

# County Hunter News

January 2021  
Volume 17 Issue 1

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. We also cover some park chasing activities these days. 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, 10.124.5, 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](http://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://marac.org/awards.pdf>

There is a lot more information at [www.countyhunter.com](http://www.countyhunter.com) . Please check it out.

Back issues of the County Hunter News are available at [www.CHNewsonline.com](http://www.CHNewsonline.com)

De N4CD, Bob Voss, Editor (email: [telegraphy@verizon.net](mailto:telegraphy@verizon.net) )

## Notes from the Editor

### N4CD Rumbblings

1 ) **Sunspots** – We got sunspots! The sun has finally come alive and the sunspot number was in the 30s.....but it faded during December, and at one point reaching ZERO. After a day or two at zero, another sunspot appeared. Solar Flux has dropped into the '80' region. Better than six months ago but not near the recent peak of 100!

2 ) **COVID world.** Optimistically, seniors over 74 might be in line for vaccines in a month or two. My doc said 'maybe late January' - but we'll see. Various groups are vying for priority. Of course, the health care workers go first – then first responders. Right now, vaccine is being sent to nursing homes and most of those folks are over 80. Infections are rampant and hospitals straining to keep up with normal 'accident' victims, heart attack folks, etc, plus the COVID patients. I've been hunkered down other than day trips. Around here, we are setting records for infections, records for hospital use, and of course, more and more deaths.

Will MARAC Mini in late April happen? Depends if enough seniors can get it by end of Feb/mid march – takes 2 shots 3 weeks apart and then another 5-10 days for immunity to build up. So hopefully(!) we'll be set for late April Michigan Mini – and of course, Dayton in late May. Might not have enough to roll out to everyone by then, though. Even though you get the vaccine – still recommended to 'socially distance' and take precaution till just about everyone gets the vaccine – and of course, while it's 95%

effective, that leaves 1 in 20 vulnerable. There is also a question of can you give it to someone else by being asymptomatic yourself? TBD, it seems.

My trips have all been day trips – often with zero stops for lunch – bring it along.

## On the Road with N4CD I

Once again the road didn't get too far from home. On Saturday Nov 28, Turkey Day weekend, I headed over the local park to see how well the sunspots were doing and check out the CQ CW DX contest to see if I could put a few DX stations in the log. The Solar Flux was over 100 and sunspots hitting 40+. We're ramping up! There's a zillion people on cw with folks all the way up to 14150 in the contest. It's a long way to EU from TX – better to be up north where the signals are S9. But you never know with the solar flux above 100 and the sunspot number in the 30s.

There have been over 11,000 QSOs from this park – KFF/K-4423 – so it's not 'rare' but there are a lot of new park chasers. Had good runs on 17M SSB with 85 Qs and lots of new calls! Ran 17m CW for a half dozen, and caught a few DX on 15 M cw. Put a few in the log on 15M SSB but not too great yet at least from here- long skip so just hear the NW corner and NE corner of the US at best. Did put 15 DX stations in the log, and 10 Park to Park contacts. Got hungry and headed home for late lunch. 112 QSOs from here. Bands are picking up – 17M excellent.

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On Sunday, Nov 29, went somewhere different – over the Cedar Hill State Park – KFF/K-2996 SW of Dallas. When it's not rush hour, it's a bit over an hour with lots of driving at 65-70 mph and \$5 in tolls each way right on down through the heart of the Dallas Metroplex. Don't try this at rush hour as it could be 2 or 3 hours to get there.

But....if there's an accident, all bets are off. Today was one of those days. At 7:30am left home, zipped on down the Dallas Tollway to the Beltway 635 west which is 4 lanes each way. Got about 3 miles along there and came to a screeching halt. Sat, sat and sat for 40 minutes and went all of 100 feet. Hmmm....traffic accident ahead. They were routing traffic off the highway onto the exit – which crosses a major cross street

highway and apparently no traffic control – it moved 1 mph at best. Probably 4 or 5 cars made it through the light there and there were a thousand cars 3 lanes wide just on the access road getting there. Never got to the exit as did most of the 4 lanes of traffic, likely now backed up 20 miles. Finally, all the lanes opened and it was back to open highway. Arrived three quarters of an hour late but got to work quickly. Most of this park is closed off. Several of the HQ staff and gate people caught COVID and the rest were in quarantine – so no one at the gate, and more than half the park closed off, and no new camping permits. Just a few previous camping registrations honored. However, there are decent spots to run from in the park. Headed to the 'farm' parking area. Only one other car there on this cold, drizzly Sunday. . Weather was 48F and light drizzle at times and gray skies and 100% humidity otherwise.

17M SSB was good again. Chased a few DX stations on 20 and 15M CW, and worked half a dozen 'park to park' contacts. Over 120 contacts today from there. It's had 1700 QSOs before, but there are lots of new chasers. One was a brand new /AG who just got his license yesterday! He was excited to work someone with his 20w radio. (Lots of folks buying the Xiego 20W radio these days – good for small park activations off battery – SDR architecture – made in China.).

Around 11:30 am, got hungry and decided to head home. Only took an hour to get home at 70-75 mph – traffic moving 5-10 over everywhere. Not sure everyone was going but lots of traffic on the roads. Still 48F and not too much sun. Expect first freeze in two days and high temps in the 50 degree range all week with lows near 30F. Winter has arrived in TX.

## Sunspot News I

In direct contradiction to the official forecast, a team of scientists led by the National Center for Atmospheric Research (NCAR) is predicting that the Sunspot Cycle that started this fall could be one of the strongest since record-keeping began.

In a new article published in Solar Physics, the research team predicts that Sunspot Cycle 25 will peak with a maximum sunspot number somewhere between approximately 210 and 260, which would put the new cycle in the company of the top few ever observed.

The cycle that just ended, Sunspot Cycle 24, peaked with a sunspot number of 116, and the consensus forecast from a panel of experts convened by the National Aeronautics and Space Administration (NASA) and the National Oceanic and Atmospheric Administration (NOAA) is predicting that Sunspot Cycle 25 will be similarly weak. The panel predicts a peak sunspot number of 115.

If the new NCAR-led forecast is borne out, it would lend support to the research team's unorthodox theory - detailed in a series of papers published over the last decade - that the Sun has overlapping 22-year magnetic cycles that interact to produce the well-known, approximately 11-year sunspot cycle as a byproduct. The 22-year cycles repeat like clockwork and could be a key to finally making accurate predictions of the timing and nature of sunspot cycles, as well as many of the effects they produce, according to the study's authors.

"Scientists have struggled to predict both the length and the strength of sunspot cycles because we lack a fundamental understanding of the mechanism that drives the cycle," said NCAR Deputy Director Scott McIntosh, a solar physicist who led the study. "If our forecast proves correct, we will have evidence that our framework for understanding the Sun's internal magnetic machine is on the right path.

The new research was supported by the National Science Foundation, which is NCAR's sponsor, and NASA's Living With a Star Program.

Sunspot Cycle 25 starts with a bang; what will follow?

In McIntosh's previous work, he and his colleagues sketched the outline of a 22-year extended solar cycle using observations of coronal bright points, ephemeral flickers of extreme ultraviolet light in the solar atmosphere. These bright points can be seen marching from the Sun's high latitudes to the equator over about 20 years. As they cross the mid-latitudes, the bright points coincide with the emergence of sunspot activity.

McIntosh believes the bright points mark the travel of magnetic field bands, which wrap around the Sun. When the bands from the northern and southern hemispheres - which have oppositely charged magnetic fields - meet at the equator, they mutually annihilate one another leading to a "terminator" event. These terminators are crucial markers on the Sun's 22-year clock, McIntosh says, because they flag the end of a magnetic cycle, along with its corresponding sunspot cycle, -- and act as a trigger for the following magnetic cycle to begin.

While one set of oppositely charged bands is about halfway through its migration toward the equatorial meetup, a second set appears at high latitudes and begins its own migration. While these bands appear at high latitudes at a relatively consistent rate -- every 11 years -- they sometimes slow as they cross the mid-latitudes, which appears to weaken the strength of the upcoming solar cycle.

This happens because the slowdown acts to increase the amount of time that the oppositely charged sets of bands overlap and interfere with one another inside the Sun. The slow-down extends the current solar cycle by pushing the terminator event out in time. Shifting the terminator out in time has the effect of eating away at the spot productivity of the next cycle.

"When we look back over the 270-year long observational record of terminator events, we see that the longer the time between terminators, the weaker the next cycle," said study co-author Bob Leamon, a researcher at the University of Maryland Baltimore County. "And, conversely, the shorter the time between terminators, the stronger the next solar cycle is.

This correlation has been difficult for scientists to see in the past because they have traditionally measured the length of a sunspot cycle from solar minimum to solar minimum, which is defined using an average rather than a precise event. In the new study, the researchers measured from terminator to terminator, which allows for much greater precision.

While terminator events occur approximately every 11 years and mark the beginning and end of the sunspot cycle, the time between terminators can vary by years. For example, Sunspot Cycle 4 began with a terminator in 1786 and ended with a terminator in 1801, an unprecedented 15 years later. The following cycle, 5, was incredibly weak with a peak amplitude of just 82 sunspots. That cycle would become known as the beginning of the "Dalton" Grand Minimum.

Similarly, Sunspot Cycle 23 began in 1998 and did not end until 2011, 13 years later. Sunspot Cycle 24, which is just ending, was quite weak as well, but it was also quite short -- just shy of 10 years long - and that's the basis for the new study's bullish prediction that Sunspot Cycle 25 will be strong.

"Once you identify the terminators in the historical records, the pattern becomes obvious," said McIntosh. "A weak Sunspot Cycle 25, as the community is predicting, would be a complete departure from everything that the data has shown us up to this point.

