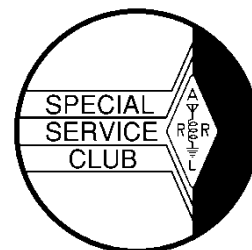




# The *ORC* Newsletter

Official publication of the Ozaukee Radio Club, Inc. Email all contributions to the editor, Ben Evans, K9UZ. Permission to reprint articles published in any issue is granted provided the author and the Ozaukee Radio Club Newsletter are credited.



ORC Repeaters on 146.97 (-127.3PL), 224.18 (-127.3PL), 443.75 MHz (+127.3PL) - Callsign W9CQO  
Web site: [www.ozaukeeradioclub.org](http://www.ozaukeeradioclub.org)

Facebook: [facebook.com/orcwi](https://facebook.com/orcwi)

Volume XXXIII

April, 2021

Number 4

## From the President

de Pat Volkman, W9JI



Is Cycle 25 really here? Something sure seemed to be going on the last weekend in March. I was on 20 meters and was able to work DX from Europe, Africa and Asia, all within a few hours. After the sun set, 40 meters was doing pretty well too, both on CW and FT8. The space weather reports, however, are reporting that sunspot numbers are down and that the predicted solar flux over the next month doesn't look too promising. Many of the announcements of Cycle 25 predicted that it would be like the old days all over again – some of the best propagation seen in the last 50 years. Not the case so far, but it sure would be nice.

Do you read newsletters from other radio clubs? I read a lot of them every month to keep up with what's going on in other ham organizations. One observation that I make, again and again, is that the ORC Newsletter is one of the best. We consistently put out over 20 pages of high quality content, all of which is generated by members of our club. There are no special qualifications required to write an article – you already have what it takes. I'll bet that you (yes, YOU) have done something interesting that we would like to hear about. Gary Sutcliffe, W9XT, thinks so too. In his column this month, Gary has issued a challenge to ORC members to become an author for the newsletter. Check it out.

Field Day is coming up in a couple of months and it looks like we might be able to go ahead with a group outing this year. Restrictions on gatherings have eased and many of us have had the Covid 19 vaccine. At the April meeting I will run a poll to see how much interest there is in getting together for Field Day. The Field Day site has been reserved, so we will have a place to gather if we so decide. We'll talk about it again at the May meeting. We don't have to decide anything for a while yet, but I do want to see how much interest there is and under what conditions people would be willing to meet.

The Zoom Breakout rooms after the Club meeting have become a very popular feature. The breakout rooms allow us to meet in small group and chat about a subject. Topics from the previous meetings have been Morse Code, computers, contesting, help with radio setup or whatever people wanted to talk about at the time. We have learned a few things about using the rooms and hopefully that will ease some of the confusion.

One important thing we learned is that you need to keep your Zoom client updated to the latest version. Zoom doesn't prompt you to do it, it has to be done manually. They continue to make improvements in the client and you need the latest version. The other thing that we've learned is that rooms were set up for Windows 10 on a laptop or desktop computer. If you join the meeting using another platform (Linux, iPad, phone, etc.) you may not see the same controls for the breakout rooms. We've been able to make this work out and it's easier now that we have some insight into what is going on.

A Zoom meeting and a conversation on the repeater have something in common – only one person can talk at a time. We need to take turns talking to make sure that everyone is heard. It's also important to involve everyone in the conversation, especially in a breakout room. If you notice that someone hasn't joined the conversation, ask them what they think about the topic. With every taking turns and joining in the conversation, things will sound more like a roundtable discussion on the repeater rather than a classroom lecture.

See you at the meeting - Pat Volkmann, W9JI

## THE COMPUTER CORNER

### No. 277: Linux Has a Lot of Updates!

Stan Kaplan, WB9RQR 715 N. Dries Street Saukville, WI 53080-1664  
(262) 268-1949 [wb9rqr@att.net](mailto:wb9rqr@att.net)



Well, that is sort of what you'd expect. I am talking about Linux Mint Cinnamon 20.1 ("Ulyssa"), which is a vibrant, adapting, living Operating System (OS) with many thousands of users around the world, many of whom are finding small bugs and places where updates would markedly improve the system, and they are constantly reporting these to a central gathering site that farms them out to gals and guys who are competent programmers. What is amazing is that these competent guys and gals then write updates to the system at no charge to anyone – just for the satisfaction of improving things to make a great OS even better!

