ELECTRICITY SURGES THROUGH THE SOIL OF NORWAY

On January 6th, something unexpected happened in the soil of northern Norway. "Electrical currents started flowing," reports Rob Stammes, who monitors ground currents at the Polarlightcenter geophysical observatory in Lofoten. This chart recording shows the sudden surge around 1930 UT:

"It seemed to be some kind of shockwave," says Stammes. "My instruments detected a sudden, strong variation in both ground currents and our local magnetic field. It really was a surprise."

NASA's ACE spacecraft detected something as well. About 15 minutes before the disturbance in Norway, the interplanetary magnetic field (IMF) near Earth abruptly swung around 180 degrees, and the solar wind density jumped more than 5-fold. Earth may have crossed through a fold in the heliospheric current sheet—a giant, wavy membrane of electrical current rippling through the solar system. Such crossings can cause these kind of effects.

While currents flowed through the ground, auroras filled the sky. Rayann Elzein photographed the corresponding outburst of lights from Utsjoki, Finland:
"What a surprise!" says Elzein. "The auroras were sudden and dynamic, with fast-moving green needles and several purple fringes!"

The auroras and ground currents were caused by the same thing: Rapidly changing magnetic fields. High above Earth's surface, magnetic vibrations shook loose energetic particles, which rained down on the upper atmosphere, creating auroras where they struck. Just below Earth's surface, magnetic vibrations caused currents to flow, triggering Rob Stammes' ground sensors.

"We couldn't see the auroras in northern Norway because of cloud cover," says Stammes, a little ruefully. "We had to be satisfied with the electricity underfoot."

Source: [https://spaceweather.com/](https://spaceweather.com/) Jan. 7, 2020

<table>
<thead>
<tr>
<th>Sunspot number: 0</th>
<th>Updated 31 Dec 2019</th>
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<tr>
<td>What is the sunspot number?</td>
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<tr>
<td>Spotless Days</td>
<td>2015 total: 0 days (0%)</td>
</tr>
<tr>
<td>Current Stretch: 4 days</td>
<td>2014 total: 1 day (&lt;1%)</td>
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<tr>
<td>2019 total: 281 days (77%)</td>
<td>2013 total: 0 days (0%)</td>
</tr>
<tr>
<td>2018 total: 221 days (61%)</td>
<td>2012 total: 0 days (0%)</td>
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<tr>
<td>2017 total: 104 days (28%)</td>
<td>2011 total: 2 days (&lt;1%)</td>
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<tr>
<td>2010 total: 51 days (14%)</td>
<td>2009 total: 260 days (71%)</td>
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<td>2008 total: 268 days (73%)</td>
<td>2007 total: 152 days (42%)</td>
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<td>2006 total: 70 days (19%)</td>
<td>Source: <a href="https://spaceweather.com">https://spaceweather.com</a></td>
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## Links for Kansas Hams!

<table>
<thead>
<tr>
<th>Link Description</th>
<th>URL</th>
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<tbody>
<tr>
<td>ARRL Main Page</td>
<td><a href="http://www.arrl.org">http://www.arrl.org</a></td>
</tr>
<tr>
<td>Kansas Section Pages and KAR’s</td>
<td><a href="https://ksarrl.org">https://ksarrl.org</a></td>
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<tr>
<td>Kansas QSO Party</td>
<td><a href="http://ksqsoparty.org">http://ksqsoparty.org</a></td>
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<tr>
<td>Wichita ARC</td>
<td><a href="https://www.warc1.org">https://www.warc1.org</a></td>
</tr>
<tr>
<td>Enson Museum</td>
<td><a href="http://www.ensorparkandmuseum.org">http://www.ensorparkandmuseum.org</a></td>
</tr>
<tr>
<td>K-Link Repeater Network</td>
<td><a href="http://ks0lnk.net">http://ks0lnk.net</a></td>
</tr>
</tbody>
</table>

Links to all known Kansas Clubs can be found at the bottom of [https://ksarrl.org](https://ksarrl.org)

If you change your Clubs web address, please contact Kent at [kb0rwi@arrl.net](mailto:kb0rwi@arrl.net)

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## Net Reports courtesy of Richard, KØRCJ