## On the Trail of Regens

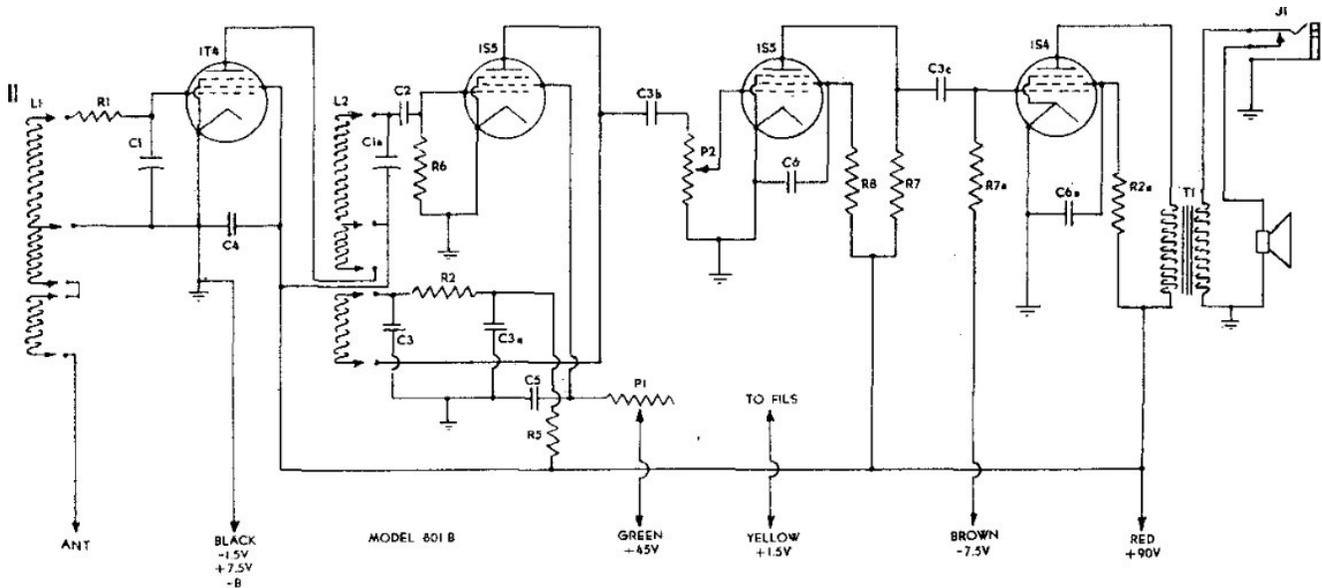
An interesting item showed up on Ebay this month from the McMurdo Silver Company. It's a Model 801 HF regenerative receiver from the 1947 time frame. It was sold in the ads with a companion Model 701 crystal controlled low power transmitter for those seeking a 'matching pair'.



There were two versions of this. One used 1.5v tubes – for battery operation. The other used 6v tubes for operation of a separate power supply off the a/c line.

The circuit was a decent design with 7 sets of plug in coils to cover from 555 KHz to 60 MHz with those coils. The radio had two plug in coils for each range. The first stage was a tuned RF amp, followed by a pentode regen detector, then two stages of audio amplification.

This radio came with one set of coils as listed on Ebay.



Regen control is via varying the screen voltage on the pentode detector. There is no 'fine tuning' but looks like there is a very good 'vernier' dial. Takes 90v of battery for the B+, and 1.5v at a couple hundred mils for filament voltage.

(Note: 90V batteries are very tough to come by and very expensive these days. Weren't all that cheap in the 1940s either. Most hobbyists today either build a little power supply, or use ten 9v batteries hooked together, or build up a 6 to 90v dc/dc converter. Run off a 6v Gel Cell. Only takes a couple mills at 90v if you don't use the speaker and use earphones. )

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There was a matching transmitter – the model 701. It would run 75w input CW and 30W AM modulated input. It needed 6.3 volts at 2 amps and 350-700v for the B+. It used a 807 in the output stage, driven by 2 6AQ5s and a 6AQ5 modulator. It needed an external power supply. You see them occasionally advertised on Ebay. Used plug in coils to cover from 3.5 to 54 MHz with plug in crystal control. I don't think they offered a power supply. You had to make your own – or use something now like a Heath HP23 from the SB series radios.

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There's not a lot of 'new' regens popping up on Ebay. Many were traded at Antique

Wireless Conventions and some big hamfests like Dayton where some collections were sold off – but even then you see things like the National SW-3 (made by the tens of thousands), the Knight Kits, the Heathkit, Lafayette, etc, from the late 50s and 60s that came in for the 'short wave' listening craze in the 1950s/60s. (Long long before the internet).

Then again, other than nostalgia, there's not a whole lot of shortwave broadcasts to listen to these days but there's half a dozen new kits – from MFJ and others – where you can build yourself a nice little regen that performs well. Even a 2 tube version from Antique Radio for about \$42. Or off Ebay for 2 tube version.

## On the Road with N4CD II

Well, things are not getting better health wise. Hunkered down here with very limited trips during the week or weekend usually. Things here, like everywhere else in the country, have gone from bad to worse with record cases of COVID. In TX, things are cut back – bars closed once again and restaurants back to 50% indoor seating with at least 6 foot separation. In CA, there's another three week total lockdown including Xmas and it's coming all across the country. Around here, everyone wears masks at the grocery, even running into the convenience store, and just about everywhere else. That's not true elsewhere.

The Chevy Malibu was in need of an oil change so off to the dealer for that during the week. Also needed a state inspection – so took care of that. Both socially isolated to the max degree possible with very limited contact, shields between you and cashier, etc. Good size waiting room and chairs spaced out about 8 feet or more from next. I sat by myself over in a little hallway with no traffic for the 35 minutes that it took for the oil change. Picked up two new headlights – one had burned out – so replaced them both (\$21 each). I put on lots of miles with the headlights on to keep the car voltage up. If you don't have them on, usually the car voltage settles at 12.7v or so which doesn't make my IC-706 happy. Turn on the lights at it's 13.4-6 volts. Probably 1,000 plus hours on those lights before one burned out.

Another weekend was coming up. Where could I take a day trip and hit some less run parks – or at least ones I haven't been to in a few months. Any direction would be long

day trips from dawn to dusk as parks are spaced miles and miles between around here. In some states, you can throw a rock into 30 parks in a 50 mile circle.

Winter was here with shorter daylight hours – so that was a limiting factor. I hadn't been to some of the parks in southern OK for a while so that was it. Also, the locals around here – who put out parks within 60 miles of me all the time along with me, don't head that far north. It's 70 miles just to reach the OK border.

So, December 5, Saturday, I headed out at 6:30am a bit before the sun rose driving up route 75 to the TX/OK border over the 'free bridge'. It's easy well lit 8 lane highway so no problem in 'the dark' in the morning – good lighting. The sun didn't show till 7:28am. Along the way, the thermometer in the car bounced around mostly in the low 30s. Last week, far west OK had 12 inches of snow in a nasty storm – that carried up into western KS. Today, it would likely snow in the TX panhandle later on. Hmmm....well, today the forecast was for near 60F highs with sun along the route. You won't catch me headed into places where it will snow 12 inches on top of me, no way!

The speed limit is 60 mph to the Collin County border, then heads to 75 mph. Traffic light so made good time. Only a few trucks on the road headed up US75 to US69 in OK.

### **Lake Texoma State Park 2791 – Marshall County OK**

About 1.5 hours from home, I arrived at Lake Texoma State Park. This was a State Park – then it wasn't as they sold it to a commercial interest who promised to keep the campground running. That group went bankrupt so the state took it back again. OK has a bad case of vanishing parks as OK doesn't have the money to keep them running and ten have disappeared over the last 15-20 years. There is no entrance fee at most – only one or two have one.

Old timers will recall we used to have Minis here back in the 1980s and early 1990s at the lodge (no longer there).

Despite the propagation banner that said conditions were 'good' on 20M, I didn't find them good. Tried to get a run going on 20M SSB – but the band didn't cooperate. Lots of stations on, hard to find/keep a frequency, and that just didn't work for more than a dozen or so. Did hook up with a few Park-to-Park contacts for those who could keep a frequency. Guess you need a bigger antenna like an inverted vee from the park to get out vs a mobile antenna on a car. Dunno.

Just five DX stations on 20M cw despite the alleged 'good conditions'.

Tried 17m SSB but no luck there either – just a handful, not like last week further south in TX when I put 60 in the log. Maybe I had moved 'too far north' (200 miles) and the skip zone was too long for most of US? Just did CW on 20/30/40 and headed to the next after 86 contacts.

I usually spot on ch.W6RK.com if it is a new county. Did this in the five counties I was in for the county hunters. Spot on the Parks on the Air site as well which brings the park chasers.

### **Tishomingo National Wildlife Refuge KFF/K-0491 – Johnston County**

About 45 minutes away, you can reach this NWR in Johnston County OK. There's lots of places to run this but the best place is the HQ area (which is shut down for COVID) with lots of spots to run – and good internet connectivity for spotting yourself. Activations go back to 2016 and the NPOTA program.

It's large at 16,000 acres and was established to protect birds on the 'flyway' from down south to up north. It's not far from Lake Texoma – a huge lake between Texas and OK created by the damming of the Red River – and lies on the 'Washita Arm' of the lake – actually more like a river/swampy area. No hunting here but great fishing.

It's been a year since I've been there and to date, only just over 200 QSOs from there over the past 4 years in the POTA database. I'm sure there were many times that in LoTW for this site but unless folks upload those old logs, it doesn't count. You'd expect a lotto be in the log but it wasn't to be. No one had been there in over a year! The band seemed to go a bit flat despite the 'good conditions' on the propagation banner. I worked all the bands, never could get a run going on SSB, and finished with 55 QSOs. Would have liked that to be double that. Oh well.

