's. 73

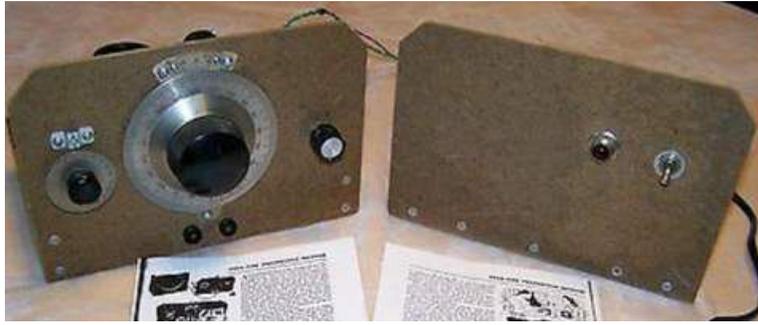
On the Trail of Regens II

Well, while I was browsing Ebay, I ran across another regen receiver from the 1940s – a homebrew. Didn't buy it although tempted. Here's a pic and a short description:

“You're bidding on a home-brew tube regenerative radio with one shortwave coil. It's in original condition, and has been tested with high impedance headphones. I was able to receive a very weak signal, but the radio obviously needs to be restored (new capacitors, etc).

This receiver has an interesting history: I purchased this at an estate sale several years ago. The builder's son told me that his dad built it in the late 1940's, from a Popular Mechanics encyclopedia article, a copy of which is included. He told me it had a full set of coils, and he used it many years to listen to AM and short wave broadcasts in his bedroom with a long wire antenna in the back yard. It ended up in the attic, and in the 1970's, he decided to build an external solid-state power supply for it, as the original article offered no isolation from the power line. By the time of the estate sale, only one coil could be found, but winding specs for all coils are included in the article. Tubes are included: 6C5, 6J5, 6V6. It's made from very high quality parts (National 'Velvet' vernier dial, 2 ceramic variable capacitors), and can be restored to working condition again.”

Back then, if you built things, it was often on a wood chassis with 'split rails'. The tube sockets would go between two slats – so you could easily wire them. That persisted till the late 1950s when folks worried about people getting shocked or killed – so then it had to be things with bottom covers, metal chassis, and lack of shock hazards. Oh, and back then you had B+ - anywhere from 90 to 400-500 volts – not counting high power tube amps with kilovolts. Guess we all survived that. Even the ARRL handbook had things designed this way for easy assembly.



This set had a 6C5 triode regen detector followed by a 6J5 audio stage followed by a 6V6 audio output tube. Originally it had a 6J5 rectifier tube but the later owner decided to build a separate power supply (smart move) and move it off chassis to reduce hum. The original ran right off the 117v line – no transformer. You might have had a 'resistance line cord' to drop another 85v or so from 117v to the 24v needed for the tubes. Those were quite common in the 40s and early 50s. Otherwise, you'd stick in a 10 or 20w power resistor to drop the voltage. It would still have potentially full line voltage in the set 'ground' and on the controls of the unit – depending which way you plugged in the a/c plug to the wall.

Some else bought this one – I'm shying away from 'homebrew' units here unless really special.

--

Sunspots I

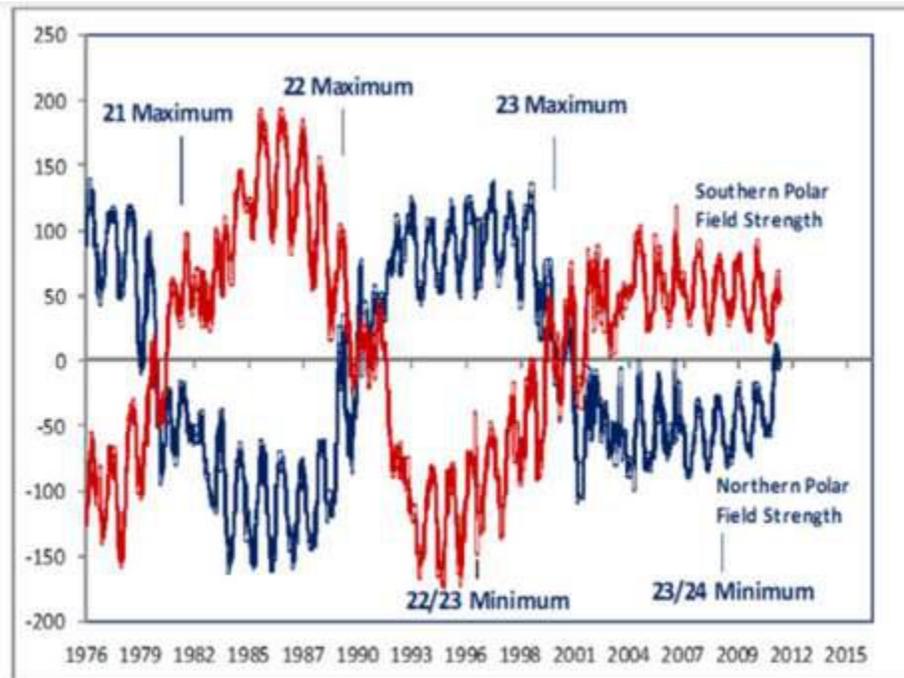
Forecasters are already starting to make predictions for what might be in store as our sun winds down its current sunspot cycle in a few years.

Ever since Samuel Schwabe discovered the 11-year ebb and flow of sunspots on the sun in 1843, predicting when the next sunspot cycle will appear, and how strong it will be, has been a cottage industry among scientists and non-scientists alike. For solar physicists, the sunspot cycle is a major indicator of how the sun's magnetic field is generated, and the evolution of various patterns of plasma circulation near the solar surface and interior. Getting these forecasts bang-on would be proof that we indeed have a 'deep' understanding of how the sun works that is a major step beyond just knowing it is a massive sphere of plasma heated by thermonuclear fusion in its core.

For over a century, scientists have scrutinized the shapes of dozens of individual sunspot cycles to glean features that could be used for predicting the circumstances of the next one. Basically, we know that 11-years is an average and some cycles are as short as 9 years or as long as 14. The number of sunspots during the peak year, called sunspot maximum, can vary from as few as 50 to as many as 260. The speed with which sunspot numbers rise to a maximum can be as long as 80 months for weaker sunspot cycles, and as short as 40 months for the stronger cycles. All of these features, and many other statistical rules-of-thumb, lead to predictive schemes of one kind or another, but they generally fail to produce accurate and detailed forecasts of the 'next' sunspot cycle.

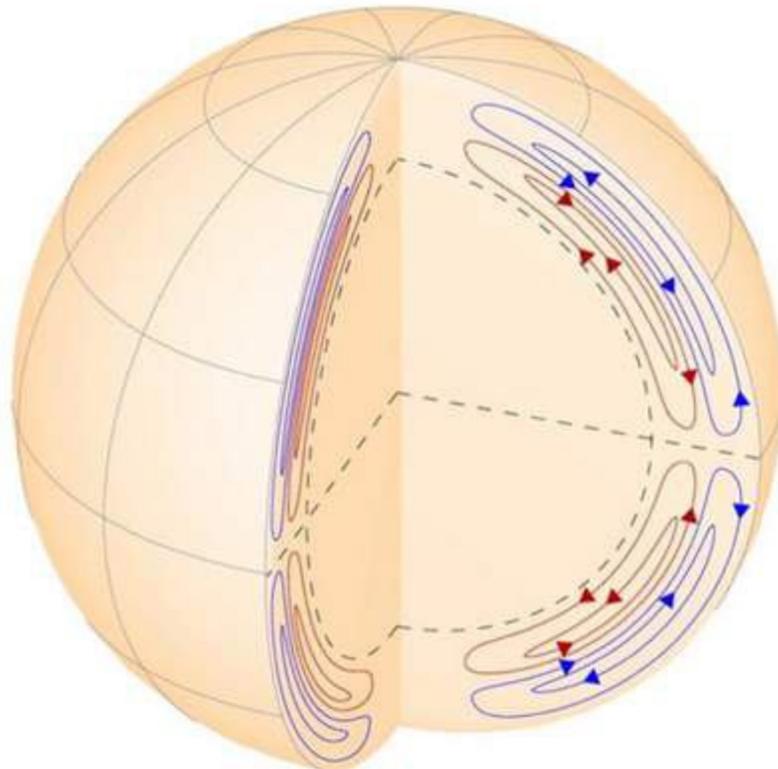
Prior to the current sunspot cycle (Number 24), which spans the years 2008-2019, NASA astronomer Dean Pesnell collected 105 forecasts for Cycle 24. For something as simple as how many sunspots would be present during the peak year, the predictions varied from as few as 40 to as many as 175 with an average of 106 +/-31. The actual

number at the 2014 peak was 116. Most of the predictions were based on little more than extrapolating statistical patterns in older data. What we really want are forecasts that are based upon the actual physics of sunspot formation, not statistics. The most promising physics-based models we have today actually follow magnetic processes on the surface of the sun and below and are called Flux Transport Dynamo models.



Thanks to the revolutionary work by helioseismologists using the SOHO spacecraft and the ground-based GONG program, we can now see below the turbulent surface of the sun. There are vast rivers of plasma wider than a dozen Earths, which wrap around the sun from east to west. There is also a flow pattern that runs north and south from the equator to each pole. This meridional current is caused by giant convection cells below the solar surface and acts like a conveyor belt for the surface magnetic fields in each hemisphere. The sun's north and south magnetic fields can be thought of as waves of magnetism that flow at about 60 feet/second from the equator at sunspot maximum to the poles at sunspot minimum, and back again to the equator at the base of the convection cell. At sunspot minimum they are equal and opposite in intensity at the poles, but at sunspot maximum they vanish at the poles and combine and cancel at the sun's equator. The difference in the polar waves during sunspot minimum seems to

predict how strong the next sunspot maximum will be about 6 years later as the current returns the field to the equator at the peak of the next cycle. The forecasts suggest Cycle 25 might continue the declining trend of polar field decrease seen in the last three sunspot cycles, and be even weaker than Cycle 24 with far fewer than 100 spots.