<table>
<thead>
<tr>
<th>Club Name</th>
<th>Net Type</th>
<th>Sessions</th>
<th>QNI</th>
<th>QTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wichita Amateur Radio Club (WARC)</td>
<td>WARC DMR nets</td>
<td>5</td>
<td>147</td>
<td>4</td>
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<tr>
<td>WARC Fusion nets</td>
<td></td>
<td>5</td>
<td>39</td>
<td>0</td>
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<tr>
<td>QCWA</td>
<td></td>
<td>4</td>
<td>31</td>
<td>0</td>
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<tr>
<td>Reno County KS ARA (RCKARA)</td>
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<td>3</td>
<td>33</td>
<td>0</td>
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<tr>
<td>Great Salt Plains ARC (GSPARC)</td>
<td></td>
<td>5</td>
<td>55</td>
<td>0</td>
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<tr>
<td>KS SSB and Phone Nets</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KØRCJ</td>
<td></td>
<td></td>
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Creating Emergency Communication Networks

<table>
<thead>
<tr>
<th>Net Name</th>
<th>PSHR (UTC)</th>
<th>Total (UTC)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1:40</td>
<td>2:40</td>
</tr>
<tr>
<td></td>
<td>3:30</td>
<td>4:0</td>
</tr>
<tr>
<td></td>
<td>5:0</td>
<td>6:30</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>140</td>
</tr>
</tbody>
</table>

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As a service to fellow hams across the state, I urge all individuals and Clubs to send me Silent Key notices. Please include a link to an obituary. I watch Larry's List for announcements of hams from Kansas. If you are not on Larry's List, I will forward the notice to him. He in turn notifies the ARRL. As Larry cannot include pictures, I do my best to find images so that a face can be put with the name and call. Thank you!

Roland E. Barnaby, NØRAB

Roland E. Barnaby, age 80, of Wichita, Kansas passed away on Friday January 10, 2020. Roland was born December 29, 1939. Roland was an avid fisherman. He competed in bass fishing tournaments and also fished for crappie. He was a fan of old (good) country music. Roland also had a ham radio under the callsign "NØRAB".

Roland is preceded in death by his parents, James and Doris Barnaby; son, Troy Barnaby; and brothers, Max, Steve, and Dale Barnaby.

Roland is survived by his wife, Lorna; son, Jason (Tina) Barnaby; daughter-in-law, Lora Shyrock; brother, Les Barnaby; sisters, Geneva Barnaby and Wannita Arnold; grandchildren, Joseph (Starla) Barnaby, Bethany (Alex) Taylor, Thomas Barnaby, and Mayece Barnaby; and great grandchild, Mason Edward Taylor.

A Memorial Service will be held on Thursday, January 16, 2020 at 1:00pm at Resthaven Mortuary.

https://www.dignitymemorial.com/obituaries/wichita-ks/roland-barnaby-8992956
"Everything should be made as simple as possible, but not simpler" is a quote attributed to Albert Einstein (https://quotationcelebration.wordpress.com/2017/01/07/everything-should-be-made-as-simple-as-possible-but-not-simpler-albert-einstein/comment-page-1/). Here's one way to apply this principle in amateur radio, specifically to code practice oscillators.

A week ago, my friend, Paul emailed me:

“I am planning on teaching a two-hour introduction to Morse code to 14 girls ages 8 to 9 [Paul's grand-daughter is a Girl Scout.]. I plan on having the girls build a code practice device. I need your help in selecting a low cost buzzer and battery holder. Please take a look around and see would you can find. I would like to limit the power to one or two AA batteries.”

I replied that I’d be happy to help him with the demonstration, and offered the following advice:


“Unfortunately, they don’t sell it anymore, but the assembly manual is still online (https://qrpguys.com/wp-content/uploads/2017/03/cpo_assy_012616.pdf). The assembly manual doesn’t call out specific parts, but here are some Amazon SKUs:

- B00J4BK0NS, Black 3V Electromagnetic Type Piezo Buzzer, 20 pcs/$6.58
- B06XF3K4NP, Coin Cell Button Battery Holder, 30 pcs/$9
- B008SNZUYC, 3 Pin PCB Mount Female 3.5mm Stereo Jack, 10 pcs/$5.40
- B071RMD6FD, 1/8” 3.5mm Stereo Male Connector, 10 pcs/$7

“Batteries are available at the dollar store for about 30 cents each. So, you could do the whole thing for less than $5 for sure, even with a printed circuit board, which I would suggest that we do. Heck, if you ask nicely, the QRPGuys might even give us the artwork, or even better, have some boards still in stock. Even if they have neither, you should be able to get the boards in plenty of time.”