### **Texoma Washita Arm WMA K-6378 (POTA only) Johnston County**

Not far away is this Wildlife Management Area – run by the folks of the Tishomingo NWR. It's not hard to find, but all the signs still say “Tishomingo NWR” but you can tell as there are hunters there in droves – and parking areas for cars – with signs indicating 'hunting allowed'. No hunting in the actual NWR itself. You know you're in the WMA with the hunting signs where it's allowed. Only one other activation has been made from here – by N4CD a year ago! Should be rare, right? Lots of contacts? Not

to be today! 71 QSO in the log – not bad but not what you'd hope for. Never could get a run going on 20M SSB – band just full of a zillion stations including a dozen 'park activators' – most of whom I could not hear! Worked a few of them, though. On Saturday morning, there are half a dozen 'nets' and other frequencies tied up with 'groups' of this or that affiliation or just friends – and they have big signals usually from beams and KW amps. Hard to compete or even be near many of them in frequency as they are S9 plus 40.

Hunting is allowed here and there were half a dozen pickup trucks parked in the small lot at the end of the road where the directions took me. When it's not hunting season, you've probably got it all to yourself. Many access points here so easy to run. When not hunting season, there are two primitive camp areas you can use. There's even a 100 yard rifle range here in the 13,600 acres. You'll find some bald eagles here if you're a bird watcher.

### **Lake Murray State Park – Carter County OK - K/KFF-2790**

Backtracking a bit, then heading west you'll arrive at Lake Murray State Park. It's got lodges, camping areas, beaches and tons of stuff to do in nice weather. It's a lot quieter in the winter and especially with the COVID rampant now. Pulled in and whipped off 49 QSOs, mostly on CW. 20M SSB still jammed up with nets, POTA activations, etc. There have been over 700Qs made from here – many in 2020 and I've been here half a dozen times as it's right off I-35. Easy to stop by when you're on the interstate for some QSOs. It was a new county so a few county hunters showed up – and I appreciate the QSOs even if you don't need the QSOs.

I added a few new calls to the log on cw. Most of the park chasers are on SSB. It was getting later in the winter day so didn't stick around too long or try to find a usable frequency on 20m SSB after several failed attempts. With the short days, if I didn't stick around I could squeeze in one more park today.

49Qs in the log – nearly all on CW.

### **Love Valley WMA – Love County – K-6358 /KFF- 4815**

Just before you reach the OK/TX border you can find the Love Valley WMA which lies along the Red River. It's a lot of swampy area, including the road at times, so take caution on when you go there – avoid it after major downpours! It's got different numbers in the two different systems. Watch where you park, too, as lots of mud in the

parking areas!

There have been 405 previous QSOs from here with half of them in 2020 and mostly on SSB – so not 'rare' for sure but you never know for new comers and CW folks. Been here a few times before.

Pulled in about 3pm and didn't want to stick around too long as I don't like driving at night these days and had to be gone in 30 minutes to beat the sunset home! 39 QSO's in the log.

From here it was a bit over 1.7 hours to home in moderate traffic on I-35E as you approached the Dallas Ft Worth “MetroPlex” on 8 and 10 and 12 lane highways. Cars everywhere, not sure where they are all going, but 8 main lanes of traffic but still moved 70 mph for the most part. Toll express lanes also open(two of them) plus the side access roads (2 more lanes on each side).

Home at 4:45pm – beat the sun – after 261 miles of driving through the OK countryside and long 150 miles of interstate type highways. Hope you caught me in needed counties and parks. Long day for sure for me! (had to skip two other parks - just not enough time. Maybe another trip? ). Sunset here not much after 5pm these days.

Thanks for riding along!

## On the Road with N4CD III

**Saturday December 12, 2020**

Another weekend – another one day trip to get out of the house during the COVID mostly stay at home routine. I could take a one day trip to some less run parks to the southeast of here.

Put the antennas on the car at 6:30am in the dark (I thank the neighbors for their security lights which make it easy) and headed out about 6:48 to Purtis Creek State Park about 90

miles away. So it was down through the Metroplex on 8 and 10 lane highways with weekend light traffic and no accidents to route 175 for another 50 miles. All 60-70 mph speed limits. Once I got on US 75 about five miles from the house there was no more traffic lights and one stop sign to the park. Made good time and arrived at Purtis Creek SP KFF/K-3050 in the system in Henderson County TX.

These days you reserve ahead of time on line – easy to do – and just show your printed off pass at the gate. They ask your name, check their list and you are on the way. “No contact” entry. It was 39F outside when I arrived at the 'fishing pier' area (and boat launch area). Lots of parking but still a half dozen boat trailers there – and a few folks out on the lake with 20 mph breeze and near freezing temps! Brrrr. Even two paddling canoes.



Naturally, I sat in car with heat on and proceeded to put out the park. Went to 10m and worked a bunch of stations in FL which seemed to be the only area coming in. One in CA but that was it for the early hours. Filled in the log with 40-17M QSOs and finished after checking 10m again and adding in a few more. Spotted myself on ch.w6rk.com After 2 hours headed on out with 100 QSOs. Wasn't much warmer leaving the park,

either – in the low 40s.

I could head home, or take a 50 mile detour to get to Tawakoni Wildlife Management Area – K-6605 in Hunt County. Headed up through Rains and ran it CW. Have to stop to spot so usually only spot on one band and hope others follow me around. Found out later some needed in on SSB but the text message arrived 30 minutes after I was there. That didn't help!

Pulled into the small parking lot for Tawakoni WMA , POTA only K-6605 and checked 10M CW again. Put a few more in the log. This was the weekend of the ARRL 10M contest. Chased a few Park to Park stations. I'm always hearing K7SEN going after the parks. He's busy all the time hunting down the different parks and on a given weekend, maybe 50-60 parks show up. Hearing them is sometimes a problem as some stay down on 40M 99% of the time, but from 'out west' it takes 20M, 17M or 30M.

I've run this before once or twice, but there's not all that much activity so had a good run. Turns out that 3 days ago, it also was added to the WWFF system as KFF-5552 so serendipity as I uploaded the log to that database.

After two hours, decided I had enough fun and headed on home. The route goes right by my 'local park' KFF-4423 so took a one mile detour off the President Bush Tollway to get to it. Tried 10M again and added in 5 more on 10M including NV, WA, and a LU in Argentina. Ran 30m and chased a few 'park to parks' on SSB and headed on home after a long day. Home just before 5pm. Sunset is not much later. Long day of 215 miles plus 3 park stops. Didn't stop for lunch which was a small individual bag of 'Skinny Pop' popcorn (100 calories) and water.

### **Sunday December 13, 2020**

Woke up to 41F and rain. It was going to rain on and off all day. What the heck. Just drove the Malibu over to the local park without the big antenna on the back and would try to see what was going on on 10M. I've got Hamsticks for 20M and a Hustler 52 inch mast with separate resonators for 10, 12, and 15m. I'd go with that. Arrived at the park and caught a few Park to Parks on 20M SSB, then went to 10M for the contest. Today was good with propagation to MI, SD, MN and lots more MN. One ON in Canada, then a few IL, one in IN. Worked 36 on 10M today – 50 overall for the weekend. I guess if you had a nice beam and some power, you'd have worked several hundred over the weekend from TX. DX coming in but too tough to overcome the big pileups on the ones coming through. Heard half a dozen states on backscatter including K5CM in OK, N8II in WV, both trying to work the DX by pointing south.

Propagation moved around so if you spent more hours on the band, you've have a good chance of working other directions. As it was, Saturday was mostly to FL. Sunday was good to the north to MN, MI. Left after 2 hours in the rain. I was the only one there in the park. Not too many crazy folks needing to walk the dog or go for a walk in the rain at 41F and a 20mph north wind in the park.

Thanks for riding along.

## ARRL 10 Meter Contest

Wow! Ten Meters was OPEN!!!! The big contest stations were on and folks with dipoles, beams, ground plane antennas were having a ball!

KM4FO, N2JJ, K4AMC, WA4PGM, AA8R. were busy working away – but had no comments on the 3830 contest reflector so not included below.... I'm sure a dozen or two county hunters were in there having fun!

WY0I on the CH Forum reported 371 QSOs. Many on the 3830 reflector had hundreds and hundreds of QSOs with the big guns in the thousands of QSOs.

From the 3830 contest reflector:

**LU2DX (Argentina) multi-op contest station 1200 CW 428 SSB 114 cw mults 85 ssb mults**

Great moments with friends at LosProfes station, as every year for this contest.

Many thanks to all of you for QSOs.  
Pile-ups with North America were fluid on Saturday.  
Europe and Japan were tough for us both days.

**NX5M Multi OP (Texas) 1059 cw qso 86 mults / 908 SSB 76 mults**

"Fun and torture. One EU in the log. Flashbacks of slow and boring moments of the past 3 years. Went for over an hour Sunday without a single qso and that would have

turned into two hours had it not been for a couple of locals that called in within the last 15 minutes before it was all over."

**AD4ES multi op FL - 964 cw 80 mults / 47 ssb 15 mults**

"Friday night was a real blast. High rates and operated until midnight Eastern. Europe could not be found Saturday but Sunday morning was a different story. Worked about 1 European per minute for 45 minutes. Saturday afternoon as well as Sunday afternoon was not productive."

**K4BAI - GA - 926 cw 66 mults**

Had high hopes for this contest. Station seemed to be working well except that the beam rotator would sometimes stuck. I was afraid to turn it too far to the South in case it would get stuck there. First night may have been the best night time conditions I have ever heard during a contest when the band isn't really open for DX. I experimented the second day and discovered that my new inverted L for 160M loads nicely on 10M and I could work the South Americans using it without having to turn the beam south. But, Saturday evening, disaster struck. Band conditions were not nearly as good as the first night. With the inverted L I had hoped to work the ZL and VK mults I missed Friday night. None heard the second night. And suddenly the SWR on my beam was infinite. No receive signals either. Tried 20M and it was the same. So there has been a catastrophic failure of my 50 year old TH6DXX. Faithful servant. I purchased it used from K3KG in 1973 and have had it up at two different locations ever since. Only problem was once having to the balun (TNX K1TO).

I have an 88' zepp and a Palstar ATV1500CV tuner. But it will not tune the zepp on 10M. It will tune on the other bands, so at least for a while I will have only the zepp on 20 and 15 and the inverted L for 160 on 10M. Maybe I can use the 40M dipole on 15 also. Started out to be a good score and now it isn't. But thanks for all QSOs and Seasons Greetings to all. 73, John, K4BAI.