Clearly their willingness to do this makes the effort a truly world-wide, cooperative undertaking. The ultimate result is an OS that is initially free of charge and free of any subsequent charges, and much better than the one you have to pay for – Microsoft Windows. I submit to you that at this time, this particular version of Linux<sup>1</sup> has now evolved to the point where it can easily take over the general role of Microsoft Windows. Translation: you don't have to lay out dollars for a Microsoft OS anymore!

Just put the latest copy of Linux Mint Cinnamon, specifically 20.1, on a machine and start learning to use it. The learning curve is not at all difficult if you are migrating from Windows. And, there is this offer: ORC, WiARC or Le Frog members can let me know you want a copy and when, and I will put a disc out for you by my front door for you to pick up (free). You'll get a DVD that you can boot with and play with to your heart's content. It will not change a thing on your machine during your exploratory play, and you can see what it is all about. If you decide it is good, you can tell the DVD it to install Linux by selecting an "Install Linux Mint" icon on the desktop. If you decide not to, just remove the DVD at any time and reboot. Your unchanged computer will be exactly as it was before. And you can always boot with it in the future and click the Install Linux Mint icon to install, if you make that decision. That is called a "live copy", and it is a handy way to explore the OS. No danger, I assure you, to whatever OS was on the machine before you started to play.

So, what can you expect with updates? During January 2021, I installed 9 updates on my Windows 10 machine, including HiBit Uninstaller, K-Lite Codec Pack, Burn Aware Free, VLC Media Player, Thunderbird, Firefox and the major Windows Features 20H2 update which took a really long time to install including several reboots of the machine. You probably know the patter with those reboots – "UPDATING – DO NOT TURN OFF YOUR MACHINE". Windows finishes

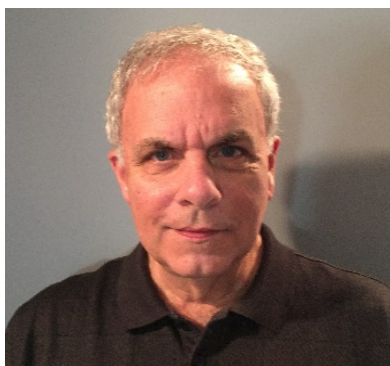
about 30% of the update, then turns the machine off, then restarts and finishes the other 70% of the update, and THEN REQUESTS ANOTHER REBOOT! I really don't understand what they are doing with those multiple reboots, except maybe breaking up the update procedure so the customers will tolerate it better. Anyway, the procedure is a pain and ties up your machine for a really long time.

So that was Windows updates. How about Linux? During the same month, I installed exactly the same number of Linux updates – 9. One included a new release of Firefox, which is part and parcel of the OS package. One of those updates was major, an upgrade from version 20.0 to 20.1, and it did require a (single) reboot. But, all of these updates were relatively painless. A small shield found in the tray (taskbar, at the bottom of the screen) lets you know that one or more updates are available by showing a numeral in the center of the shield. If nothing is in the shield or just a check mark, your machine is up to date. If updates are available, you can choose to ignore them, or click the shield to show them. You can tell it to update, which it will do in usually only a few seconds to download and install whatever is needed, followed by the message that your machine is up to date. If it was a (rare) major update, it will ask you to reboot to finish the installation. Clean and simple. And, you do the updates when YOU want to. There is no nagging as there is with Windows. More important, it is almost always very quick and almost always does not require a reboot.

So there you have it. A no-risk, no-cost offer. It could very well be worth your time. Happy computing!