Later that day, Paul replied:

Thanks, Dan, for the information and making yourself available to help. I am just going to use a buzzer, key, and battery. The buzzer has a frequency of 400 Hz.

And this morning, he sent me this photo, noting, “FYI. Also sounds great.”

I think that this is as good an example of "Everything should be made as simple as possible, but not simpler" as there can be. I've volunteered to help Paul with his
class. That will be fun, too.

- [https://www.xump.com/science/ContactKeySwitch.cfm](https://www.xump.com/science/ContactKeySwitch.cfm)

Join the Mail Notification List for KAR
If you would like to join the Mailchimp list to be notified of the new KAR Newsletter you may do so on the web site [https://ksarrl.org](https://ksarrl.org) by clicking on the Email Notification link. [http://eepurl.com/c25Go9](http://eepurl.com/c25Go9)
Use of the e-mail and eepurl links above will provide the unique ID for your subscription.

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**KANSAS HF NETS**  
**UPDATED** November 6, 2019 11:19

<table>
<thead>
<tr>
<th>Days</th>
<th>Time</th>
<th>Mgr</th>
<th>Freq</th>
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<td>M, W, F</td>
<td>6:45AM</td>
<td>KØRCJ</td>
<td>3920 KHz</td>
<td>Kansas Phone Net</td>
</tr>
<tr>
<td>Daily</td>
<td>7:00AM</td>
<td>WBØBWE</td>
<td>3920 KHz</td>
<td>Kansas AM Weather Net</td>
</tr>
<tr>
<td>Sat, Sun</td>
<td>8:00AM</td>
<td>KØRCJ</td>
<td>3920 KHz</td>
<td>Kansas Phone Net</td>
</tr>
<tr>
<td>Mon -Fri</td>
<td>12:30PM</td>
<td>KC5MP</td>
<td>7253.5 KHz</td>
<td>Central States Traffic Net</td>
</tr>
<tr>
<td>Daily</td>
<td>6:00PM</td>
<td>WBØBWE</td>
<td>3920 KHz</td>
<td>Kansas Weather Net</td>
</tr>
<tr>
<td>Daily</td>
<td>6:30PM</td>
<td>KØRCJ</td>
<td>3920 KHz</td>
<td>Kansas Sideband Net</td>
</tr>
<tr>
<td>Daily</td>
<td>7:00PM</td>
<td>N80Z</td>
<td>3547 KHz</td>
<td>QKS CW NTS Traffic Net</td>
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<tr>
<td>Mon</td>
<td>7:30PM</td>
<td>WD0ESF</td>
<td>3547 KHz</td>
<td>QKS SS CW Traffic Net</td>
</tr>
<tr>
<td>Daily</td>
<td>10:00PM</td>
<td>N80Z</td>
<td>3547 KHz</td>
<td>QKS CW NTS Traffic Net</td>
</tr>
</tbody>
</table>

I have posted public service nets on [https://ksarrl.org/traffic.php](https://ksarrl.org/traffic.php)

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**Western Kansas Net information courtesy Matt, KDØEZS**

The western Kansas 160m net will be Tuesday nights at 9 pm central time on or near 1.960MHz LSB
AMATEUR RADIO EMERGENCY SERVICE
MONTHLY EC REPORT