**W0BH - KS - 483 cw 48 mults / 386 ssb 35 mults**

That was fun! Some nice runs on Saturday, but Sunday really opened up to the east. Just a few DX worked including V51WH. Near the end, a very faint KH6 called in.

Missed RI AR AK NE SD.

Worked QC ON MB SK in VE-land.

Thank for the fun!

73, Bob, w0bh

**NS2N - NY 185 cw 51 mults / 33 ssb 18 mults**

Enough activity to keep interest, but lots of ghost time.  
Sunday was a bad power line noise day, and noisy NB gave me a headache.

Thanks for the Qs guys

Paul , NS2N

**W9AV - WI - 320 cw 46 mults / 224 ssb 33 mults**

Great conditions Friday evening right up to 11 pm, good conditions Sunday morning, otherwise not much to do but debate how much assistance you can have and be unassisted. The hexbeam got a good workout for a change. Not much DX to be had.

**N8II - WV - 575 cw 75 mults / 415 ssb 57 mults**

I had a busy Friday, out most of the day. PY, CE, and LU went into the log on TE in the first 12 minutes. Sporadic E started here right around 0030Z into W5 and Mexico and at 0106Z my rate suddenly vastly improved. It was a pretty wild ride through 0450Z with probably the most intense widespread long lasting Es I have ever experienced in over 40 years worth of 10M tests! There was very short skip as close as SW VA, NC, KY, TN, and MI with the biggest volume coming from MN. For quite a while I could work all 4th, 5th, and 9th area states, and most 0's at the same time! Starting 0206Z I easily worked W1's on Es backscatter (quite rare on 10M) a sign of very intense Es. K0RF in CO was the first double hop Q, but the double hop improved at 0247Z on CW adding NM, UT, ID, and SK (VE5 very rare from here on 10). At 0304Z I found a VK4 and got through right away (that's about 5 hours 15 minutes past sunset) via Es to F2.

I didn't get any double hop on phone, but the QSO rates were great with a 106 hour at 03Z. There were still signals at 0450Z with over 390 Q's in the log, but activity and strength of signals drastically declined.

Saturday was a struggle, there was morning Es into the Gulf Coast area and TX, but many had already been worked. The best rate all day was 42 at 13Z. I started working Central America at 1410Z (TI,HP,TG) and worked V51 on both modes with a real struggle on CW (never heard ZS). I also found a local D4 on phone. Most of the afternoon was spent struggling to be heard in SA especially on phone, mucho grande pile ups on many. There was a fleeting weak West Coast opening around 1930Z working WA, CA, NV, and ID. TE to SA persisted through 24Z, but with few new Q's, and there was no evening Es. 260 Q's were added by evening.

Sunday was a better day. PI4DX was heard but never worked. From 1338-1403Z on CW I S&P'ed LZ5, F6, OQ4, 9A3, DL2, DK6, and 9A5. At 14Z there was intense F2 to the south, but it did not last very long. J7 was logged on SSB and a KP4 was 30db over 9 on CW. At 1430Z there was some weak Es into W1 and VE9, and some good Es that persisted most of the day into WI, IL, many IA, NE and MN, SD, MO, KS and OK. The big event was a good west coast opening starting around noon (17Z) which started with AZ. Some of the Q's could have been double hop Es. I logged many CA, NV, and WA stations along with CO, OR, ID, UT, AB, and BC. Despite efforts to move stations, no western VE's were worked on SSB. I stuck to those 4 point CW Q's as much as possible and there were quite a few. Best hour of day was 60 at 17Z. Some signals were loud, most were not. 340 Q's were added.

We were indeed very lucky to be blessed with so much sporadic E. The solar flux was only low 80's which should have severely limited F2 openings. Many days it has been impossible to work the west coast and SA was weak in the past week. The only non-local signal at 20Z one day post test is a weak LU beacon.

It may very well be that next year's results will be worse than 2020. Leave it to great activity to make so many Q's possible. I think activity from MN, NE, IA, KS, and MS was an all time high for this test. Too many ops repeated way too many times during exchanges. Also, lack of phonetics on phone slowed things down. Many thanks for the Q's and pulling out my sometimes weak signal.

73 and Happy Holidays, Jeff

**WB8WKQ - MI - 228 cw 46 mults/161 ssb 32 mults**

Unfortunately, missed Friday night and heard it was good. In fact, came home and checked 10, and it was open from midnight to 1 am local, at least. Made a quick 30 Q's. Saturday seemed "so-so" and the band seemed to die here around 3 pm local (2000z). Got up a little late on Sunday (can you see a pattern here for excuses?) so missed a little

bit. Only worked one EU (S53A, I think). But, Sunday seemed great to me compared to Saturday. The west coast was booming in and it was a lot of fun. I looked back on my previous scores and haven't done this well since 2017. It's making me think there's some hope still for us climbing back up the sunspot cycle. Thanks for all the Q's.

## Oil News

Global oil demand will rise in 2021, but not enough to surpass 2019 levels as the coronavirus pandemic continues to weigh on transportation fuel demand, especially jet fuel. According to S&P Global Platts Analytics, “Oil demand will rebound by more than 6 million barrels b/d in 2021, but consumption is still expected to be more than 2 million b/d below that of 2019’s 101.9 million b/d. The global middle class – the real engine of oil demand – faces continued pressures from wealth inequality and the ongoing COVID-19 cloud,” says Chris Midgley, Global Head of S&P Global Platts Analytics.

It was only to be expected that many of the world’s refiners would be pinched between low demand for finished products and rising inventories as the pandemic lockdowns continue to stifle activity. But the warm December that is expected this year is also threatening finished products demand. And it’s possible that many of the older, small refiners won’t survive at all.

According to IHS Markit, eleven US refiners are scheduled to close. The largest refinery in the U.S., Shell’s Convent, Louisiana refinery has shut down after it was unable to find an interested buyer. According to Reuters, the Dutch oil major is closing six more refineries because it cannot sell those refineries either. The largest US refiner, Marathon Petroleum, is set to close several refineries, including its Gallup, New Mexico, refinery and its refinery in Martinez, California. Japan’s Eneos Corp has shut its Osaka refinery.

The world is on track to run out of sufficient oil supplies to meet its needs through 2050, despite lower future demand due to the Covid-19 pandemic and the accelerating energy transition, according to a report by Rystad Energy. They say shortages will develop unless exploration speeds up significantly and capital expenditure of at least \$3 trillion is put to the task.

To meet global cumulative demand over the next 30 years, undeveloped and

undiscovered resources totaling 313 billion barrels of oil need to be added to currently producing assets. Rystad Energy calculates that to match this requirement, exploration programs will have to discover a worthy-to-develop resource of 139 billion new barrels of liquids by 2050, an impossible task if this decade's low exploration activity levels persist. The target is high because not all existing discovered volumes are profitable to develop.

Energy efficiency has become a victim of the coronavirus pandemic. This is the main takeaway from a new report by the International Energy Agency, Energy Efficiency 2020. In it, the authority lists the main challenges for energy efficiency in the context of the pandemic and warns that these need to be addressed. Otherwise, we could see a reversal in energy efficiency gains at the worst possible time—as governments strive to accomplish increasingly ambitious climate-related goals.

## Mobile Activity in December

At the start of December

Neil, K7SEN was running parks in Yavapai, AZ

Jack, WD4OIN, was in TN putting out counties

We had a few days of no mobile activity

Bob, N4CD headed up to OK for a county or two

A few more days of no mobiles

Rick, AI5P, was in Teller CO

Kerry, W4SIG, made a quick trip from TN to TX via AR and OK, and back later. While in TX, put out some other counties. Then back via OK and AR to TN a few days later.

Bill, K0DEQ put out counties in MO

Bob, N4CD, made a short trip to some counties SE of home county Collin.

K8ZZ spotted in KY on his way to OH. Says more to come.

Jack, WD4OIN, ran some far east NC counties.

Alan, W8OP, spotted running VA counties

Jerry, W0GXQ noted in KS before the big trips with K8ZZ and NF0N in IA and South Dakota

Ron, KB6UF, headed from LA to CA running them along the way.

Randy, AJ5ZX, made a nice trip from home county down to south TX along the border. Gave out LC WBOW on CW for Jim, N9JF.

Bob, N4CD, made another trip up to OK for more parks/counties to the Northeast.

Meanwhile, at press time, W0GXQ/NF0N were still very busy putting out SD counties and would be a few more days.

There were no state QSO parties – but other contests to snag counties including RAC, ARRL 10M, ARRL 160M, Rookie Roundup, etc. Oh, and the weekly CWT for those inclined to CW operation. Lots of parks on the air, too – probably 100 different ones this month.

## On the Trail of Regens II

If you have a CODAR radio, or a “H.A.C” radio kit from England, you're probably on the hunt for the Denco plug in coils that go with the units. Most used radios, if you are lucky, come with one coil, usually for the shortwave band 7-12 MHz or so. Every few months, a Denco 'green' coil (the one used in regens) shows up on Ebay UK.

Recently, this one for the broadcast band showed up – and I followed it – and would have liked to have 'won it'. Went for over \$50 for a single plug in coil!!!! Ouch.

Oh well, You can sort of make your own but these were good coils with iron cores so you could 'standardize' them all so your dial would work roughly the same as expected.

Most US radios used larger (still octal base) coil forms which are easy to wind yourself if so inclined, or often at flea markets for a couple bucks apiece. Or sets of 4 or 5 for \$20

I've got two H.A.C. Kit radios (Hear All Continent) one tube radios and one Codar radio that uses the 9 pin version (equally scarce). Never seen a Denco coil at Dayton, either, but you never know! Could have just missed them in the 100,000 items for sale at the Hamvention flea market. I don't get around as well as I used to!