Statistically speaking, the current Cycle 24 is scheduled to draw to a close about 11 years after the previous sunspot minimum in January 2008, which means sometime in 2019. We entered the Cycle 24 sunspot minimum period in 2016 because in February and June, we already had two spot-free days. As the number of spot-free days continues to increase in 2017-2018, we will start seeing the new sunspots of Cycle 25 appear sometime in late-2019. Sunspot maximum is likely to occur in 2024, with most forecasts predicting about half as many sunspots as in Cycle 24.

The bad news is that some studies show sunspot magnetic field strengths have been

declining since 2000 and are already close to the minimum needed to sustain sunspots on the solar surface. This is also supported by independent work in 2015 published in the journal Nature. By Cycle 25 or 26, magnetic fields may be too weak to punch through the solar surface and form recognizable sunspots at all, spelling the end of the sunspot cycle phenomenon, and the start of another Maunder Minimum cooling period perhaps lasting until 2100.

But the good news seems to be that none of the current forecasts suggest Cycle 25 will be entirely absent. A few forecasts even hold out some hope that a sunspot maximum equal to or greater than Cycle 24 is possible.

Solar cycle prediction will be a rising challenge in the next few years as scientists pursue the Holy Grail of creating a reliable theory of why the sun even has such cycles in the first place!

- - - - -

Source: Article by Dr Sten Odenwald

OK QSO Party

from the 3830 contest reflector:

K5CM Mobile Assisted - 1290 cw – 926 ssb

First thanks to all the mobiles that gave many contacts to the deserving!
Ron AF5Q, Don K5DB, Bob and Lorna W0BH/W0WHY, Bill NU0Q, Jerry K5YAA,
Duffy KM6MC,

All Q's are important but a few of the most:

W5CW, N6MU, more than 40

OM2VL, K1RO, N4PN more than 30.

N4UP, W6OUL, W1TO, N2CU, K4BYN more than 20

WB0PYF, W5TM, N2GIW, W2CVW, K4MM, W7OM N3RJ, K4YT more than 16

W1DWA, W7GF, NA2X, K5WE, WC7Q, W9GHX, N8II, K6MA, KC3X, AD1C more than 13

W9AV, W4YWX, W2RR, VA3ATT, NW0M, 12

WA9LEY, W4ZPR, N6HC, KS4S, KJ4IWZ,
KF3G, K9NW, K7ZYV, K5IX, K5GE, K4AMC, K0JPL – 11

Some of the DX HK3Q 8, IZ3NVH, HI8IB DL8USA 6, JO7WXN 4
Pam did all the driving and most of the SSB operating on Sunday.
Thanks to everyone so much for following us around the state!!!

73, Connie and Pam K5CM and N5KW

K5YAA Mobile – 1096 cw 51 ssb

Began Saturday under rain clouds with water in them and they lasted up until out west north of Oklahoma City where the clouds cleared as rain moved further east, the direction I had spent most of Saturday in. Heavy rain at times but mostly just drizzle. A bit of time lost after a few counties but somehow made up as I moved along because a half hour was remaining on the timepiece when LINcoln county arrived. Good because 10 minutes on 40 then the balance on 80 would top off a very good day.

This run may be the most perfect as far as everything performing flawlessly. The van was never turned off except for gassing up once in PAWnee county. Not one, even minor, attack from Murphy. Rare in a mobile environment but much more fun than getting out the tool box.

Friday evening I decided to mount only the 20 meter Hustler leaving the 10 and

15 ones sitting on the ground. Actually the one for ten has been stored in the far rear seat of the van for a couple of years now. Figured to set the Tarheel on 40 and switch between 20 and 40 as the day went along. If anyone, just anyone said, "15 is open" I could motor the Tarheel to 21 megs. Only one time early Saturday when OM2VL said he thought he was hearing something on 15, did I press the motor drive switch to dial in 15 on the Tarheel. Alas, a false alarm as no signals heard in the mobile. We tried anyway Laci. Not one other time all weekend did I receive information that 15 was open so the choice of antennas was also flawless as the Tarheel went to 80 late Saturday in LINcoln county for a couple dozen Qs. Even worked OM2VL but neither of us sent "SSB?" like we did regularly on 20 and 40 meters. CW was tough enough so no need thinking a SSB Q was possible.

>From memory let me thank the following stations for riding with me most of both days. K1RO, OM2VL, N6MU, N4PN and several other GA onion growers, N2CU, W2CVW, K4MM, W6OUL, N6MA, N4UP, WN4AFP, WA4EEZ, WB0PYF and Ray's club W9GHX. Many others popped in as they could between mowing the grass and other Saturday home chores. They included, again from memory, K4AMC, K9NW (Mike actually in IN for a change), N2JNE, DK3BN, N3RJ, N1NN, W0MU, WA9LEY, NA2X, N8II, W7OM, VA3ATT, K7ZYV, AD1C, NW0M and many, many others that made the log and made the run great fun. Serge, using CG2AWR found a moment to hand out a few Qs for the QC mult. Thank you all for riding with me.

At times rates were out the roof. Never have I seen 600/hr but for a minute it was hit. 10 Qs in a minute rivaling the better CQWW rates from EA8 and other places. Alas though, I could not extend that pace for long. Looks good though and has to have the New England boys envious, perhaps? Rolled along often well over 250/hr with 149/hr being the overall rate.

Rather than send while moving along with the recorder running, as I have done in a number of parties running solo I decided to only operate when stopped. A good decision I believe as even with that approach tiredness set in after those eleven hours of roadwork. Years seem to be taking their toll but still music to my ears.

Having Merv, K9FD call in a couple of times from HI when I had no idea the band was open to the Pacific was a treat. JO7WXN called me when in NOBle and PAWnee making the log even more respectable. Both days Europe was readable but I believe Sunday was a bit better as ON4AAC and other somewhat northerly Europeans called in. DL3DXX, DL8USA, DL4CF, DL5JQ and DK3BN in DL land showed often. F8BBL,

IV3NVR, S57S, UA3AGW and LY5W were others. PJ4/K3SW snuck in the log early Saturday morning at the CHErokee/ADAir county line and I think the SW was the only one South of Florida to do so.

The following states were never heard. ME, DE, ND, AK, and NV. Only AB, ON, QC, SK worked in Canada but as always Canadian Qs appreciated.

Again, a most perfect weekend and the weather Sunday cleared. Sunny and mild Springtime temps. So much so I altered my route continually driving South to near the Texas border. The Red Bud trees are blooming and leaves are beginning to show on most trees now. Seems as each year passes a day or two "out in the country" lifts the spirits. Springtime also brings the little calves to life of which there were many in the fields with their mamas. One little character was practicing his high jump skills showing off to the others I guess. Over the years it has been rare a scurrying furry critter is hit by the van. I recall each of the three either myself or a guest op has squashed. Sorrowfully this time a small gray furry critter, just wanting to cross the Hwy in Hughes county missed the left front tire but got whacked by the left rear tire of the van. He was laying very still as I viewed him in the rear view mirror. Sorry buddy no way to miss you.

My thanks to Connie and Pam Marshall for their continuing the OKQP. This one, though activity seemed down a bit this year, was a good one. Much appreciation to all for an annual get the year started mobile run for this old man.

73 to all - Jerry K5YAA

Mobile Rig: A K3, Tarheel, HP Hustler for 20 on this run all pumped up by a KW solid state amp which is a hummer. Spares for everything except the stalwart amp which may never die according to the original owner.

K1RO – fixed - NH - 198 cw 70 ssb

Operated here and there throughout the weekend as time permitted, my first time making more than a handful of QSOs in this contest. Incredible effort from the mobiles! W0BH (62 QSOs), K5YAA (43), K5CM (36), AF5Q (30), KK6MC (18), K5DB (14), NU0Q (11), K0WHY (10). I had not previously operated in a QSO Party that was so heavily dependent on mobiles (224 out of my 260 QSOs), but by Sunday I

had figured out some of the operating techniques that the top guys use.

Conditions were great on 20 most of the day, although signals started to slide on Sunday afternoon. 40 was okay at the start each day and in the late afternoon/evening, but was tough mid-day at this distance. I didn't spend much time in the evening but had a few Qs on 80.

N2CU fixed NY – 115 cw 30 ssb

Had no intentions of operating this one, but turned on the rig and heard a few mobiles, so I got sucked in for a little while. Speaking of mobiles, this would be a very boring contest without them. Hardly any fixed activity to speak of. Mobile leaders: W0BH (38), K5YAA (23), K5CM (20), KK6MC (15), NU0Q (11), K0WHY (9) and a number of others with multiple counties.

AF5Q Mobile - 341 cw 173 ssb

Thanks to all that worked me. I did not get in the full route Saturday, and I woke up late today and ran backwards today. OM2VL, congrats on the sweep. Glad to help with KIO and GRE. Conditions on 20m for DX went south around noon. N6MU, N4PN, OM2VL, K5IX, and a few others followed me around. Please do so next year.

N5MU – fixed – CA 211 cw 129 ssb – all 77 counties

Managed a Sweep for the sixth year in a row. Last five were: ROG, STE, JEF, CHO and BRY. No way to do it without the great mobiles covering them all.

Top mobile for me was W0BH with 75 Qs followed by K5YAA(44), K5CM(41), K0WHY(34), NU0Q(29), AF5Q(27), KK6MC/K5DB(23) and AB5J(5). A special thanks to Duffey, KK6MC, who was the only one in the Panhandle area and the only one activating CIM/TEX/BEA/HRP early Saturday.