◆ Zone 1B – Kevin KSØEGL
No Report this month

◆ Zone 4A – Brian KCØBS

DECEMBER MONTHLY ARES REPORT TO DEC & SEC
Total of ACTIVE ARES members: 150 +0
Local Net Name: Johnson County ARES
Emergency Coordinator = Brian Short KCØBS 913-638-7373
Alternate Emergency Coordinator, Recruiting = Jim Andera K0NK 913-884-6613
Assistant Emergency Coordinators:
Herb Fiddick - ECS Liaison
George McCarville WB0CNK - Training, Drills
Matt May KC4WCG - IDs, MECC
Bill Gery KA2FNK - Recruiting, Technology
Darren Martin N0MZW - Net Manager
Brad Kelsey KU0FAN – Membership
Jesse Gonzalez KE0ECS – CERT
Chuck Simpson KC0NUG - Rapid Response
Jim Andera K0NK - KCHEART

NTS liaison is maintained with the KS SSB Net:
Jim Andera K0NK  Terry Reim WA0DTH
George McCarville WB0CNK  Jim Cordill KI0BK
Debbie Britain AB0UY  Rich Britain N0ENO

Net Sessions: 35
QNI: 314
QTC: 0

3 nets - 2 Meter Voice
4 nets - 440 Voice
3 nets - 2 Meter SATERN Voice
4 nets – CW
3 nets - 6 Meter
3 nets - 2 Meter Voice Simplex
4 nets - PSK 31 SATERN
4 nets - APRS Packet
4 nets - 1.25 Meter
3 nets - SATERN 80 meter SSB

Reminder> Next meeting is January 13, and it will be our annual Gratitude meeting.

Report prepared by:
Darren Martin N0MZW
Johnson County Kansas

◆ Zone 6A, E & G – Rod KØEQH

Kansas ARES Zones 6A, E & G Net report for December 2019
Total Nets.........3
Total QNI.........23

No nets held Dec 24, (Christmas eve) and Dec 31 (New Year’s eve)

Stations participating: WB0QYA, KD0TWO, N0KQX, N0OXQ, KØEQH, N0OMC, KG0VA, W0BYV, AC0E

Rod
KØEQH
Finney, Grant, Gray, Greeley, Hamilton, Haskell,
Kearney, Lane, Scott, Stanton, Wichita Counties

The Sand Hills ARC held it’s annual Christmas Dinner/Meeting the 14th at LaFiesta restaurant in Scott City. 11 members and guests had a nice dinner and good fellowship.

Making SWAN's Fly – Chapter 1

Okay, so this edition wasn’t SUPPOSED to be about SWANs. I’ve let Kent down a few weeks and YOU as well, so figured I’d better get cracking and turn out yet another yarn.

Ahhh, you can almost smell the bakelite, hot resistors, waxy old caps, that curious scent of wire insulation,and burned-dirt on top of tubes. Yea, the SWANs we speak of here... no, not the kind that fly and are cranky on the ground (or lake), but the ones that came out of Oceanside, CA. are the stuff of legend. Yes, they do DRIFT a bit (birds do that, ya’know),and do NOT like UNMATCHED final tubes, but they sold THOUSANDS and put a lot of us on the air with a “modern” rig, back in the 60s and 70s, so here goes. Did you know that the same guy (Johnson) designed the SWAN, Cubic
ASTRO, and ATLAS radios? Actually, if you look at them, you’ll see similarities.

Yep SWAN was even in the forefront of solid-state stuff. Owing to my incessant desire to find weird, unusual, and rare radios to find, I once was given a SWAN SS-200... ever heard of 'em? They made an SS-15, SS-100, and SS-200 version. They’re all solid-state, have NO “tune up” as such, and have a tunable preselector, that like on Wadley Loop radios (like the Yaesu FRG-7 and Radio Shack DX-300), can be tuned to bands OTHER than what you’ve selected... what I mean, is that you get the bonus of being able to SWL a bit, even though the radio w asn’t designed [necessarily] to operate out of the “Basic Five” ham bands. (80, 40, 20, 15, & 10).