Denco made coils for just about every radio – and every purpose from RF stages to IF stages to discriminator coils. Plug in, solder in. They're all color coded. I think white is IF. They went out of business 30 years ago. HAC disappeared in the 1980s after providing simple kits for 40 years.



Denco 'Green' Coil

## On the Road with N4CD IV

Wednesday December 16th rolled around, and instead of a visit to the local park, I decided to head out on a day trip to the north. It was 'winter' here with temps in the 30s, headed up to maybe 40 today. However, other than a small bit of drizzle the evening before, there was no major snow storm like that pounding the east coast – dumping up to 3 feet of snow in places! Southern OK did get a dusting of snow but that likely would be all gone by the time I got there. However, K8ZZ and W0GXQ were running up in NE and IA – in a snow storm. On the way there, Ed, K8ZZ got stuck in a ditch and had to call a tow truck to get him out.

So it was off to a new one – an ATNO just added in the WWFF system. Those WWFF only parks aren't as popular and sometimes it can be a challenge to get to the required 44 contacts to receive credit for activating it completely. The plan was to use the weekly CWT at 1900-2000 to fill in necessary QSOs if I didn't get 44 by the time it happened. Each week on 20M there's dozens and dozens of stations on for a one hour event zipping along at 25+ WPM. Most 30+ WPM. The exchange is simple. Name and QTH for non-members, Name and CW Ops Number.

### **Hagerman NWR KFF/K-0548 Grayson County**

On the way there, I could take a short detour to Hagerman National Wildlife Refuge right off Highway 82. So it was up route 75 early in the morn before dawn. About 60 miles later you reach highway 82 going east west and head west a bit, then a short detour off that to the NWR. Lots of space there. Put 114 QSOs in the log including a dozen DX from EU. Conditions were only rated fair.

We had some real propagation excitement a few weeks ago with SFI up over 100 and Sunspot number in the 40s, but today it was back to the 80s with sunspot number in the low teens. Darn. Let's hope for quick return of more sunspots. It showed. 17M wasn't great and 15m was not even worth checking. Two weeks ago, 17M was great and 15 showing signs of life. Even made Qs on 12m back then. The 10M band was alive then too. (barely).

The Mapquest program showed a good 'shortcut' from the NWR back to 82. Hmm....don't do it. Headed down the road headed south. Where's my turn to the west?

Hmmm....don't find the road and ahead is dirt road. So it's west on Wright Road which is supposed to run N/S. Get a mile down the road and there's half a dozen tractor trailers blocking the road at a railroad crossing. Have to wait 5 min for them to move enough for me to get through. Apparently, they are repairing the grade crossing at the RR tracks where you zig north 300 feet. Road went to good gravel, turned south and I got back to Route 82 going west. Didn't save any time! Oh well. Mapquest is not always right.

### **Fobb Bottom WMA KFF-5565 (no POTA Number – yet)**

Thought I'd hit Ray Roberts Lake State Park next – but realized it was now south of Highway 82, so I'd hit it on the way back home. Headed north on Highway 377 for 25 miles up to the OK border, across the Red River, into Marshall County. Supposed to turn west on Fobb Bottom Road. Watching for street signs and the GPS for Fobb Bottom Road. (GPS lady didn't recognize Fobb Bottom WMA, Fobb Bottom Road). Nope. Went too far north. Had to call up Mapquest on the phone (uses lots of megabits) and use 'directions' to get there. Road is not marked with sign – either missing or they just don't care. The road the other way east is marked – and goes to the golf course and has a different name. OK...won't make that mistake again. A few miles later the road ends in a dirt road – a good road for a pickup truck and heads south in the WMA. This is a new WWFF only park. You can't spot on the 'Parks on the Air' site since it is not a POTA park. The best place to spot is on the WWFF Facebook page, and of course on CH.W6RK.COM for the county/park. It's in Marshall OK which used to be fairly rare but I've run it a whole bunch of times lately with Lake Tawakoni SP.



This is a couple thousand acre WMA and open for hunting. Didn't venture too far into it – about 500 feet and found a parking spot. The road wasn't great – good for high clearance vehicles and I didn't want to chance going further down into it. There were supposed to be other parking spots and even spots for 'primitive camping' – if you wanted in the 41F outside temp. Cold! Needless to say, I kept the car heater going.

From the web:

“Fobb Bottom WMA is located in southern Marshall County. The nearest town is Willis, Oklahoma. The area is 2,205 acres in size and consists of mainly flood plain, river bottom, and cropland. The average annual precipitation for the area is about 32 inches.

## Wildlife:

Quail: Bobwhite quail are present in fair numbers, but limited by available habitat.

Deer: White-tailed deer are present in fair numbers, but limited by available habitat.

Turkey: Rio Grande wild turkeys are present in fair numbers, but limited by available habitat.

Rabbit: Both cottontail and swamp rabbits are present in good numbers.

Furbearers: Coyote, bobcat, and raccoon are available.

Dove: Present in fair numbers in season.

Waterfowl: Waterfowl are usually present in good numbers when habitat conditions are favorable.

Bald Eagle: Eagles winter in all areas of the WMA. “

- - -

Swamp Rabbits? That's a new one on me!

From Wiki:

“The swamp rabbit (*Sylvilagus aquaticus*), or swamp hare - is a large cottontail rabbit found in the swamps and wetlands of the southern United States. Other common names for the swamp rabbit include marsh rabbit and cane-cutter. The species has a strong preference for wet areas, and it will take to the water and swim.

Swamp rabbits mainly live close to lowland water, often in cypress swamps, marshland, floodplain, and river tributaries. Swamp rabbits spend much of their time in depressions which they dig in tall grass or leaves, providing cover while they wait until the nighttime to forage.”

Didn't look for any – just sat in car with cold temps outside – other than quick bathroom break.

Ran the bands. DX pretty well gone by this time. 17M not great. A index was up to 6 - slight glance from a CME just missing Earth head on. Can't complain too much – but just one sunspot today!

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Today and the following, if you were watching, NG5E was running a lot of southeast OK counties including Choctaw, Latimer, Pushmataha, etc. You'd have to watch the POTA spots and do a look up for the parks to counties. Or, work first, worry later. He's only on SSB in these runs. He did over a dozen parks in 2 days. For numbers under 4450, you can use the CH cross reference list on the KK7X website (countyhunter.com). For those over that, you'd best look it up on Google or other site to find out the county. (Most POTA folks only give the POTA number which likely won't correlate above 4450). As a chaser, you don't have to worry a bit – either system, but if you want to log the county, you might have to spend a few minutes figuring out what park and where. If you know the state – you can go to Parks on the Air, pull down the state, then the 'stats' page to get the list of all the POTA parks in a state.

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Had a good run from here with 64 QSOs. Didn't need to stick around for the 1900z CWT and with luck, could get down to Ray Roberts Lake SP by not much after that start time, and use the CWT contacts there to get them in the log. I've run that before so I only need '10' for an activation, but I like to put dozens in the log including a bunch of park chasers. Wouldn't stick around too long because I'd like to get home before dinner time and before any 'rush hour'.

### **Lake Ray Roberts State Park TX KFF/K-3051 (Denton/Cooke counties)**

Headed south about 35 miles to the du Bois unit of the park. Had pre printed off the pass to get in – they scanned it with a laser scanner as I held it out the window - and I was good to go.

There are half a dozen 'units' of this park – some in Denton, TX – where I ran and some in Cooke TX. The CWT was in full swing. Went 500 feet into the park at a picnic area. No one around there with 41F type temps. Sat for about an hour. Put 50Qs in the log from CWT in 50 minutes from VE2 to VE7, lots of FL and NY and CA and everywhere in between on 20M CW. Caught K8ZZ and W0GXQ in counties and some Park to Park contacts. Not many parks on from back east with the snowstorm! Finished up CWT and put another 38 more in log.

There are some tame deer here. Saw a couple of them and one got within 20 feet of the car as I was leaving the park along side the road. Tried to get pic but it was camera shy

and scooted off.

Headed out by a bit after 3:40 local for a one hour 15 minute trip to home. 41F outside still. Sun finally started peeking out from behind the cloud cover about 3pm and needed sunglasses on way home. But it didn't warm up any! Arrived and in the garage by 5pm. Sunset not much after than these days as we approach the Winter Solstice on Dec 21 – the 'shortest daylight day' in the northern hemisphere. Headed down into the 20s tonight.

212 miles of driving.

Thanks for riding along.

## Sunspot News I

When the chips are down and a big storm is brewing on Earth, odds are that forecasters are predicting close to the same thing. But when it comes to space weather and storms that flare up on the surface of the sun, that's not always the case. The sun has begun a new 11-year cycle, and scientists have very different ideas on just how much energy will be available to fuel its eruptions.

The consensus view of an international panel of 12 scientists calls for the new cycle, Solar Cycle 25, to be small to average, much like its predecessor, Solar Cycle 24.

But a prominent astrophysicist at the National Center for Atmospheric Research, Scott McIntosh, foresees the sun going gangbusters. The cycle is already off to a fast start, coinciding with the recent publication of McIntosh's paper in Solar Physics. The study, with contributions from several of his colleagues, forecasts the nascent sunspot cycle to become one of the strongest ever recorded.

AD

The weather on the sun matters because solar outbursts can unleash radiation into the Earth's atmosphere that is dangerous for air travelers; interfere with spacecraft and satellites; and, in a worst-case scenario, inflict significant damage on Earth's power grids.

The forecasts for the new solar cycle, which are so divergent, regard the number of sunspots that the sun will cook up over the coming 11 years. Sunspots are like bruises on the surface of the sun, cooler discolorations that throb and pulsate.

Forecasting sunspots is important, since “coronal mass ejections” that originate from them can send disruptive bursts of magnetic energy toward the Earth.

Predicting sunspots in the new solar cycle

In September, NASA announced that solar cycle 24 ended in December 2019, and that solar cycle 25 had begun.

AD

The number of sunspots crowding the solar disk at one time varies significantly over the course of the solar cycle. During solar minimum — which we’re emerging from right now — weeks can pass without a single sunspot. In fact, 206 days in 2020 (or 58 percent of the year) haven’t featured any Earth-facing sunspots.