Congrats to Laci, OM2VL, who was close to a Sweep. Fantastic effort for an EU station!

Kudos to the handful of fixed stations who hung in there the whole time.
Thanks for another good one, Connie. 73...

John, N6MU

2017 Oklahoma QSO Party by Bob Harder, W0BH - 914 cw 577 ssb QSO

Saturday

As Lorna/k0why and I headed south on I-135 to the Oklahoma border on Saturday morning, we were both really happy that Connie changed the start time to 1500Z (9am) given the impending time change overnight. We had dry roads at first, but as we approached Oklahoma, a light drizzle started to come down and got heavier as we continued. The Astro van was in single-op configuration this time, and I hoped I had solved the front IC7000 feedback problem from the Texas QSO Party which made me move to the back for most of the party. In Texas, the front radio worked fine when connected to the engine battery but shut down when transmitting using an external battery. Extra grounding seems to have solved the problem.

Our route took us west at first, then across the state to Tulsa overnight. I had a nice northern route planned for Sunday, but realized two counties were uncovered in the southeast, so I spent Friday night rerouting to cover Choctaw and Bryan. Lucky I did as you'll see later! We had 4 three-county lines and one four-county line scheduled for Saturday, so I was really anticipating that, but it had already been raining in central Oklahoma, so I had a backup plan if the roads got too muddy. They did.

N6MU knows I always start out on 40m on 7037, so he was there and waiting for me as 1500Z arrived. I worked a few more on 40, but signals were way down for some reason, and I couldn't hear any of the other mobiles although I tuned around a good bit. After five contacts, I tried 20 and found it open but not loud either, so we were off to a slow start. The run-in to the first three county line is down a dirt road, but one look was all it took to see that wasn't an option. Oklahoma has red clay soil which turns into slick gumbo when wet. We've learned our lesson in the past, so we went to plan B without chancing it and stayed on the paved roads the rest of the day.

We use two Hustler triples on mag mounts for 40-10 CW/SSB coverage and a

separate mag mount for 80CW. All worked well on 40, then 20, but as I tried to go back to 40, the resonator showed a high SWR. It was raining, so I assumed the coil had gotten wet which is a known problem with older Hustler resonators as the plastic covering breaks down. I went back to 20 for a bit, but then we pulled over and changed out the old resonator for a new one (always have spares :-). I also made a minor tuning change and got wet in the process. That took care of the high SWR, and was the last of our equipment problems except when I accidentally kicked a computer power cord on Sunday.

The drizzle continued for awhile, then let up as we got into the really dry western part of the state. As we headed to the Alfalfa/Woods line, a bridge-out sign appeared, so we took the detour which was fortunately only two miles out of our way on a well-rocked road. We tried another way back but had to retrace our steps, so we lost more time. I had an hour scheduled at the four county line which we skipped to make the rest of our counties. Fortunately, all counties were covered on the run-in and run-out to that line, but we lost lots and lots of contacts. I was making contacts on 40, but kept listening for OK stations there and just didn't hear them, even on the half hour. I finally worked K5YAA/m (I think he called me), and two other OK fixed stations. I worked a few DX early on, but later no luck, even though John said they were working the eastern mobiles. It must have been propagation. I was just too far west for a good bit of Saturday, I guess.

Finally we got on the turnpike to our overnight stop in Tulsa, arriving at the hotel just as time ran out. I think I waited too long to put on the 80m antenna, because 80 was good the last hour. We ended the day with 1009 combined contacts in the log. The hotel even let me recharge a battery in one of their conference rooms overnight!

Sunday

Sunday was cool and partly sunny as we got an on-time start out of Tulsa with 13 more counties to cover. The "gang" quickly found me and most everyone figured out the system from yesterday, so short times in counties wasn't a problem. Lorna continued to have fun giving out contacts as well. She ended up with 133 Qs in her log which must be close to a record for her! She particularly enjoyed a short chat with Sandy/WA1SAY from CT, who found me in almost all of my counties and worked Lorna in many of them as well. Of course she also enjoyed saying hi to other ops as well, including a number we've met in person.

Conditions seemed better today on both 20 and 40, but I still found few mobiles to work. I finally heard KK6MC/m loudly CQing and surprised Duffey with a call. Time went really fast on Sunday as we found ourselves approaching Choctaw county on the border with Texas. I started out on SSB and worked John for his second to last county. Laci/OM2VL really needed Choctaw as well, but once again, DX just wasn't coming in. It finally did later for a bit. Choctaw led to Bryan county, and we confirmed John/N6MU for another OKQP Sweep. It's becoming routine for him, but that doesn't mean it's easy. Congrats once again, my friend!

My last four counties all went by in a rush. We ended up in Love County at Lake Murray State Park on the CAR/LOV line for about 10 minutes. Last minute furious action is always fun, but then it was over and time for a picnic lunch. This year, the OKQP started off my Spring Break from Hesston College, so we spent a few days in north Texas before heading home. I just finished cleaning the Oklahoma gumbo off the van and it's now ready for our next adventure!

Stats

We operated 16.1 hours, 1632 combined Qs (Lorna made 133 contacts), 358 unique calls, 8 dupes, 707 OKQP miles.

States not worked : AK HI ND WY

Canadian mults worked : AB BC MB ON QC

DX worked : 4 countries : 9A DL OM ON

Afterwards

Thanks to Connie/K5CM for managing this craziness (and congrats to Connie and Pam/N5KW on a very FB mobile run!). Since this weekend was the time change, the hour we gained back by starting at 1500Z was MUCH appreciated! Thanks also to the mobiles and fixed stations who put all 77 counties out there for everyone to work.

The 2016 Kansas QSO Party is scheduled for August 26-27. With 105 counties, we need all the help we can get, so mobiles, head this way! Everyone else, thanks for the Qs in Oklahoma, and see you down the log in 2017 ...

73, Bob/w0bh and Lorna/k0why

OM2VL - 144 CW QSO

Usually I can't take part on OK QP, because it was on same weekend as RDXC. This year fortunately OK QP was one week earlier. Condx before the QP was not so good: 20m closed very early when 40m was still dead here. So, I thought it will be very hard for me and sure missed many counties in my "dead zone between 20m closing and 40m opening" ... Another problem that on same weekend was several Contests with many many participating stations from EU.

Thanks a lot to Connie K5CM organizing this nice QP and my BIG thanks to mobile stations who gave me so many QSOs on both modes. Where was resident stations????? I tried several times CQ on SSB but no any resident back to my call. I had excellent pileup on Sunday at 19:00 - 20:25Z on 20m and made 91 QSO but no any Oklahoma station.

Most QSOs with:

K5YAA/M 48 QSO/26 counties

K5CM/M 45/23

W0BH/M 30/17

KK6MC/M 22/14

AF5Q/M 20/16

NU0Q/M 16/16

K0WHY/M 13/13

K5DB/M 11/11

N5XTR 2/2

AB5J/M 1/1.

Missed only 2 counties: McClain & Choctaw.

SWEEP was very very close from Choctaw I heard and called 10 minutes Bob W0BH/M but no luck I have noticed that AF5Q will be from McClain, I was listening on his frequency 1000 times but unfortunately I can't find him at this time - before and after many times. Maybe at that time he was on his frequency of some EU station.

My BIG thanks to Jerry K5YAA/M who change his route to give me Bryan county as my # 75 + many SSB QSO's. BIG thanks also for other mobiles for his excellent job.

On 80m I heard and called several stations, but in my LOG are only K5CM & K5YAA.

Thank you very much for the nice weekend!

Sunspot News II

The first sunspot of cycle 25 is seen!

An attentive sunspot observer from USET spotted on December 19 a particular interesting structure in a magnetogram. It differed from the other present structures because of its position on the solar disk and the leading black - instead of white - area. By its high latitude (23°) and reverse polarity, the small magnetic dipole definitely belonged to the next sunspot cycle. If it would get strong enough to produce sunspots, it would make it the very first sunspot group of cycle 25.

And it did! On December 20, 10:30 UT, 2016, an USET observer made a drawing of sunspot A1.

It doesn't mean that cycle 24 ended. Usually sunspot cycles overlap, up to 4 year. And this is what happens: cycle 24 is heading down and simultaneously, cycle 25 pops up in a very cautious way.

In fact, to be fully realistic, the preparation for a next sunspot cycle starts as soon as the first new magnetic fields are generated near the poles. This happens already before the sunspot peak of the ongoing cycle! However, in terms of solar activity, it is only when the cycle generates magnetic fields that are strong enough to produce sunspots that the new sunspot cycle begins.

Typically, the first spots of a cycle emerge at much higher latitudes than the spots of the co-existing previous cycle, which is in its final declining phase, with spot latitudes around 10°.

In most cycles, the first sunspot of a cycle occurs 18 months before significant others are seen and the previous cycle sunspots taper off to near zero. So don't get your hopes up! We're a long way from the next solar sunspot max! Or even the real start of the next one.

Virginia QSO Party

Usually this is a 40/80m contest as VA stations try to work each other – and mostly SSB. With 20M not so great, it was even more so this year. Not many reports from the dozen mobiles, either.

This contest sponsor recommends spotting on QSOparty dot com....but it had almost no activity.

This is one of a few remaining state QSO parties still using serial numbers...a pain in the butt. When I'm out mobile, I just give out serial numbers but I skip one here and there trying to remember what's next. Who cares? I'm not going to submit a log for the VA stations I work when out putting out counties – sometimes with N4CD in 2 or more states, too....

From the 3830 reflector:

N4JRI mobile - 78 SSB Q

More relaxed for me this year, with more activity moving to 80m earlier. 40m has been really bad recently, particularly for the WV and MD parties in 2016. So glad we have the VHF/UHF options in VA. Would love to collaborate more with fellow 'loner' mobiles. Looking forward now to the WVQP in June!