When I got the SS-200, there were MANY small (No. 22) wires under the main board that had broken off... How in the world to figure out what-went-where? Ya’see, I didn’t have a manual, and all my efforts to find out were for naught. Some were easy to determine, but others required a jeweler’s loupe to match the pattern of broken strands on the bottom of each wire, with the broken-off stubs of the board pads. I think about that now, and am amazed at MYSELF for figuring that all out. At any rate, it took me about 3 weeks, but in spite of the CB’er who’d messed with the radio, trying to put it on 11m, I ultimately came down to TWO wires, and they looked EXACTLY the same...hmmm – I finally put the whole radio relatively back together and observed where those wires “wanted to be” – figuring I’d paid ZERO for the beast, I had nothing to lose, so hooked ’em up, and s-l-o-w-l-y gave it 12 vdc, and voila! I got noise. Touching the antenna terminal with a pencil brought power-line noise, and a piece-of-wire later, I heard Intercon on 14.300 – The radio required alignment – TYPICALLY, most radios do NOT require any alignment unless they’ve been screwed with, but of course, YES, this one had been.

Assuming it was similar to all their later products (500, 500C, Cygnet, 500CX, 700CX... ATLASs), I figured out where the IF cans were by putting a loop on the end of a piece of RG-58, connected to a signal generator tuned around 5.5 mHz, and saw which ones were affected. Then simply tapped my AC VTVM (yes, there’s nothing like a swinging needle for tuning stuff up) onto the AGC (automatic gain control) like and peeked for best signal... the radio veritably came to LIFE and trying the transmitter, it worked swell... about 200 PEP and about 150w carrier for CW.

Ultimately, I sold the radio to a SWAN collector in California, and yeah... I’m kinda sorry I did that, but oh well – there’s always another Hamfest.
... and there was.

Some years ago, my Stepdad – Jim Carl WØKI sk – took me over to his buddy’s house... Norm Wilson WØRAS sk. Norm lived not far from Jim in Prairie Village, and they’d been ham radio buddies for some time. Poor ol’ Norm had finally succumbed to The curse of Alzheimer’s and passed... His XYL offered all his stuff to Jim, but Jim didn’t want it, so suggested his wife give it all to me (Jim knew a good “scrapper”)... among the stuff was a SWAN 350 with matching Power Supply & Speaker. I’d owned a SWAN 500C from early 1972 to late 1986, and had worked more DX with that stilly thing, than with any other radio... before or SINCE!

I filled (and I do mean FILLED) the ’94 Toyota PU (camper shell over the bed) with radio stuff, and headed back to Colorado. I must admit that the lonesome SWAN sat neglected for a few years, until I decided to “make it fly” again. First job was to RECAP the entire power supply, as the electrolytics were “oozing” a tad, and those original filter caps begin to get [electrically] leaky and can sometimes even DEAD SHORT... yeah, us OMs know you don’t just plug some old radio in and turn it on – that’s why Variacs were invented. Anyway, I obtained a large handful of the proper caps from MOUSER and put them all into the 117XC power supply, along with replacing the diodes – they weren’t bad, but – “as long as you’re in there”...

Now for the radio – As it turned out, all but 1 of the tubes were GREAT (the audio output one was weak), BUT... Oh Lordy... Norm, in some stage of his debilitating disease, had decided that the radio needed to be “REALIGNED’, so he twisted and turned EVERY SLUG IN EVERY COIL and turned EVERY TRIMMER CAP in that whole doggone box. It took me THREE times to properly align it, and the worst was the heterodyne oscillator (basically explained - makes you transmit on the SAME frequency that you're listening to). See the SWAN folks just put this little note in the manual that sorta says “Factory Aligned – do not attempt to adjust or tamper with in any way!” – oh just great...$@%##*^!!!!

Some years ago I’d redone a Heathkit SSB monobander and it was the same warning, so by trial-and-error, I managed to zero it... so did the same and got the SWAN zeroed too.

I’ve since put it on the No Name Vintage Sideband Net – 3977 kHz on Saturday mornings, about 0800 Central Time (Net control is out of Des Moines, IA) with great reports from the radio, the SAME D-104 I got with my SWAN 500C in ‘72, and going through my center-fed Zepp fed with ladder line (through a Heath SA-2060 matchbox). I gotta admit – putting Norm’s radio on the air gave me INTENSE satisfaction, as I’d told his wife “As long as I use Norm’s radio, his voice will live on... and it’ll make Jim smile too” – she liked that.

And THAT, noble readers, is why I fix old radios that glow in the dark – they light up the world in ways you may have NEVER imagined.

Dit dit