But at the peak of a solar cycle, the average monthly sunspot number ranges from 140 to 220.

Solar cycle 24’s sunspot activity proved underwhelming — with the sunspot number averaging 110 at its peak.

An international panel co-chaired by scientists from NOAA and NASA, which featured six U.S. solar scientists and half a dozen from abroad, is anticipating a similarly quiet cycle 25.

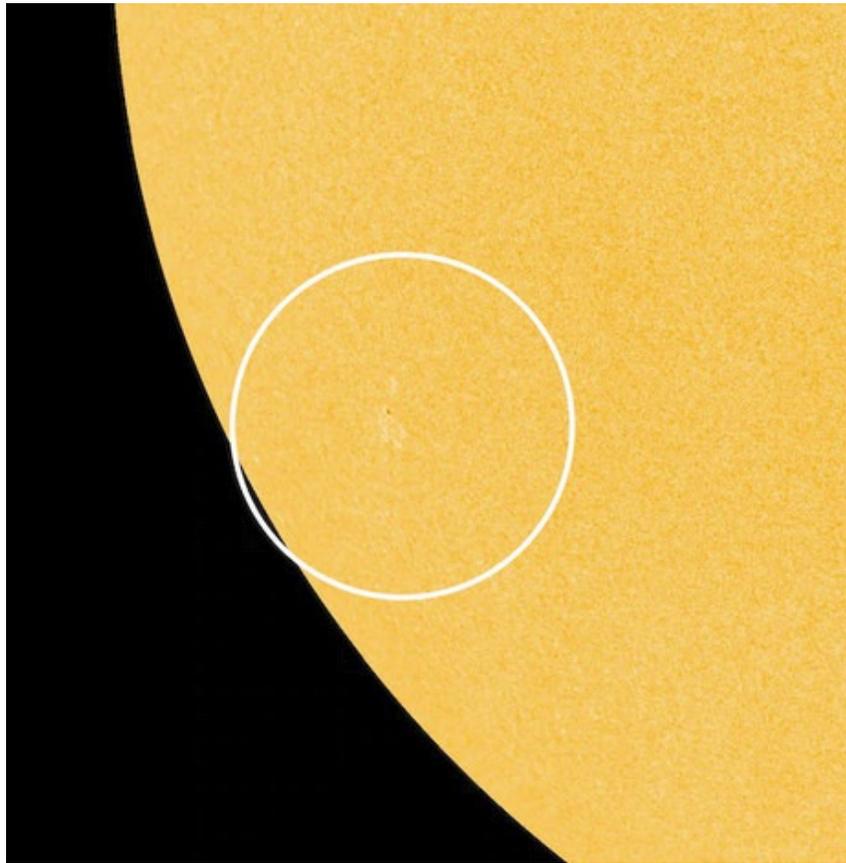
Scientists predict a new solar cycle is about to begin and that it might be stronger than the last one

They’re calling for that peak to occur in July 2025, give or take about eight months.

But McIntosh, who is now NCAR’s deputy director and previously directed its High Altitude Observatory, estimates a sunspot number more than double what the joint panel is predicting.

The panel’s prediction: A quiet cycle

An emerging sunspot July 1 marks the beginning of cycle 25. (Spaceweather)



The scientists on the Solar Cycle 25 Prediction Panel produced their outlook by reviewing and vetting a number of predictions across the solar science and astrophysics community. Among them is Doug Biesecker, the panel's co-chair and a scientist at NOAA's Space Weather Prediction Center.

AD

Among the diverse panel, different ideas were discussed and debated. Disagreements often stemmed from the state of the science, Biesecker explained, and how poorly understood the underlying physics of the sun are.

“We concluded it would be similar in strength to the cycle that’s just died,” said Gordon Petrie, a scientist at the National Solar Observatory. “This is a comparatively weak number. [Cycle 23] was about 50 percent stronger than [cycle 24], and going back to the 1950s, the cycles were much stronger [still.]”

The lone wolf with a shocking forecast

Sunspots viewed from Kila, Mont., on Aug. 20, 2015. (John Ashley/SpaceWeather.com)

Sunspots viewed from Kila, Mont., on Aug. 20, 2015. (John Ashley/SpaceWeather.com)

In stark contrast to the panel’s forecast are the prophecies of McIntosh, who anticipates that the upcoming solar cycle could be the most active in half a century. He has developed a prediction technique he says foreshadows a coming period of solar volatility.

AD

“If the relationship, [which] was developed off 24 cycles, holds, the number [of sunspots] coming out is double what the consensus prediction was from the various panel members was,” McIntosh said.

His group pinned their forecast at “233 [sunspots] with error bars” during the peak of Solar Cycle 25.

“And those error bars are not huge,” McIntosh added. “The data just smacks you in the face.”

Why the forecasts matter

Predicting discolorations on the surface of a star 93 million miles away might seem like an abstract art, but it’s actually a vital exercise. That’s because the Earth is susceptible to “space weather,” or the effects of “storms” launched from the sun. The storms hurl high-energy particles toward the Earth, along with intense spurts of magnetic energy.

That can have a pretty visible manifestation in the form of the aurora borealis and australis, but other impacts can be much more severe.

AD

“Big [solar] cycles cause things to fall out of low Earth orbit more quickly,” explained

Biesecker. That can be problematic for satellites, which are integral for global economies and commerce. “[Energy from solar storms can] heat up the [thermosphere, or upper atmosphere], and that heating basically results in increased density at satellite orbit altitudes.”

That, in turn, slows down the satellites, sometimes to the point of knocking some out of orbit.

This can be problematic too, because decades’ worth of satellite launches have cluttered the extreme outer atmosphere with defunct leftovers and space junk. Without drag to scour out the extraterrestrial rubbish, the risk of an operable satellite being damaged by a collision climbs.

The solar storms can disrupt or destroy the electronics onboard satellites if precautions aren’t taken. A big storm, and “you’ll literally see satellites frying,” McIntosh warned. “They cut corners on shielding.”

AD

And the biggest events have even knocked out electrical grids on the ground before — though episodes of that magnitude are rare. On March 12, 1989, a solar storm brought the northern lights as far south as Cuba and Florida, while knocking out power to a large swath of Quebec.

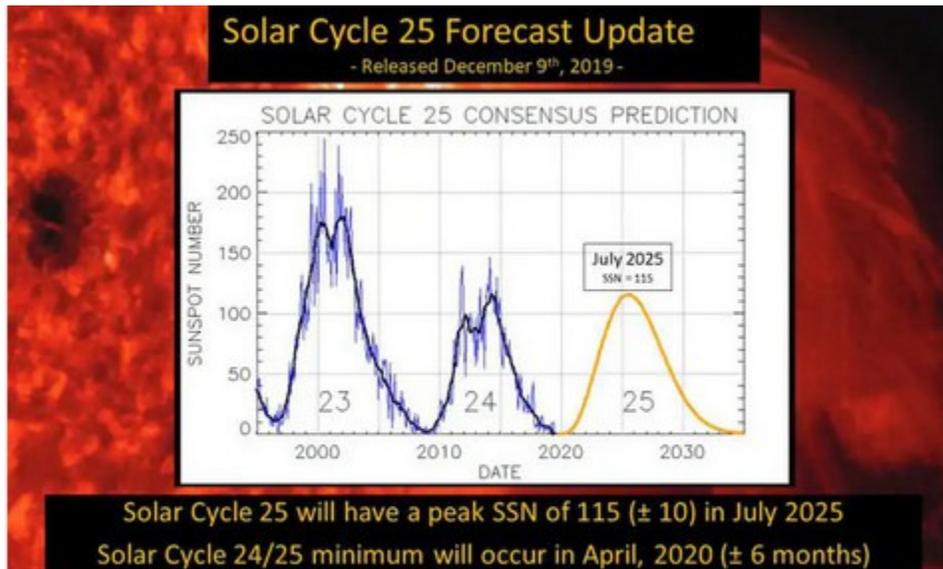
The episode paled in comparison to the infamous Carrington Event, which brought the planet’s biggest geomagnetic storm on record in early September 1859. Telegraph wires fried, while the northern lights could be seen across the entire Lower 48.

In 2013, researchers in the United Kingdom published a paper estimating that a similar storm today could cost the U.S. trillions of dollars, slashing the country’s GDP by up to 15 percent. Some even speculate that a solar storm of that magnitude would bring the world’s economy to a screeching halt, with electrical service restoration taking months.

AD

Solar storms can also boost how much solar radiation passengers and crew onboard commercial flights near the poles are exposed to, at times reaching dangerous levels. Airlines sometimes reroute their flights if they have advance notice.

Leveraging the sun’s magnetism to make predictions



The prediction of the NASA/NOAA panel for solar cycle 25, with the previous two cycles plotted.  
NASA/NOAA

The prediction of the NASA/NOAA panel for solar cycle 25, with the previous two cycles plotted. (NASA/NOAA)

By understanding the current magnetic structure and field strength of the sun, it's possible for solar physicists to make forward-looking predictions of sunspot number. The science is still in its early stages at best, with a few main techniques for estimation.

“It’s not a mature branch of science, I have to say,” Petrie said. “We have set of ... calculations that guide us.”

Scientists have found a link between how much magnetic energy pours out of the sun at solar minimum and the number of sunspots that form later in the cycle.

AD

Another method of prediction focuses on observed motion and visible signatures on the sun’s surface.

“It is based on what we see on the [illuminated surface], and tries to project ... what we’ll see on the surface based on what we’ve already seen,” Petrie said.

McIntosh has taken an entirely different approach in his strategy. And he thinks it could be revolutionary.

“Up until a couple years ago, I was watching the slow decline of solar activity over the last 30 years, and kind of jumped on the bandwagon that year that’s going to continue,” McIntosh said. “But then we did some work about 18 months ago.”