K1RO - fixed NH - 120 cw 511 SSB

What a fun contest! Although unfortunately 40 meters was "long" both days and Virginia stations had a hard time working each other, I had a pipeline from New Hampshire. In the morning and evening, 80 meters worked well too. I managed a few QSOs with fixed stations on 20 meter CW, and also paid more attention to 160 this year.

This is the first time I have ever operated nearly full time in a two-day QSO party except for the New England event in May, just taking short breaks for meals. Fixed station participation is excellent in this event, and I worked a number of stations on several bands/modes. I especially appreciated the many Virginia hams who just got on to hand out a few points.

I had a total of 161 QSOs with Virginia mobiles. KJ4OAP (34 QSOs), W1ATA (27), KW4VA (23), KG3V (19), AB4YK (18), N4JRI (12), KG4UPR (6), N4YXW (5), KB1HQS (4), KJ4EOO (3), K4CQ, KF4TJI, KF4TJJ and W1WCN (2 each). There were a few others with 1 QSO each.

Thanks to all the Virginia stations and to the sponsors for making this a first-class operating event! I just hope conditions are better for Virginia stations next year.

Station: TS-590S (x2), SPE amplifier, inverted Vs at 30-40 feet for 160/80/40 and Force 12 XR6 (2 elements per band) at 25 feet for 20.

WN4AFP - fixed SC - 53 cw 72 ssb

I had numerous family responsibilities that kept me from spending more time in this contest. This was a 2-band effort for me. 80m in the morning and evening and 40m all the time. Running QRP with marginal conditions was challenging, but I finished what I started. I was shooting for a three-peat in the QRP category. Thanks to many of you that I worked 3-4 times. This contest has always been a phone contest and this year's was no different. Thanks to mobiles KG3V, KG4UPR and KJ4OAP for the multiple counties and extra Q points. It's always a pleasure to work many of my VA friends! 73s Dave WN4AFP

K8MR - fixed FL - 15 cw

Not much going on, at least as heard in Florida, though the received numbers from the few VA stations seemed to say the same thing.

My first contact sent me a QSO number (at the time I had an LAQP log open in N1MM) that I figured was just a way to keep the RDXC folks happy. When the second sent me a number, then I checked the rules.

Odd listening to a guy repeatedly calling "CQ VPQ".

This is another contest that would do well to prune things down to one day.

73 - Jim K8MR

K0ZR - fixed VA - 612 cw Q

My operations were curtailed both Saturday and Sunday, to attend to important conference calls, each lasting a couple hours. This element, along with what appears to me, marginal at best participation (at least in the CW bands) by both VA and external VA stations, made the pickings very slim this year.

Even though the SN was reported as 0, the solar flux density was sufficient to provide some good propagation conditions on 20m. I had a few surprise callers from VU and VK.

Thanks to all those that played. All VA stations appreciate the QSOs you provided.

KN4Y - fixed -FL - 36 CW Q

Worked the only CW mobile. Not much mobile activity because the use of serial numbers takes the fun out of a mobile operation. Mostly a 40-meter activity on CW. Most signals were good.

On the Trail of Regens III

It's been a good month for regens on Ebay. One of the first receivers ever built for the 'short waves' came up for sale on Ebay. The Grebe CR-18 was a two tube regenerative receiver using plug in coils – circa 1926. Regen detector, one audio stage.



In the beginning, everyone shared the same spectrum – 250-1000 KHz. Military, Commercial, Hams. By 1910, there were tens of thousands of 'experimenters' working each other – with short range distances covered – usually 10-20 miles max, a bit more for 'really good stations'. That persisted up till WW1. The ARRL – Amateur Radio Relay League – was established to allow stations to 'relay' messages from start point to finish point, which could be cross county via many, many relay stations! You didn't talk hundreds of miles.

You'll remember hams were 'banished' to those 'useless' frequencies above 1.5 MHz – 200 meters and down in 1912. Maximum 'transformer input' to your spark setup was limited to 1KW. Most 'hams' couldn't afford a KW – just got by with 5 or 20 or 50. Lots of folks were on battery – no a/c wiring around! At the time, there were very poor detector circuits (mostly crystal diode receivers and similar) and the tubes of the day weren't very good above a MHz. In fact, the tubes of the day were not even very good for audio (Audions). The number of experimenters dropped by nearly 90% at that point in 1912. How did one get a spark gap transmitter up on 80M? Or higher?

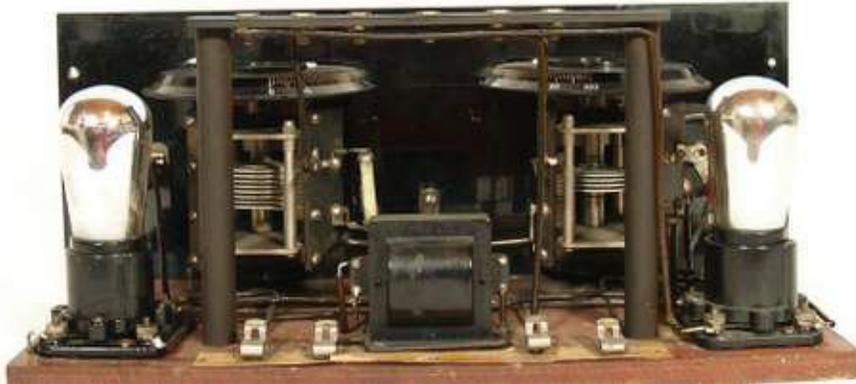
World War 1 came about – and all ham activity ceased for the duration. The war brought about giant steps in new radio technology and mass production of vacuum tubes. Armstrong had invented the regen receiver just before the war, but it really took off after the war. Many of the first one-two tube broadcast sets made (home made, kits, and production) were regens as radios had to be run off battery power – and tubes were energy hogs – filament power – so the fewer you needed, the better off you were. Plus, tubes weren't inexpensive either. You'd buy a radio for \$29 (1923 price) and then another 13 or 15 bucks for the tubes, sold separately!

Regens went out of favor for broadcast reception by the late 1920s – for several reasons. One was the failure of many people to understand how to use them properly – and the often resulting whistles and howls – both in their sets and in their neighbors sets. A.C. Power had reached many more homes, allowing AC powered sets with more tubes – including the superhets – to be built starting 1926/7.

There was one area where the regen still did well. Hams, naturally, had to use the frequencies above 1.5 MHz – like the old 160m band and 80m. International broadcasting started the end of the 1920s – and Europe was a hotbed of conflict. All the major powers in Europe quickly established international broadcast stations, and US folks wanted receivers that would tune them in.

A large percent of people then built one tube sets or built a one stage 'converter' and used the audio section of a broadcast radio for their listening.

Grebe was a major manufacturer of high end sets that operated with minimal problems. The CR-18 was a two tube set – a 01A regen detector and a 01A audio amp stage. If you wanted to drive a horn speaker, you could buy a RORK tube audio amp to follow. Many expeditions to the far corners of the Earth selected Grebe as their expedition radio for communications. It was the “Collins” of the day and one of the first 'short wave' receivers ever commercially produced. The radio had plug-in coils for different bands.



Rear View – two tubes

Never heard of Alfred H Grebe? Here's a bit of history on this radio pioneer.

He was born in 1895 in NYC. His father gave him his first radio set at the age of 9 (1904 time frame – a few years after Marconi started up with ship to shore commercial radio. Radio experimenters were using the same frequencies – usually below 1 MHz.

He soon came to be such an expert that he knew more than the science teachers in his school did. From public school, he went to a radio training school in Jamaica, and a commercial radio school in Manhattan, New York City. He was an avid experimenter. At age 15, he became a licensed commercial operator, and went to work as a ship's radio operator traveling the high seas. After three years onboard ships, he returned to Long Island, where the first commercial station on the island was being built at Sayville. He then got a job as an operator there.

Not much later a radio craze hit America, and some friends had him make receivers for them. After making a few sets, he decided he would go into commercial production.

In 1914 he issued his first catalog of parts and receivers, and set up a factory in Richmond Hill NY to make all the components needed to assemble a radio.

You'll recall at this time that there were patent battles going on, with large licensing fees

for 'assembled' radios. To get around this, many people sold 'kits' – which you could quickly assemble and have a nice radio. This is a few years before 'broadcast' even started – you had experimenters and commercial people to listen to with your receiver.

After WW1 ended, he set up several radio stations: one (WAHG) was identified with his own initials; another (WBOQ) had call letters standing for Borough of Queens. (Station WAHG is, through several call letter changes, now WCBS, still a major radio station in New York City.) He set up a broadcasting company called the "Atlantic Broadcasting Corporation" (changing WAHG to WABC on November 1, 1926) which operated his stations until he sold them to CBS in January 1929.

During the 1920s, Grebe products were 'top end' and highly reliable and built very well. The Grebe Synchrophase is one of the better 1920s receivers and still in demand today by collectors. Most other Grebe products command premium prices.

Alfred Grebe's manufacturing company, A. H. Grebe and Co. Inc., was renamed Grebe Radio and Television Corporation and moved from Richmond Hill to Manhattan in 1933.

In 1935 Grebe underwent a stomach operation at Manhattan. He became ill after the operation and died 10 days later. Only 40 years old.

- - - -

This radio sold for \$1075 plus \$60 shipping on Ebay. Ouch. Would have liked to own it....but not at that price!

County Hunter Form - Dayton

Good News!

Tim, W8JJ, has advised that the County Hunter Forum will be held on Friday, May 19th, from 4-5 PM in Room 2. Note this is at the new location in Xenia about 15 miles east of Dayton OH off Route 35. . More details to follow next issue on the program. Bring your friends, recruit some new county hunters – the room seats 450 people!