## Vintage Amateur Radio

de Bill Shadid, W9MXQ



One of the last of what we refer to as the large post-WWII American manufacturers to design and market amateur radio equipment was Swan Manufacturing. It is true that they did not come on the scene until the 1950's, but still they were once one of the largest, if not the largest manufacturer of amateur radio equipment. They survived into the 1980's and went through name changes. During their time as Swan Electronics and were acquired by the conglomerate, Cubic Corporation. That led the former Swan operation into military electronics where they exist to this day making communication products as a part of Cubic's many operations. Some of those Cubic communication products lend their roots back to the Swan product line, even now.

The point that Swan was once one of the largest, if not THE largest, producer of ham radio equipment in the United States comes from Ray Grenier, K9KHW, retired Sales Manager of the Amateur Electronic Supply (AES) chain of stores<sup>1</sup>. Ray noted that at one time Swan products accounted for the major portion of the new product warehouse space at the AES anchor store in Milwaukee, Wisconsin. For the most part, Swan was known for making equipment that focused on SSB. In some models, Swan radios did reasonably well on AM as well. All had the capability to operate on CW – but CW was an afterthought on most Swan branded models. Like Collins transceivers, KWM-1 and KWM-2 models, CW was difficult without a Remote VFO because there was no way to adjust the offset between receive and transmit to get the most comfortable receive tone. To be fair, unlike Collins, there was at least a reasonable CW offset built into Swan models. This acceptable offset was also present in other popular transceivers of the day – such as those from Drake in the TR-4 Series and later the TR7.

This article will not cover a complete story of the many models and ham radio market segments where Swan focused<sup>2</sup>. Instead, it will present a story of one of the last products the company marketed to the amateur radio community – and an attempt to save it from oblivion. That last model was the Cubic Astro 103 HF Transceiver, introduced in 1981.



**Cubic Astro HF SSB/CW/RTTY Transceiver (included WARC Bands)  
W9MXQ Collection**

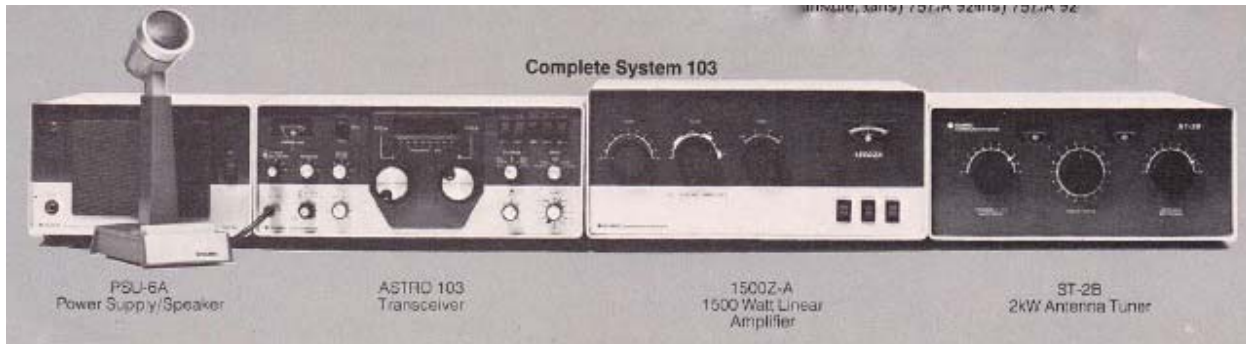
Swan's corporate owners for many years, Cubic Corporation, attempted to jump start the lagging technology in the Swan product line in the late 1970's by acquiring CIR Industries. CIR, with its state-of-the-art digital line of radios, would soon see that technology included in the Swan radio product lineup.

By 1981 and the introduction of the Cubic Astro 103, pictured above, Swan had changed its marketing name to Cubic. The 103 was an improved model of the original concept, the Swan 102BX and the identical but Cubic branded 102BXA. The Astro 103 is about the size of the Collins KWM-2. Some of its important specifications are:

- All Solid State 160 through 10-meter band operation – including the 30-, 17-, and 12-meter WARC Bands (but not the later 60-meter band). Suitable band overlap to allow for MARS operation.
- Provision for feeding antenna line and mute for an external receiver.
- Two discrete PTO (Permeable Tuned Oscillators – variable inductor tuned) for frequency control – with separate selectable VFO operation possible. The Two PTO units could be selected with the PTO MODE switch:
  - **A** – Transceive on the A (left) PTO
  - **RX A TX B** – Receive on the A (left) PTO and Transmit on the B (right) VFO
  - **B** – Transceive on the B (right) PTO
  - **RX B TX A** – Receive on the B (right) PTO and Transmit on the A (left) VFO
  - **EXT** – External Frequency Control (details later in this article)
- Transmitter with 235 watts input (nominal 100-watt output) final amplifier.
- Industry leading QSK CW with operation rivaling or exceeding market leader QSK transceivers from Ten-Tec.
- SSB, CW, and RTTY dedicated modes included. Optional 400 Hz Narrow CW and RTTY i-f filter. CW output pulse waveform shaping front panel selectable.
- Cascaded 9 MHz 8-Pole and 13.8 MHz 8-Pole filters producing continuously variable 600 Hz to 2700 Hz operation i-f bandwidth.
- Continuously variable AGC in addition to I-F Sensitivity and RF Gain controls to allow for maximum receiver sensitivity control.
- Military Grade Glass Epoxy Circuit Boards throughout – in keeping with Cubic's military communication business – which exists to this day.



Cubic also produced a line of accessories for the Astro 103 Transceiver that included:



**Left to Right**  
**Cubic PSU-6A Power Supply/Speaker – Astro 103 HF Transceiver**  
**Cubic 1500ZA Linear Amplifier – Cubic ST-2B Antenna Tuner**  
**Cubic Sales Brochure – Cubic Astro 103**

As the early 1980's progressed, it appeared that reduced advertising was showing a decline in interest in the amateur radio product line from Cubic. Four of us with experience in the radio broadcast and point to point communication equipment industry were extremely impressed with the performance of the Cubic Astro 103, and felt that there remained a strong market for the products. At the time, I worked with Fred L. (Ted) Bailey, W9DYQ<sup>3</sup>, two other fellows in the industry, and a potential manufacturer in Bloomington-Normal, IL, in a study of the possibility of manufacturing these radios under license. Time goes by and now I am left as the only survivor of that team with the others having passed away many years ago.

By the 1980's the Japanese manufacturers were moving ahead, technically, of their American counterparts. While Ten-Tec and by now the Astro series from Swan/Cubic have perfected QSK CW to a high order of performance – far ahead of their rather klutzy Japanese competition – the other parts of the transceiver experience were scoring significant performance points for Icom, Kenwood, and Yaesu.

An important area of study for an updated Astro 103 (which we affectionally referred to as our "Astro 105") was to utilize PLL oscillators in place of the Astro 103's PTO variable frequency oscillators. While very stable for the technology being used, the Astro 103 offered less frequency stability than the PLL VFO's in the Japanese competition. Some breadboarding was done and even tested in an R&D radio we used for our tests.

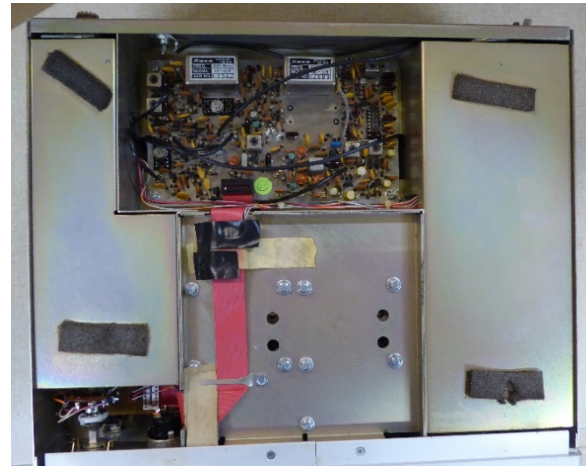
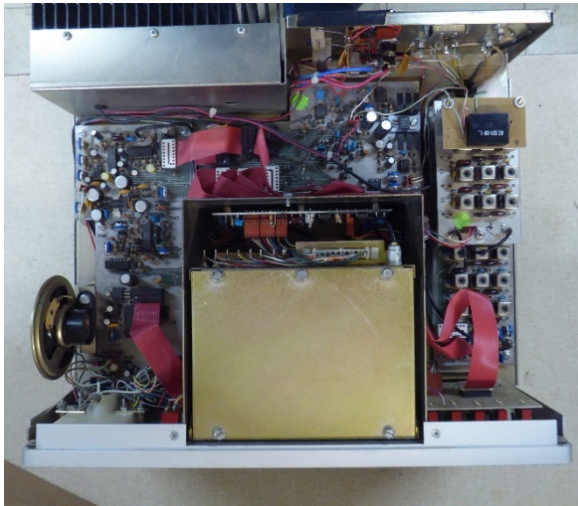
As it turns out (and learned only somewhat later), we were working on technology planned for the never produced Drake TR8 Transceiver, the successful but short-lived Drake RV75 Remote VFO for the TR7, TR7A, and TR5 Transceivers, and the soon to be released (at the time) Ten-Tec Omni V Transceiver. To be fair in this analysis, the Collins KWM-380 HF Transceiver was released with this technology in 1980 – but at a price that kept it away from the main-stream in the amateur radio market.