McIntosh has set about trying to figure out how the sun’s “internal magnetic machine” works. He deduced that there are as many as four main magnetic bands that encircle the sun at any one time. Sunspots, he argues, are the result of interference and overlap between those bands.

McIntosh postulates that there may not be just one cycle that accounts for sunspot activity but, in fact, several, connected to one of those four main magnetic bands. He thinks they all overlap in different ways, their peaks slightly misaligned. The frequency of sunspots we see is the product of how those subcycles interact.

McIntosh enlisted the help of plasma fusion scientists to review past data and come up with the math to predict what sunspot patterns may arise in the years ahead.

What does it mean when the sun is spotless and serene?

Only time will tell if McIntosh’s predictions for an active Solar Cycle 25 are borne out. He says “the proof is in the pudding.”

For now, the panel has remained quiet about his research, but McIntosh says that — if his predictions are realized — the field will have a lot of work to do.

“This work is pointing in a direction which says much of the past physics isn’t quite right,” he said. “If we’re right, it points to a quite different way in how the sun works.”

## On the Road with N4CD V

Well, I gotta be nuts, but 3 days later I was headed back to OK for some new parks. Several others had been added to the WWFF system. Maybe soon they'd be added to POTA. The weather wasn't too great in the morning but was supposed to get better but anytime you head 'north' you never know in TX and OK.

### December 19, 2020 in the Year of COVID

I got up at 5:30am ready to go. Well, I'd rather sleep in, but I was awake, so made breakfast and loaded up car at 6am for 6:13 departure from Plano. Dark! Sunrise here isn't until 7:28am this time of year. The roads are well lit and easy to drive in the early morning hours. Hit the Tollway to US-75 with light traffic and headed north a bit over an hour to the OK border 75 miles to the north. It decided to start drizzling a bit – that was supposed to be over but it wasn't. No sunrise I could see- dark clouds – light drizzle. Part of the plan was to get to the first park to run not long after sunrise to give the Europeans a shot at the park. You've got a few hour window in the morning on 20M now to catch them. By 11 or 12, the window to EU closes these days.

I checked the propagation – not so good. The sunspots were disappearing – today was SFI of 82 and just one sunspot. (Worse, that lone sunspot would be gone by the end of the day so we'd have ZERO sunspots again).

However, the weather here was 'good' compared to up north. At this time, Jerry, W0GXQ and Mike, NF0N, were running around in South Dakota. Snow all over up there and COLD temps. That was a few days after Ed, K8ZZ, and W0GXQ were up in IA in snow. It's all 'relative'. Of course, back east at this time, folks are still digging out from 2-3 feet of snow across PA and a good part of New England.

First up is two hours up the road

### **Arbuckle Springs WMA – KFF-5559**

This is a WWFF only park. (that means you can't use the POTA spotter to attract the crowds, so you're only choice is posting on the WWFF Facebook page and CH.W6RK.COM). Otherwise, you've got to hope the EU stations hear you and spot you over there. I'd try and be on during the DX window.



From the state site:

3,869 acre Arbuckle Springs WMA is located one mile west of the small town of Bromide in far northeast Johnston County. The WMA has very shallow soils overlaying limestone rock. The shallow limestone soils produce plant communities that are uncommon in the state. Native grasses and shrubs are dominant, with smaller patches of oak and other hardwood timber.

Game Species of Interest:

Quail: Bobwhite quail are present in low numbers.

Deer: White-tailed deer are present in good numbers.

Turkey: Rio Grande turkeys are present in good numbers.

Rabbit: Cottontails are present in fair numbers.

Furbearers: Coyote, bobcat, and raccoon are available.

Dove: Present in low numbers.

Waterfowl: Present in limited numbers on the farm ponds.

Squirrel: Fox and gray squirrels are present in fair numbers in forested areas.

Nongame Species of Interest:

Rattlesnakes: Both western diamondback and timber rattlesnakes are fairly common. Use appropriate caution when using the WMA, especially during warmer periods.

- - -

The tiny town of Bromide, OK was noted for its mineral springs. Now it's only a couple hundred people – the Great Depression killed the tourist trade there. It's in Coal County OK.

I'm not going hunting for rattlesnakes in the park there either! Yikes.

- -

Had a good run there with a dozen EU's in the log. There was some kind of EU DX contest going on – or it could have been the RAC Canadian contest – where you can work anyone anywhere for 2 points, or 10 points for working Canada. At any rate, the CW band on 20M was full end to end and I wound up on 14062.5 to try and get away from the DX pileups. Did work a few DX and Canadian stations to try and reach the magic 44 number. Success after running the bands for the county hunters. Conditions on 20m a bit tough with the QRM but got some of the EU's and some US park chasers. Will likely run this one again next spring.

- - -

I head east and try to put out Coal. Not many listening on 30M CW – all off chasing W0GXQ it seems. Got a couple in the log.

- - -

As I'm headed east, I pass by a sign for Boggy Depot State Park. What's this? A missing state park? I've never heard of it!

from the OK state parks page

Historic Boggy Depot State Park is a refreshing, restful place for campers to enjoy the beauty of southeastern Oklahoma. This park gets its name from Clear Boggy Creek and from its use as a Confederate commissary depot during the Civil War. The park features a fishing lake, nature trail, baseball diamond, playground, picnic tables, group picnic

shelters, charcoal grills, and comfort stations with showers. 35 acres of campgrounds are available, including RV and tent camping.

This park gets its name from Clear Boggy Creek and from its use as a Confederate commissary depot during the Civil War. In 1972, Boggy Depot was added to the National Register of Historic Places. **While it was once a state park, Boggy Depot Park is now being managed by the Chickasaw Nation.**

Open year-round, Boggy Depot Park in Atoka features a fishing lake, nature trail, baseball diamond, playground, picnic tables, group picnic shelters, charcoal grills and comfort stations with showers. Lodging includes 35 acres of campgrounds for tents and RV camping.

from Wiki:

Boggy Depot is a ghost town and Oklahoma State Park that was formerly a significant city in the Indian Territory. It grew as a vibrant and thriving town in present-day Atoka County, Oklahoma, United States and became a major trading center on the Texas Road and the Butterfield Overland Mail route between Missouri and San Francisco. After the Civil War, when the MKT Railroad came through the area, it bypassed Boggy Depot and the town began a steady decline. It was soon replaced by Atoka as the chief city in the area. By the early 20th century, all that remained of the community was a sort of ghost town.

- - -

It's one of the 'disappeared' OK state parks. Over the past 20 years, about a dozen have either been consolidated with others, or given to Native American Tribes to manage, or in one case, sold to commercial interests. I didn't bother to check it out further. Since it is not 'state or federally controlled' it won't be added to either park system.

The original signs for the 'state park' are still there though to confuse people – like me!

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Heading east, there were at least two I could run today, then head home before sunset. The solstice is 2 days off – the shortest daylight day of the year.

**Atoka Wildlife Management Area KFF- 4794 k-6339 in Atoka County**

I've been here before – twice. Seems I'm the only one whose been here since it was added over a year ago – despite the fact it's only 1 mile off the main route (US69) headed up through OK. Pull in at 1622z and get to work. I don't need more than 10 here, but of course, I try and give it to as many folks as possible while here. Conditions seemed rather 'poor to barely fair' on 20M. Did manage to put 55 in the log and bugged out. Had some new ones to run and this had been run twice before – by N4CD.

Easy to run – easy to get into – good road.



From the state site:

“Atoka WMA covers 6,440 acres in Atoka County and is located 12 miles north of Atoka on Hwy 69. Terrain within the WMA ranges from steep to moderately steep. Vegetation consists mainly of oak-hickory association with scattered openings. The average precipitation of the area is about 52 inches annually.

Game Species of Interest:

Quail: Bobwhite quail are present in fair numbers.

Deer: White-tailed deer are present in good numbers.

Turkey: Eastern wild turkey are present in good numbers but are highly sought after.

Rabbit: Cottontails are present but not abundant.

Furbearers: Coyote, bobcat and raccoon are available.

Dove: Very limited numbers occur for during annual migration.

Waterfowl: A few wood ducks and mallards can be found on Bluestem Lake and area ponds.

Squirrel: Fox and gray squirrels are present in good numbers

Nongame Species of Interest:

Bald Eagle: Eagles winter on nearby Atoka and McGee Creek lakes.

Owls: Numerous species exist. The Screech owl is the most abundant.

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Now I headed back south and took the turn at Stringtown for the Stringtown WMA. I had passed by this before but it had not been added to either system. It was under the 5,000 acre minimum size for WWFF, but they have relaxed that to about 2,000-3,000 acres now. Easy to find – and a nice camp/parking area 500 feet off the road.

**Stringtown WMA – KFF-5572 - no POTA yet – Atoka County**



from the state site:

“Stringtown WMA covers 2,260 acres of south-central Atoka County and is located 7 miles east of Stringtown on Greasy Bend road. Terrain within the WMA ranges from steep to moderately steep. Vegetation consists of oak-pine association. The average precipitation of the area is about 52 inches annually.

Game Species of Interest:

Quail: Bobwhite quail are present in fair numbers.

Deer: White-tailed deer are present in good numbers but are highly sought after.

Turkey: Eastern wild turkey are present in fair numbers but are highly sought after.

Rabbit: Cottontails are present but not abundant.

Furbearers: Coyote, bobcat and raccoon are available.

Dove: Occur in small numbers for short periods during annual migration.

Waterfowl: A few wood ducks can be found on Potapo Creek.

Squirrel: Fox and gray squirrels are present in good numbers.

#### Nongame Species of Interest:

Bald Eagle: Eagles winter on nearby McGee Creek Lake.

Owls: Numerous species exist. The Screech owl is the most abundant.

Nongame Birds: Numerous bird species exist, providing birders with ample watching opportunities.