Most folks will likely stay in Dayton at the same motels as usual. Due to uncertainty about travel times and logistics, we will not have a 'formal' county hunter get together dinner. We really don't know what the traffic situation will be this first year – but some will likely head to the Golden Corral anyway for dinner. After this first year, we'll work out some logistics for future years. Plan on bringing lots of patience since no one knows how the traffic situation will be. There aren't many motel rooms/motels in Xenia and even fewer places to eat there, so plan on staying at your favorite motels in the Dayton Area. I've stayed at the Country Inn in Xenia – an old place from the 1940s or 50s – and wouldn't recommend it if you are traveling with a YL/XYL. The other motels are \$\$\$\$ and likely sold out by now to vendors. It probably won't take any longer than from the old location at the Hara Arena in Trotwood to get there and back to most locations.

La QSO Party

There was a CW mobile to chase – NO5W. One on SSB and that was it.....and a dozen fixed stations to catch

from the 3830 contest reflector:

NO5W mobile 461 cw 7 ssb QSO

This year Jim-W5TUF remarked at a club meeting that there were many parts of Louisiana that he had not seen. We quickly developed a travelog for him and fortunately he agreed to travel along with me in the LA QP, originally to share the driving and operating but as it turned out he did all of the driving and I did all of the operating -- next year we'll definitely get him to take a turn in the operating seat. Many thanks to Jim for doing an excellent job of getting us around the 450+ miles of the route with only two "diversions".

This was a QSO Party adventure that had a rather rough start. Everything had been successfully checked out Friday before the party but, since I prefer not

to leave the K3 installed in the vehicle overnight in my neighborhood, Saturday morning just before sunrise found me installing the K3 by the light of the vehicle dome light. Having done this installation many times I can do it in the dark but this time I managed to miss the power pole plug, not entirely but in such a way that the red side of the supply got plugged into the black side of the radio. At the time I did not realize my mistake and went happily across Lake Ponchartrain to pick up Jim.

And away we went to complete the setup of the station on the way to our first parish - Washington. Ah, what's this no power to the radio? Checking out the connection, the error of my installation was apparent but of course the error had blown a fuse in the supply. By this time it was about 10 minutes before the start and I could not remember where my spare fuses were since they are rarely needed. Fortunately there are two circuits from the supply, one (now dead) dedicated to the radio, and the other dedicated to supplying the logging laptop, an RS-232 GPS, and the antenna controller. Fortunately the Rig Runner connected to the second circuit had a spare 25A slot so I was able to power the radio from that connection. Unfortunately in the confusion we had missed our first turn so we had some back tracking to do. After that things went smoothly and we were able to activate all of the planned parishes and even made it to our appointed beer and pizza date with Dallas-K1DW and Ted-KN5O at the end on time.

The QSO party was painfully slow during the morning and early afternoon but picked up later in the day. Conditions were strange, especially on 20m where we had openings to Europe and Japan at the same time. We rarely work any JAs in our QSO party roving trips but this time JO7WXN went in the log in seven different parishes.

You can see that Dietmar-DL3DXX was tracking us close enough using the APRS display that he managed to be first in the log in 5 parishes. A close second in that statistic was KQ3F. During the party we worked 156 different stations and thank each of them for the Qs. Special thanks go to the following stations who contributed more than half the contacts: N2CQ(24), KQ3F(18), K0HNC(18), DL3DXX(17), N6MU(16), WB0PYF(13), WA8ZBT(12), AD1C(12), W0ZQ(11), W8WVU(10), KC3X(9), JO7WXN(9), K7ZYV(8), N4JT(8), KE0TT(8), WE7G(7), W7GF(7), W4SIG(7), N5PR(7), K4AMC(7), K0DEQ(6), K8MR(6), YV5OIE(5).

Even with the slow start and conditions that were not the greatest, it was a

fun party. Our next one, the MS QP, is coming up soon where Skip-W5GAI and I will be sharing the driving and operating. So please listen for us operating NO5W in a number of southern counties in Mississippi on April 1.

73

Chuck-NO5W

Jim-W5TUF

N1CC TX 14 cw 1 ssb

Yet again I am pretty much too close to Louisiana to do very well. NO5W was worked in 3 counties, and I never heard him in the others ... the first two right after start of contest and the last one just before the end. Only time propagation allowed for contacts where he was at. All day lone N5LCC was very weak until the last 3 hours, then very strong.

Nothing much on any band at the right time for contacts, when band was open to the Parishes the noise level apparently was too high at the LA end to hear my QRP signal. Nothing seen or heard on 160 or 20 and above.

N6MU -- fixed - CA 18 cw 14 ssb

Crazy skip today. N5LCC in northern LA was loud on 20 all day. NO5W/m and KK4TE/m, both in southern LA, were unreadable until the afternoon. Sure missed a lot of mults. 73...

John, N6MU

KZ5D - fixed LA - 139 cw Q

This was fun, but very difficult with all the other contest activity going on. Suggest we find a better date. Perhaps choose a weekend with other state QSO parties. More activity equals more fun. BUT not with a major contest such as the Russian DX and the big RTTY event. 73 and thanks to all for the Qs.

N2CQ - fixed NJ - 31 cw 9 ssb

Thanks for the great NO5W/M and KK4TE/R for the activity. They kept me there!

Ken N2CQ

Solar News III

Solar Cycle 25 Amplitude Prediction

Guest essay by David Archibald

“One of the most accurate ways of predicting the amplitude of the next solar cycle is to derive it from the strength of the solar polar fields at solar minimum. And you don’t have to wait for solar minimum. An accurate assessment can be made four years before minimum, which is where we are at the moment. This graphic shows the last 40 years of solar polar field strength data:

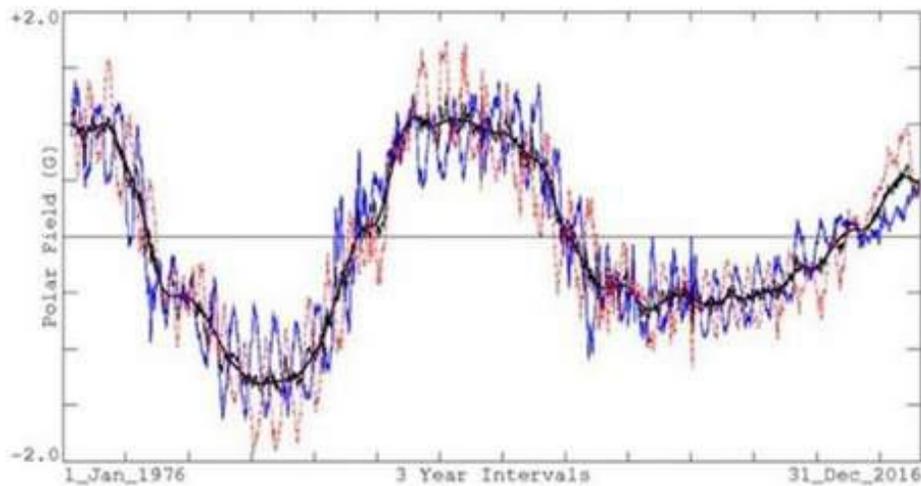


Figure 1: Solar Polar Field Strength 1976 – 2016 (source Wilcox Solar Observatory)

And this graph shows that data averaged and all converted to a positive sign:

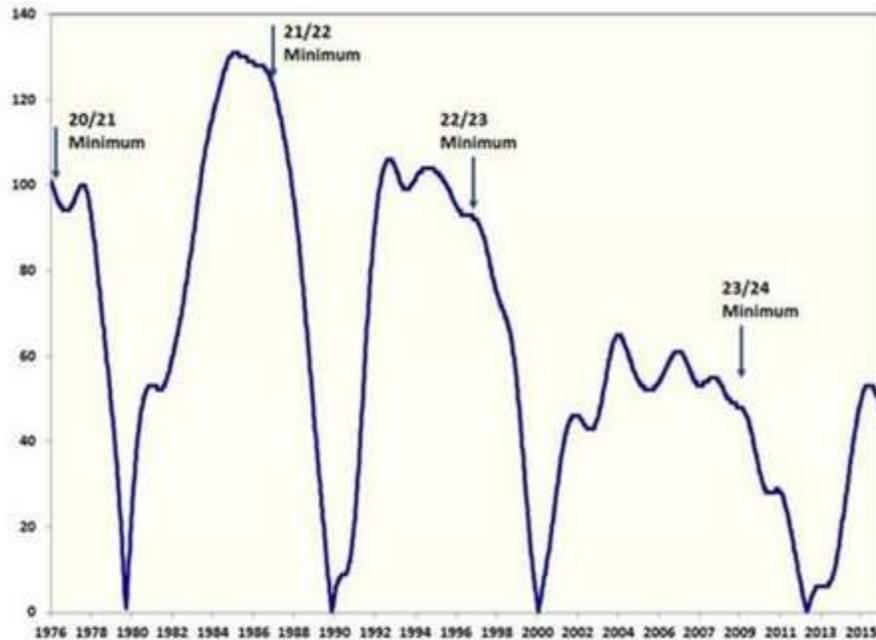
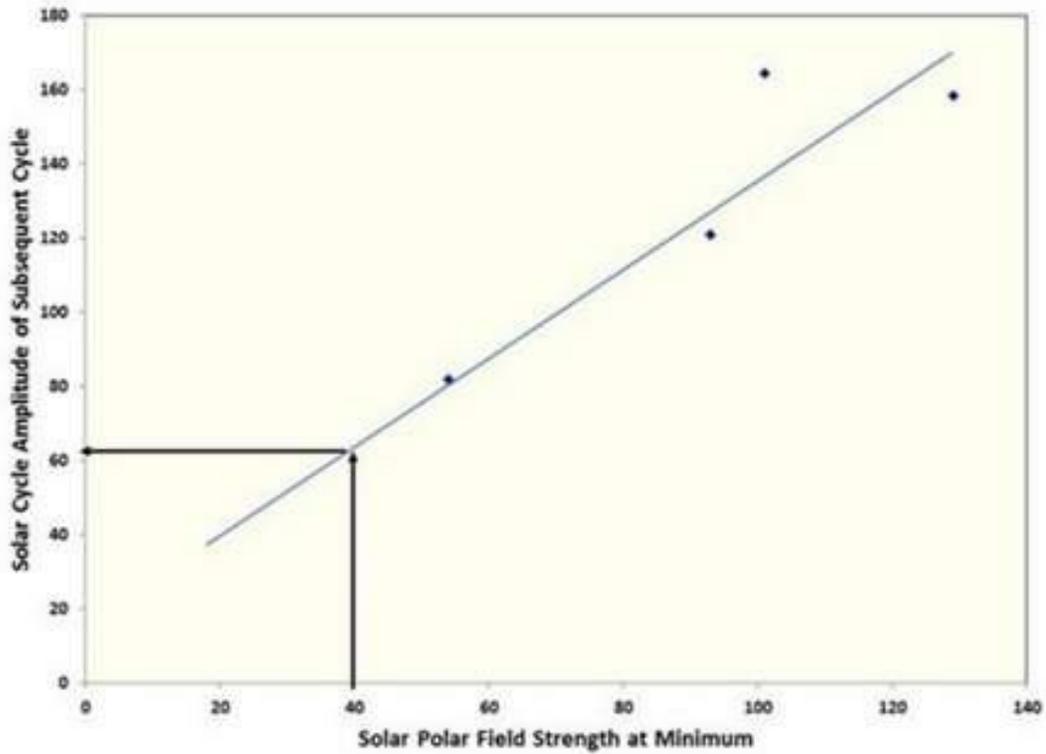