Also coming on stream was the automatic antenna tuner – in its infancy in the early 1980's but available none the less as external and built-in accessories in many Japanese radio models. Like the other American manufacturers, we looked at available third-party automatic antenna tuners and how to perhaps integrate them into our radio. This is as done later by Ten-Tec and their work to integrate LDG tuners within their transceivers and to provide seamless control of the devices as if they were designed into the radio.

An area of concern with upgraded technology in frequency generation was receiver noise. Some of the quietest receivers on the market – even compared to today’s radios – were free running VFO’s and crystal heterodyne frequency mixing schemes. To this end, we worked with PLL oscillators to replace the PTO oscillators but kept the crystal mixing scheme. Ten-Tec used this same concept with the later Omni V transceiver that utilized a PLL based VFO but kept crystal mixing and was known for its quiet receiver.

The mechanical considerations of the radio design were well satisfied with the Cubic Astro 103 with its Cadmium plated, yellow chromate conversion coated, carbon steel chassis, shields, and painted top and bottom covers. Large scale integration in circuitry had already been seen in Japanese equipment but seemed to be cost prohibitive to the volumes we perceived as attainable for the product. So, we stayed with generally available active devices.

The interior of the transceiver is cleanly planned as shown below:



**R&D Cubic Astro 103 HF Transceiver at W9MXQ**  
**Top View (front Panel at Bottom) on the left**  
**Bottom View (front Panel at Bottom) on the right**

Some interesting notes apply here. The Cubic Astro 103 owes much of its design to the initial Swan Astro 102BX. However, one of the biggest differences between the two is the appearance of the 30-, 17-, and 12-meter WARC bands on the Astro 103. The picture above, left, shows at the right side, the Preselector Board. At the rear of that board, you can see a smaller daughter that includes the three added bands. (In this view, you can also see an experimental linear amplifier switching board that covers the rear of the three added band preselectors.) Note that bottom shields – left and right sides – do appear in the transceiver at W9DYQ. They are on both transceivers at W9MXQ.

The picture above, right, at the back (top of picture) shows the Exciter Board with the two SSB filters that are cascaded in use – providing for a continuously variable 600 to 2700 Hz bandwidth. Looking carefully at this board shows an open place below the right-hand filter in this picture. Cubic offered a 400 Hz CW / RTTY filter for that location that provided better shape factor than the cascaded filters could provide at that bandwidth. Cubic was focused on good CW performance in this radio.



Above is a beautiful example of the Cubic Astro 103 HF Transceiver in use at W9DYQ. This Astro 103 is equipped with the optional 400 Hz dedicated CW /RTTY filter in the 13.2 MHz i-f. In operation, this filter, in receive, is in cascade with the 9 MHz SSB filter.

Below are a pair of Cubic Astro 103 HF Transceivers at W9MXQ. The top unit is the R&D unit from the 1980's when the analysis was being made. The bottom unit is the regular operation radio. The power supply to the left is the Swan PSU-6 – identical to the Cubic PSU-6A except for the paint scheme. The regular operation unit on the bottom is also pictured at the opening of this article with its own Swan PSU-6 Power Supply/Speaker Console. That unit and the one from W9DYQ are remarkably close in serial numbers.