- - -

Pulled in at 1742z and proceeded to work on getting to 44Qs to qualify the park and get credit for a WWFF activation. Worked a bunch of stations in the RAC contest as well, and was up at 14062.5 again to escape the QRM down below. Worked to get to 44+ and it took a while. Thanks to county hunters/park chasers did have success. It's not a POTA park so you can't spot it on the very popular POTA spotter which attracts 10 times as many park chasers – especially if you run SSB! Conditions on SSB were not great – tuned across the bands and few 'strong stations' today and most just S5. CW works a bit better. SFI was dropping and the sole sunspot was about to be gone.

- -

As you turn onto Greasy Bend road in Springtown, you'll see a sign pointing down the road to the east for both this WMA and for McGee Creek WMA. Hmmm.... I've been on this road before – part of it good and part horrible broken up pavement – and a good half just good gravel road - and it's not too many more miles to that WMA along the same road to get to the next. Turns out its another 6 miles but I've still got enough daylight to get there, spend an hour or so there and then head home. I've run it once before (and only one to run it). It's still totally overcast with temp near 40F. Turn right on Cane Break lane and the HQ is 1 mile ahead.

## **McGee Creek WMA KFF-4818 and K-6361**

from the state site:

McGee Creek WMA covers 10,000 acres of southcentral Atoka County of the southeastern part of Oklahoma. Located 11 miles east of Stringtown on Greasy Bend road, terrain within the WMA ranges from steep to moderately steep. Vegetation consists of oak-pine association. The average precipitation of the area is about 52 inches annually.

### **Game Species of Interest:**

Quail: Bobwhite quail are present in low number.

Deer: White-tailed deer exist in good numbers but are highly sought after.

Turkey: Eastern wild turkey are present in good numbers but are highly sought after.

Rabbit: Cottontails are present in fair numbers.

Furbearers: Coyote, bobcat and raccoon are available.

Dove: Low numbers are present during annual migration.

Waterfowl: A few wood ducks and mallards can be found on McGee Creek Lake.

Squirrel: Fox and gray squirrels are present in good numbers.

### **Nongame Species of Interest:**

Bald Eagle: Eagles winter on nearby Atoka and McGee Creek lakes.

Owls: Numerous species exist. The Screech owl is the most abundant.

Nongame Birds



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Only need 10 QSOs here but I'm going to 'give it out'. Same County – Atoka. Run the bands, add in a few more RAC contest stations, and catch park chasers to round out the total at 60 for this park.

Sun finally peeks out – so I break out the sunglasses for the trip home.

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Noted WD4OIN/m was in NC giving out a few counties and of course, W0GXQ/NF0N still very busy in SD running county lines. I stayed off net frequency to give them free

access. They were running C/Ls and zipped along at 25+ wpm so they'd get done and on the way to the next.

Not much other CH activity going on – but the weather wasn't all that great with the northeast still buried under snow. A dozen parks were on the air today from AK to PA/MD to FL,SC, AZ, WA, OH, IN, etc.

Now it's time to head home. 2 ½ hours to home via good roads – 4 and 6 lane roads with mostly 60-70 mph speed limits. There's a few traffic lights in OK in the few towns but it moves quickly. **Home by 4:30 after 291 miles of driving.** Whew! I'm definitely worn out. Hmm...these big trips and several hundred contacts can wear out a senior county hunter! Too many hours sitting in the car! (no stops other than in parks – brought my lunch along). Got out a few times to stretch legs and..... 59 degrees F when I arrived at home. Nice!

Didn't even bother with 17m – today. Or 15 or 12m. Darn, where are those elusive sunspots hiding?

Hope you caught some new things! Thanks for riding along.

## RAC Winter Contest

The bands were full of signals - from stations in Canada – and from those trying to work them. You could also work anyone else. Top Canadians made over 1500 QSOs in the time frame. Heard a few county hunters jumping in the fray. All provinces of Canada on the air. 10 points for working Canada, 2 points for everyone else.

I worked 17 Canadian stations during the day – heard about 30 but pile ups a bit bad on many of them.

### **K4BAI - fixed - GA - 648 cw QSO**

Very nice contest with good activity from 160 to 15. No signals heard on 10M. Beam is out of commission, but the wire antennas worked very well. 160M Inv L (used on 160 and 20M), 80M inverted vee dipole, 88' center fed zepp (used on 80, 40, 20M), 40M dipole (used on 40 and 15M). Merry Christmas and Happy New Year to all.

73, John, K4BAI.

## On the Road with N4CD VI

Wednesday, December 23, rolled around. In TX, it was a great day to go the park – 15 deg F above normal – 70 degrees! The weekly CWT (CW Open Test) happens from 1900-2000z so I'd hit park KFF-4423 to run it.

Propagation – SFI 87, Sunspot number 11. A of 12, K of 2. Quite a bit down from the peak 3-4 weeks ago when it hit 100 with Sunspot number over 42. Anyway, I'd try 10m to see if I could scare up a contact or two. Ten minutes of calling CQ with spots on both CH.W6RK.COM and POTA brought forth zero QSOs.

Skipped 12M and moved down to 15m. Half a dozen went in the log including county hunters W9OO, K8OOK, and AB7RW. Moved to 17M and 10 went in the log – including W9OO and K8OOK.

At 1900, turned the keyer up to 28 wpm or so, and did search and pounce on 20m for the next hour. 50Qs went in the log. Then ran 20cw with another 35 in the log including county hunters NT2A, K9IA, N8II. Caught 4 different parks – and could not hear another couple on SSB while there for 2 ½ hours. 120 QSOs.

Nice in the park, but at 3pm, the wind shifted to the north and started howling at up to 40mph. Within an hour the temp dropped ten degrees and would be down 40 degrees by midnight. Winter was on the way. Next week we might not even get up to 52 degrees – below 'normal high'. We seem to either have way above normal followed by way below normal days here.

Didn't get closer than 20 feet in the park – sat in the car. 10% COVID safe. That's the way it goes these days.

# Ham-Com 2021 Canceled - Forever

One of the largest hamfests in the country after Dayton and Orlando – the Dallas area Ham-Com has been canceled and is now 'history' – a victim of COVID and rising costs. Likely by early June, there will still be COVID spacing requirements for large venues – which would pretty much eliminate indoor vendor display areas, indoor flea markets and indoor presentations. I can't see any way to have 300 people in a room and have six feet between them – for half a dozen forum rooms. Usually the indoor flea market is shoulder to shoulder along with the vendor display areas. This doesn't bode well for any event until maybe fall 2021 or later. Of course, hundreds came by air - dozens from foreign countries, too. Probably a thousand by car as well from dozens of states. This was the fifth largest hamfest in the country in 2019- the last time it was held.

The current prediction is that most Americans who want the vaccine will be able to get it by the end of the second quarter – end of June but that will likely leave 50 million who opt out. How that will impact overall infection rates is TBD. Worldwide, estimates are it will take FOUR YEARS to inoculate most of the world's 7.5 billion folks.

From the NY times on the current situation:

“The number of new daily cases has risen more than fivefold since Labor Day largely because Americans are tired of staying at home and of all the other disruptions to normal life — and understandably so. It's pretty miserable. Yet it is also clear that our impatience is killing people. Almost 20,000 Americans died of confirmed Covid cases in the past week, and next week's toll will probably be worse.”

Is there an end in sight? And when?

Here's the official Ham-Com announcement:

“It is with a heavy heart that I write this letter about the future of Ham-Com. After 41 years, Ham-Com has decided to close its doors in lieu of the restrictions in place for COVID-19 and the rising costs of putting on a show. The decision was not made lightly, but the safety and wellness of our volunteers, vendors, clubs, presenters, and attendees is our paramount concern.

We sincerely thank each and every person for their support over the past years. This starts with clubs who have participated in offering forums, transmitter sessions, VE sessions, talk-ins, and many more things through the years. Next, to the commercial and flea market vendors who have helped new hams get their first radio to established hams who are building the ultimate ham shack, we thank you for returning year over year. To the volunteer staff, functional directors, and access control, your dedication and hard work have contributed to the continued success of the show for 41 years. Finally, to our attendees. Without you, there is no show. Over 41 years, we have met a variety of people with one common passion, amateur radio. Ham-Com is proud to contribute to bringing people together to enjoy this passion. We will definitely miss this gathering of the broader community.

Our thoughts and best wishes to you and your families and “see you on-the-air”.

73

Bill Nelson  
President of Ham-Com Inc

- - - -  
de N4CD

This doesn't bode well for activities in 2021. Can you have a 'banquet' like a DX banquet – a typical event at a hamfest – any time soon in 2021? Can you have indoor display areas until this infection rate is driven to just a few cases a day instead of 100,000 new cases a day and thousands or tens of thousands of deaths a DAY? Can you have international travel for vacations, attending hamventions, etc, any time soon when it may take years for the vaccine to get to most countries in the world?

Can you have the Summer Olympics in Tokyo with a million visitors from 200 different countries? When will football stadiums fill up again? Baseball parks? Kids back in school and colleges?

On the other hand, county hunting, county activation, park chasing and activating are nice low risk activities, so carry on! Just watch out for higher risk 'eating out' at restaurants until this thing is tamed.

Probably schools and colleges back in session next fall. Businesses open. Maybe full football stadiums.. Let's hope. But if 40% of the population does not get the vaccine – probably not!

## Awards Issued

County Challenge Level 11 #4	N1API, Al	7 November 2020
Big Rig Level 1 – 1500 #8	N6PDB, Dennis	1 September 2014
USA-Digital Level 1 #20	WO8L	November 6 2020
County Challenge Level 11 #4	N1API, Al	11/7/2020
Big Rig Award #8	N6PDB, Dennis	9/1/2014
County Challenge Level 18 #3	Ed, K8ZZ	10/24/2020.
USA-CW #150	Jim, N9JF	12/19/2020
Roadrunner Award 225 LC's #108	Bob, K7TM	24 July 2018
Bingo III #43	Tom, N4RS	10/17/2020

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## Upcoming Events for County Hunters

2021 MARAC Michigan Mini  
Currently scheduled for  
April 23, 24, 25, 2021

Dayton Hamvention  
May 21-23 2021

That's all folks. Happy Holidays. See you next year!