Figure 2: Solar Minima relative to Solar Polar Field Strength 1976 – 2016

It is evident from Figure 2 that solar polar field strength has an early peak and then relaxes by an average of 12 units to solar minimum before falling away. The recent peak value was 53 in 2016. Therefore the field strength is likely to be 40 at the 24/25 solar minimum. How that value translates to peak amplitude of Solar Cycle 25 is shown in the following graphic:



A monthly smoothed maximum sunspot number of 62 is derived for Solar Cycle 25. This would probably be around 2025. This is almost down to Dalton Minimum levels.

In terms of other interesting aspects of solar behavior, the F10.7 flux has settled into a narrow range:

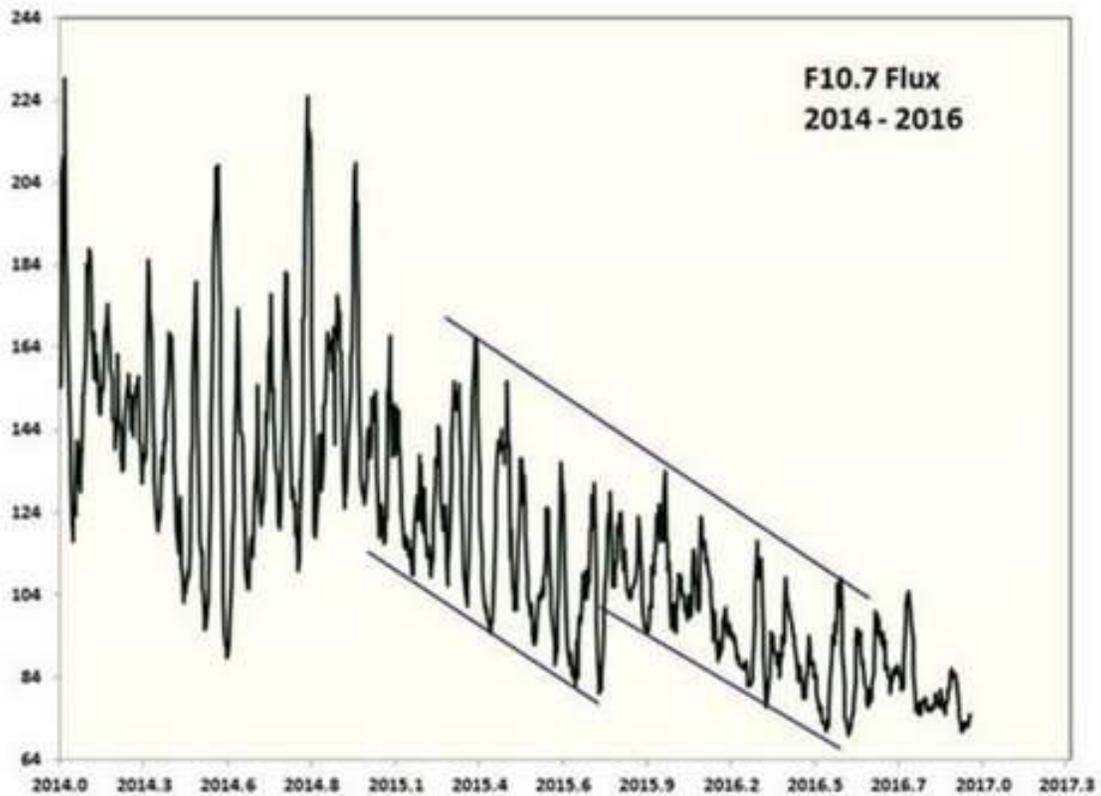


Figure 4: F10.7 Flux 2014 – 2016

The F10.7 has been in a narrow range over the last two months and is now only just above the immutable floor of activity of 64, though it may be three years to solar minimum.

My prediction for the peak sunspot number of Cycle 25 is a monthly count of 62.”

On the Road with N4CD

Saturday – March 18

A weekend came around – Saturday morning it was off to the Spring Vintage Radio Club Auction down in Irving TX. It was time to clean out some of the things in the storage area – so I hauled off some Knight Kits – a R-100 Receiver and a R-195 receiver, the last kit ever sold by Knight Kit – plus a few other items that I had acquired along the way. I've got way way too much junk – and have been in the same QTH for 27 years now – it just seems to pile up.

There wasn't much of interest to me up for auction. A few Hallicrafters and National Receivers went by – not much ham gear as this is oriented toward broadcast sets from the 1920s to the 1960s – ones full of tubes. Half a dozen 'cathedral' wood radios were up for sale along with hundreds of table radios and a dozen large floor console radios. You could buy floor model consoles from the 1920s to 1950s – some with record players. Oh, and there were hundreds of 45, 78 and LP records available. Probably \$5000 in 'stuff' changed hands....and I only came home with about 1 lb of new stuff- a box of 'new' electrolytic HV caps to replace old ones in radios and a DeForest 1921/22 single tube regen set. The rarest cathedral went for a couple hundred bucks but most things sold for 10-30 bucks.

Over the previous week, I hauled 30 years worth of QSTs to the local library for their annual book sale. Before that, I took boxes to the local radio club and 60 people weren't interested in them. Maybe they picked through and took one or two issues – but I hadn't gone back looking in them for years – so they had to go – just taking up room in the closet. You can't even give away QST or other ham magazines these days. New hams just don't seem to read – at least printed material – or have any interest in the past. If it doesn't show up on their iPhone, it's not relevant. How sad. Plus, all the issues of QST are on line for ARRL members going back to the first issue.

I missed some of the LA QP activity. My wire antennas still down from the new roof installation. Got to hook up with the roof contractor and get them back up. I'm not climbing on my steep roof any longer these days myself.....and even way back I wasn't a fan of going up there to put them up the first time! The roof workers scurry about with nary a worry. So there was no reason to stick around in TX without 30 and 40m, not that I'd hear much anyway in LA – not far away - with the wacky band conditions – making 40M long. I don't even hear much on 20m – skip is long most of the time.

Sunday March 19th.

So Sunday it was off to OK to run some parks. Weather was going to be 'excellent' – warm, mostly sunny – no rain around. Not much reason to stick at home. I couldn't hear KA2IHO in the panhandle of FL on 20M. After a quick breakfast stop at Denny's – the usual Sunday breakfast spot – I was off to the first park 2 hours away in OK – McGee State Park in Atoka County. Probably all the state parks in OK are on lakes – seems to be that way – with swimming, boating, camping. They charge for campsites and RV sites – but there is no admission charge for the parks.

The band was good early in the morning. DX was rolling in on 20M and I reached the magic '44' QSO number easily. Most of the parks have fairly quiet, rf wise, areas to run – where you don't bother anyone and no one hassles you. At least this time of year, most parks are lightly visited. The temps were in the 70s and headed to the 80s for the first day of Spring on Monday. Delightful weather. I didn't check but I'd venture the water temp in the lake was in the 50s, maybe low 60s so there was not anyone venturing in! Soon, but not yet!

After an hour and a half, I headed out to the next one down the road in the next county – Pushmataha – and Clayton Lake State Park. It's on the western side of a ridge – not the best location for radio as you're 'over the edge' trying to get a signal to Europe and the east coast.

It was mid-day – and I could not spot from there – so it was a challenge getting to 44 contacts. I worked the normal county hunter contingent – but only a handful on 40cw, a dozen on 30cw but the DX was down and 30M was only fair. Not even much US on 20cw – nearly all DX – what there was! This mid day, too, when the band should be decent - 20 SSB was poor – couldn't get anything going – and didn't get spotted. I wound up working anyone I could find including NP4VI/100 just to reach 46! It took two hours to do that. I had cellphone coverage but didn't have any park hunters in the phone book – I'll fix that before the next trip! I needed some 20m SSB – cw and SSB.....and same on 40m SSB. Without spots – no one shows up! Mike, W0MU, and Bob, KA9JAC, are big park chasers these days but they don't go scanning the band for parks very often. On a given weekend there's a few on the air around the country – sometimes five or six within hours.