**Cubic Astro 103 HF Transceivers at W9MXQ**

**W9MXQ Collection**

Cubic had a relatively unique feature in the Astro 103 model that was never developed with any accessory. When describing the use of the PTO MODE Switch, above, the EXT position was identified. The relates to the EXT LO (External Local Oscillator) connection on the rear panel – on the Cubic Astro 103 pictured at the beginning of the article:





When the PTO MODE is in the EXT position, the signal from the two PTO units is no longer connected to the radio. That allows the injection of a signal from an external oscillator that was not supported by any Cubic product. As described in the Astro 103 Owner's Operation Manual, a proper signal can be injected through EXT LO connector on the rear panel. The manual describes this signal as being:

For LSB	For USB and CW
$f_{LO} = F_{CARRIER} + 9.0000 \text{ MHz}$	$f_{LO} = F_{CARRIER} + 9.0033 \text{ MHz}$
$f_{LO}$ is the Injected Signal Frequency – keep level at 0 dBm	

Experiments with the R&D unit in the 1980's showed that an external oscillator could effectively replace one or both of the PTO's. Programming one of the many oscillators available these days could easily substitute for transceiver or separate receive and transmit – and allow for today's stability requirements even for digital data modes<sup>4</sup>.

One final comment is about the unique marketing philosophy of Cubic at the time. There were essentially two radios that preceded the Astro 103. Those were the non-WARC Band Swan Astro 102BX and Cubic Astro 102BXA. Those two were identical except for brands name (Swan vs Cubic. Respectively) and cabinet color (black vs beige, respectively). Here are the two of them for review:



**Swan Astro 102BX HF Transceiver**



**Cubic Astro 102BXA HF Transceiver**

**These transceivers are electronically identical.**

Cubic Corporation offered a program where for a fee they would convert a customer's Swan Astro 102BX or Cubic Astro 102BXA into a full specification equivalent Cubic Astro 103 – even to the point of a new Cubic Astro 103 front panel. But, as you know about collectors, there are always ways to spot the changed unit. If the unit was a Swan Astro 102BX, the unit retains the black cabinet covers, has a back panel that is unique to the 102BX and 102BXA, and retains its 102BX Serial Number Label. If it was a Cubic Astro 102BXA, the unit retains its back panel that is unique to the 102BX and 102BXA and its 102BXA Serial Number Label. A converted Swan Astro 102BX or a Cubic Astro 102BXA lacks the ability to accommodate an external receiver<sup>5</sup>.





**Astro 102BX and 102BXA Back Panel**  
**W9DYQ**



**Astro 103 Back Panel**  
**W9MXQ**

A note about the EXT MOD connector – this is in parallel with the microphone jack and allows for such external modulation as from an AFSK sound generator for RTTY or other digital mode.

As is history now, the idea of proposing a manufacturing program for the Cubic Astro 103 and the associated accessories and other Astro transceiver models never came together. It was not for the lack of trying but the cost realities for such a low volume enterprise, the necessary marketing costs to re-invigorate the name, and other related factors left this as a very pleasant exercise with good ham radio friends. Even my friend Bob, current W9DYQ, and I only began discussing it in recent years. But we both now keep our Cubic Astro 103 Transceivers alive and well – and on the bands. In fact, we just found, together, a parts-only unit that will hopefully improve some readout problems for W9DYQ's Astro 103 and provide the optional CW filter for the main Astro 103 at W9MXQ – and a few other parts we can use to keep our radios running in top shape.

In closing this month's Newsletter, I want extend appreciation to the Ozaukee Radio Club for my receipt of the President's Award for helping to produce a great club newsletter. That award also went to fellow long-time writers, Gary Sutcliffe, W9XT, and Stan Kaplan, WB9RQR. Writing has its own rewards, but recognition is certainly welcome and appreciated. I also appreciate being awarded recognition in an International Goodwill Award for these Vintage Radio Articles and the subsequent spreading of the name of the Ozaukee Radio Club in areas far removed from Southeast Wisconsin.