After squeaking by with just over 44Q, it was off to the next one. Had to run a county line on the way – some different counties, then down into McCurtain OK. I needed this for 3rd time Transmit all OKLAHOMA, too...now that I can give myself credit also for

Nth time as well. There are three state parks there in Mccurtain County in the southeast corner of the state. I was headed toward Beaver Bend – and it was just a few miles further to the motel in Broken Bow.

Many parks have different areas. Beaver Bend has a few different roads into it – and they dead end at Broken Bow Lake. The first road I tried – didn't work – high QRN anywhere I could find a spot to stop and not many places where I could park. Tried the second road after 10 mile detour and found a spot on the side of the road I could pull off and run. Did the bands.....20M SSB turned out to be very good with a 15Q, and that got me over easily the 44 barrier with the 3 cw bands. DX was still coming in late in the day to EU. I could spot from here which makes all the difference between reaching the 44 number or not even getting close.

Then....I guess I was tired – I failed to note Hochatown State Park a few miles away – drove to the motel and chilled for the day – about 4:30pm. It had already been a full day of driving and operating. The temp was up to the high 70s. Delightful. Around 5:30pm headed to the Sunlight Chinese Buffet – one of the few sit down places in the town. You had Subway, Pizza Hut, Sonic, Arby's fast food places but not much else. Had dinner and back to the Microtel Motel. (\$70).

On another trip, I'll have to head back to Hochatown. Dang. Seniorits or something like that must have occurred. There are half a dozen parks further north up in LeFlore County and points north so I'll get back this way.

Monday March 20 – First Day of Spring

Next morning I had breakfast at the Microtel at 6:30am. Dark outside. Had to wait for daylight and bands to be open in another hour. Watched TV news. I've learned to make half waffles – just fill part of the waffle iron – and that works well. Add in a bowl of raisin bran with cut up apple, coffee and juice.....and skipped all the sugar laden Danish type deals – and that's my breakfast. Maybe there were six cars total in the lot outside of the fairly large motel. Not prime tourist season, for sure.

Next up was the Little River National Wildlife Refuge. It has a couple of 'units'. The Google Map site showed an address right off the main road just south of town so I'd check that out. Dang – construction zone and nothing, absolutely nothing at that address other than the river! Yes, it was there – the river and banks – but no building, no sign.....I circled around twice and spied a dirt road I could get to right along the river – so got to it, and sat there and ran the NWR. Google Maps said I was in it. OK.....

and still in McCurtain County. Would I get enough contacts?

Usually, once you've run a county, half the county hunters have no interest in working you again, but I'd hope they'd work me again for the new park. I need the contacts even if they don't need the county! Give me a call! I don't care if you log it or not. It was early but 40M was doing well, 30M yielded 10 QSOs, and 20M had the DX rolling in, plus the east coast – for 30Qs. Way more DX on 20 than US stations at this early hour I went back again to the cw bands at the end and caught a few more, then a handful on 20 SSB and 10 on 40M SSB. Got to 44 easily here – and could spot. That seems to make all the difference between an 'easy run' and one you really, really have to work at it, without spots, to get to 44 with current flaky band conditions.

Kraig, KA2LHO, was running parks in FL over the weekend and continuing for a few days. He's set a goal to run all of FL by 2018, and is hitting parks along the way. We caught up a few times. I didn't seem to catch any other mobiles out and about other than him.

The route was then over to Red River County TX. A few folks needed that including N4CD for self credit! This was a twenty mile detour and then it was back toward Choctaw County and Raymond Gary State Park.

As I headed in to the park on a short road, the S meter sat at 40 over S9 along the road . Not good. You get to the park in two miles – and the S meter is still at S9 plus. There is a nasty power line along the road into the park – and in the park along the park roads. I drove around on all the roads in the park – looking for a less noisy spot – the 'least noisy' spot. Didn't really find one. Twenty minutes of looking and increasing frustration but the best spot was S6 on 20cw. Dang.....but I could spot.

I worked at it, and worked at it.....but it was HARD to hear much of anything through the high noise. On 30 and 40M it was S7 to S9 continuous on CW. This was the first 'failure' to reach 44. Only 24 contacts in the log. If you are thinking of running parks, definitely skip this one till they fix the power line problem! It's a fairly small park, too. Oh well. I still get credit for 'activation' but the park itself remains to be 'activated' in the future to reach a total of 44 Qs made from it. My IC706 radio has no DSP and just a 500 Hz filter. Perhaps DSP and a 250 Hz filter might have brought a few more through as I'm sure others were calling and I just couldn't hear them. Most of the DX are S1 to S5 at best under good conditions. Can't win them all.....Murphy won this one!

Last up was Hugo Lake State Park – same county - and had a nice run from a quiet park. Went down by the marina/boat launch area. Usually there's a parking lot at the boat

launch ramp and there was – not much activity going on on a Monday with the cold water temps so had the lot to myself. Facilities (rest room) nearby too! Put 70 in the log – Choctaw County OK.

After an hour and a half there – headed on home 3 hours away via Lamar County TX – to Fannin to the home county. Weather was great – hitting over 85 on the way home – and it was a new 'high' temp record for the first day of Spring in Dallas. Came home, unloaded the car and took a quick dip in the pool – up to 68 degrees – chilly – to celebrate the successful trip. First time in the pool this season!

On a down note, while stopped in two of the parks, putting out the county/park, I got a whiff of anti-freeze in the car – not good. I have to run with the engine running otherwise the radio gets very upset. So Wednesday the car off to the dealer to see what's up. It needs an oil change anyway. There's now 50K miles on the N4CD mobile that's 14 months old.

Thanks for riding along. 485 miles on this trip. Dunno when the next trip is – depends upon what they find on the car what problem/solution is needed. The 2007 Malibu went 177K miles with no breakdowns or expensive repairs. We'll see about the 2016 Malibu Ltd. So far it's been good.....but this isn't good at this point. Soon, it will need new tires, too.....

Update; Dealer found nothing wrong - checked out system. Oh, well....we'll see what happens.

Vermont QSO Party Results

Some interesting tidbits from the recent VT QSO party – I heard all of 1 VT station on CW here in TX on the vertical...conditions not great for me, and I didn't see any county hunter logs in the 107 submitted!

Logs From Outside VT		
Year	Stations	QSOs
2017	107	921

2016	82	671
2015	61	386
2014	74	511
2013	65	363
2012	38	171

Three of the five top finishers are new to the Vermont QSO Party and they raised the bar so much higher this year!

Grabbing the top spot in 2017 is Dan K0FD from Missouri. He ran up an amazing 55 QSO's and 27 multipliers for a new record score of 3119. Dan managed to work 13 of Vermont's 14 counties, the first time this has been done in as long as anyone can remember.

Second place goes to Garner KK4CLY from North Carolina, who operated with QRP to score 2304 points. Garner is still a teen and has scored high in several QSO Parties and is quite high on the DXCC list.

Laci OM2VL increased his record setting score from last year, going up to 2100 points. But it was only good enough for third place this year. I'm sure lackluster conditions on 40 and 80 meters between the U.S. and Europe at night certainly hurt his score. It was a real squeaker between second and fourth place and the logs came under tight scrutiny to determine the place.

Alan KA5VZG from Tennessee ended up a few points behind Laci to claim fourth place. Again it was real close - only a few multipliers separated second third and fourth place.

Rounding out fifth place is Dave WN4AFP from South Carolina, a regular in QSO parties and other contests.

- - -

I noted that half of the submitted logs had 3 or fewer contacts – this from stations outside VT who submitted a log.

Solar News IV

Historically weak solar cycle 24 continues to transition away from its solar maximum phase and towards the next solar minimum. There have already been 11 spotless days during 2017 and this follows 32 spotless days that occurred during the latter part of 2016. The blank look to the sun will increase in frequency over the next couple of years leading up to the next solar minimum - probably to be reached in late 2019 or 2020. By one measure, the current solar cycle is the third weakest since record keeping began in 1755 and it continues a weakening trend since solar cycle 21 peaked in 1980. One of the impacts of low solar activity is the increase of cosmic rays that can penetrate into the Earth's upper atmosphere and this has some important consequences.

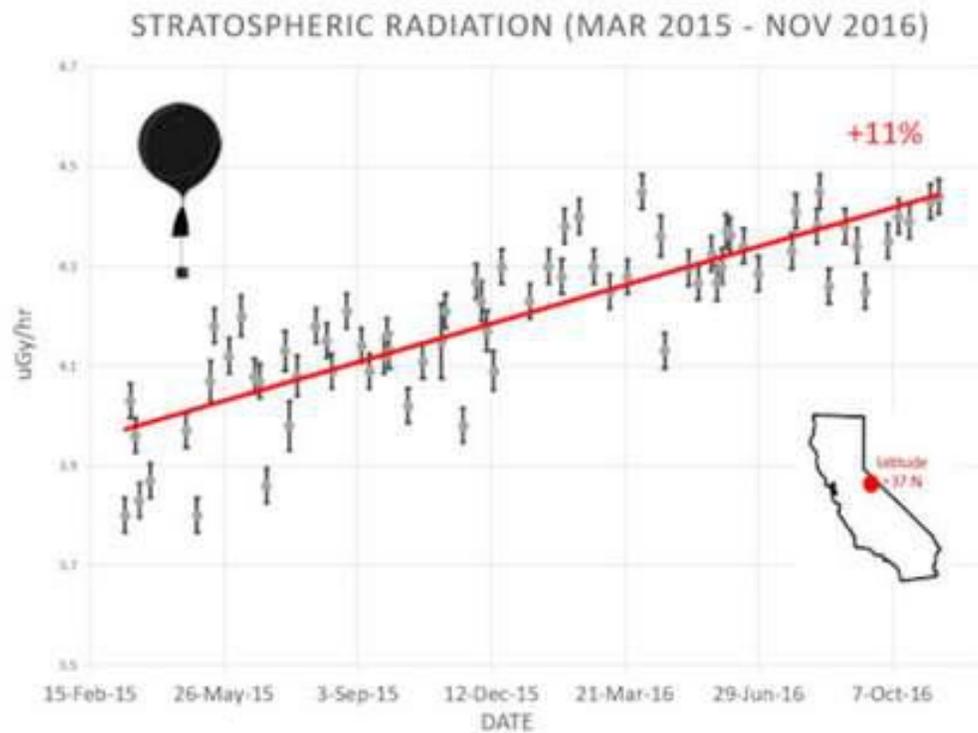
Third weakest solar cycle since 1755

A recent publication has analyzed the current solar cycle and has found that when sunspot anomalies are compared to the mean for the number of months after cycle start, there have been only two weaker cycles since observations began in 1755. Solar cycle 24 began in 2008 after a historically long and deep solar minimum which puts more than eight years into the current cycle. The plot (below) shows accumulated sunspot anomalies from the mean value after cycle start (97 months ago) and only solar cycles 5 and 6 had lower levels going all the way back to 1755. The mean value is noted at zero and solar cycle 24 is running 3817 spots less than the mean. The seven cycles preceded by solar cycle 24 had more sunspots than the mean.

One of the consequences of extended periods of low solar activity is that it can result in an increase in stratospheric radiation. Specifically, as sunspot activity goes down, there is an increase in cosmic rays that penetrate into the Earth's upper atmosphere. Cosmic rays are high-energy photons and subatomic particles accelerated in our direction by distant supernovas and other violent events in the Milky Way. Usually, cosmic rays are held at bay by the sun's magnetic field, which envelops and protects all the planets in the Solar System. But the sun's magnetic shield is weakening as the current solar cycle heads towards the next solar minimum and this allows more cosmic rays to reach the Earth's atmosphere.

Spaceweather.com has led an effort to monitor radiation levels in the stratosphere with frequent (almost weekly) high-altitude balloon flights over California. The findings

confirm the notion that indeed cosmic rays have been steadily increasing in recent months as solar cycle 24 heads towards the next solar minimum. In fact, there has been an 11% increase of stratospheric radiation since March 2015 into late 2016. The sensors that are sent to the stratosphere track increasing levels of radiation by measuring X-rays and gamma-rays which are produced by the crash of primary cosmic rays into Earth's atmosphere. The increase in the penetration of cosmic rays into the Earth's atmosphere is expected to continue for years to come as solar activity plunges toward the next solar minimum expected around 2019-2020.



Some researchers have held the belief that cosmic rays hitting Earth's atmosphere create aerosols which, in turn, seed clouds and thereby help in the formation of clouds. This would make cosmic rays an important player in weather and climate. Other researchers, however, have been dubious. The skeptics have maintained that although some laboratory experiments have supported the idea that cosmic rays help to seed clouds, the effect is likely too small to substantially affect the cloudiness of our planet and have an important impact on climate.

A study published in the Aug. 19th, 2016 issue of Journal of Geophysical Research:

Space Physics supports the idea of an important connection between cosmic rays and clouds. According to spaceweather.com, a team of scientists from the Technical University of Denmark (DTU) and the Hebrew University of Jerusalem has linked sudden decreases in cosmic rays to changes in Earth's cloud cover. These rapid decreases in the observed galactic cosmic ray intensity are known as “Forbush Decreases” and tend to take place following coronal mass ejections (CMEs) in periods of high solar activity. When the sun is active (i.e., solar storms, CMEs), the magnetic field of the plasma solar wind sweeps some of the galactic cosmic rays away from Earth. In periods of low solar activity, more cosmic rays bombard the earth. The term “Forbush Decrease” was named after the American physicist Scott E. Forbush, who studied cosmic rays in the 1930s and 1940s.

The research team led by Jacob Svensmark of DTU identified the strongest 26 “Forbush Decreases” between 1987 and 2007, and looked at ground-based and satellite records of cloud cover to see what happened. In a recent press release, their conclusions were summarized as follows: “[Strong “Forbush Decreases”] cause a reduction in cloud fraction of about 2 percent corresponding to roughly a billion tonnes of liquid water disappearing from the atmosphere.”

Other impacts of cosmic rays

Finally, in addition to its possible impact on clouds and climate, an increase in cosmic ray penetration during periods of low solar activity can make this a more dangerous time for astronauts as the increase in potent cosmic rays can easily shatter a strand of human DNA. Also, during years of lower sunspot number, the sun’s extreme ultraviolet radiation (EUV) drops and the Earth’s upper atmosphere cools and contracts. With sharply lower aerodynamic drag, satellites have less trouble staying in orbit— a good thing. On the other hand, space junk tends to accumulate, making the space around Earth a more complicated place to navigate for astronauts.

Final thoughts

The monitoring of cosmic rays by spaceweather.com is now going global. In recent months, they have developed launch sites in three continents: North America, South America and in Europe above the Arctic Circle. The purpose of launching balloons from so many places is to map out the distribution of cosmic rays around our planet. Vencore Weather will continue to monitor their findings over the next several months as solar cycle 24 heads towards the next solar minimum. For more information on this study visit the “Intercontinental Space Weather Balloon Network”.

Meteorologist Paul Dorian
Vencore, Inc.

Michigan Mini

Don't miss out! Great get together planned in April this year in Michigan for the mini.
Here's the list so far of who has signed up:

K8ZZ Ed, Topeka, KS
Rev Kate, Topeka, KS
W8TVT Joe, Traverse City, MI
N8RRR Janet, Traverse City, MI
N8HAM Jim, South Lyon, MI
WQ7A Terry and Bonnie, Yelm, WA
KB0BA Lowell, Blue Grass, IA
N0XYL Sandra, Blue Grass, IA
WG9A Bill and Sandy, Batavia, IL
AB7NK Mary, Cordes Lake, AZ
K7SEN Neil, Cordes Lakes, AZ
AA8R Randy, Grand, MI
W8TAX Patti, Grand, MI
K8OOK Mike, Grand Rapids, MI
N8IPG Nancy, Grand Rapids, MI
KD9ZP Gene, Fond du Lac, WI
K9FDL Dottie, Fond du Lac, WI
W4SIG Kerry, Collierville, TN
NM1G Chuck and Sandy, North Kingstown, RI
N8KIE Bob, Clarkston, MI
N8RLJ Jaci, Clarkston, MI
W9OP Mark, Neenah, WI
W9PIP Joan, Neenah, WI
WA9DLB Tony and Helen, Barrington, IL
K8EMS Mike and Sherry, Gladstone, MI
NN9K Pete, Colona, IL
N9DQS Nancy, Colona, IL
K8AO Duane and Judy, Gladstone, MI
N4CD Bob, Plano, TX

WA3QNT Bob and Jackie, Franklin, PA
K5GE Gene and Mary Ida, Seguin, TX
NF0N Mike and Dianne, South Sioux City, NE
N9QS Roy and Bonnie, Collinsville, IL
N8WQT Dori, Midland, MI
K3IMC Don, LaGrange, GA
KJ4NIT Jean, LaGrange, GA

Nearly 50 coming and more signing up all the time! Come join the fun. April 27-29.
See the marac.org page for latest updates.

Awards Issued

USA-PA 'K' prefix

Karl, K4YT

3/7/2017

Events for County Hunters

MI Mini – in Traverse City MI – hosted by Ed, K8ZZ and Joe, W8TVT at the nice Holiday Inn. They'll be the usual dinner/banquet, and think about what you can bring to put on the prize table for exchange. Maybe fish fry night, too? The weather is usually decent at that time a year in 'early spring' that way. **April 27-29.** Time to sign up – it's

this month! See you there!

DAYTON HAMVENTION – May 19th (Friday) through Sunday May 21 – Xenia OH – new location 15 miles east of Dayton – in Greene County at the Fairgrounds. Heck, Greene County might become as popular as Montgomery County OH in the past! You might collect “100 Stars” there! Hi hiTime to get your mail order in for tickets so you are prepared – and also save \$5/ticket versus the 'door price' on the day of the hamfest. County Hunter Forum Friday afternoon at 4pm in Room 2!

National Convention – Colorado Springs – Sept 27 – 29 hosted by Pat, N0DXE and Barry, N0KV. You can sign up now!

April 1 1400z to Apr 2 0200z

Mississippi QSO Party

RS(T), county or SPC

www.arrlmiss.org

Apr 1 1400z to Apr 2 2000z

Missouri QSO Party

RS(T), county or SP or “DX”

www.w0ma.org

Apr 1 1400z to Apr 2 2000z

Texas State Parks on the Air

RS(T), park abbreviation or SPC

www.tspota.org

Beware SP DX contest this weekend too

- - - -

Apr 8 1400z to Apr 9 0200z

New Mexico QSO Party

Name, county or SPC

www.newmexicoqsoparty.org

Apr 8 1800z to Apr 9 2359z

Georgia QSO Party

RST, county or SPC

www.georgiaqsoparty.org

- - - -

Apr 15 1600z to Apr 16 0400z

Michigan QSO Party

Serial, county or SPC

www.miqp.org/Rules.htm

Apr 15 1800z to Apr 16 1800z

North Dakota QSO Party

RS(T), county or SPC

w0nd.com

Another European DX contest weekend, too

- - - -

Apr 22 1400z to Apr 23 2300z

Nebraska QSO Party

RS(T), county or SPC

qcwa.org/chapter025.htm

- - -

Apr 29 1600z to Apr 30 2159z

Florida QSO Party

RS(T), county or SPC

www.floridaqsoparty.org

That's all folks! CU next month.