I appreciate that you read my articles. Remember that I am open to questions and comments anytime at my email address, [W9MXQ@TWC.com](mailto:W9MXQ@TWC.com).

A special note of thanks to my proofreader, Bob Bailey, W9DYQ. Bob is a bit more than a proofreader as he often adds commentary that makes it into the article. That is truer than ever this month as we shared stories on our "Astro Experience."

#### **Credits and Comments:**

<sup>1</sup> This was input received in a personal conversation with Ray Grenier, K9KHW, who for many years was the Sales Manager of the Amateur Electronic Supply (AES) chain of stores. He was at the anchor store and main warehouse for the firm The AES name is now absorbed into Ham Radio Outlet (HRO) (<http://www.hamradio.com>). Their store in Milwaukee, Wisconsin, is one of the largest HRO stores.

<sup>2</sup> This is the first of several articles on Swan and especially Cubic radios carrying both the Swan and Cubic names. Previous articles have chronicled older models such as the Swan 350 and 500 Transceivers, the Swan 750cw Transceiver, as well as the Swan 600-R / 600R Custom Receivers and 600T Transmitter. The new series will delve into the acquired CIR Astro Transceiver line, the Swan Astro Line, and the final Cubic Astro Line products.

<sup>3</sup> The call, W9DYQ, his now held by Ted's son – my long-time friend, fellow collector, and proofreader of these articles. Robert L. (Bob) Bailey, W9DYQ.

<sup>4</sup> An ideal example of such an oscillator would be the Elecraft XG3 Programmable Signal Generators or the KKmoon KY6800 DDS Dual-channel Function Signal Generator. The KKmoon KY6800 was used to make a general test for writing this article.

<sup>5</sup> The Cubic Astro 103 unit at W9DYQ is, as you can tell from the above, a converted Astro 102BX. In fact, its serial number plate identifies it as so. Also, noting the above comments about bottom shields, the Astro 103 at W9DYQ does not have bottom shields nor does it show evidence of a way to mount them. Did the Astro 102BX not have such shields? The investigation continues!

**W9MXQ**

## DX'ing & Contesting

*De Gary Sutcliffe (W9XT)*



Last month I mentioned a couple of online conventions. One was the QSO Today Virtual Ham Expo. Unfortunately, there were a lot of technical problems. People could not get their tickets, many of the presentations didn't work, visitors could not get to the manufacturers' booths, etc. Slinger's largest ham radio manufacturer had a booth and had maybe five potential customers show up. It was disappointing.

My talk on low band antennas did get off with just a few minor glitches. There were about 400 people who watched it live and so far about 850 watched it in replay. I am happy about that.

The talks were all pre-recorded and uploaded a week or more before the event. They are now available online, and you can watch them for free. <https://qsotoday.vfairs.com/>

You will have to register, but there is no cost. Once you register, you go to the site, which looks like the outside of a convention center. Click to go inside. On the right side is a sign that says "Auditorium." Click on it, and on the screen is the list of talks. You can scroll down and pick the ones that you find interesting. There are over 80 talks on all sorts of subjects. They will be available until April 16. After that, they are supposed to be uploaded to the web, but I don't know how long it will take for that to happen.

The other event was HamSCI. Most presentations were technical, which is why I enjoyed them. The speakers were a mix of scientists studying the ionosphere and radio propagation along with hams. There was one talk that I really liked. It was about sporadic E (Es) propagation titled "Amateur Radio Observations and The Science of Midlatitude Sporadic E" and given by K1YOW.

I hoped they would post it on YouTube or another site, but I could not find it. I did find the next best thing. YouTube had a recording of the entire day's events, nearly 9 hours! <https://www.youtube.com/watch?v=-CrvuS0h9XA>

Go to the 1:30 point, and the talk starts shortly later. The presentation goes into the things that create the ionized patches that we can use on the upper HF and lower VHF bands for communications. Of particular interest was the correlation of storms in the North Atlantic Ocean and multi-hop openings to Europe. If you are interested in Es propagation on 6M and other bands, it is well worth watching.

As we get into April, the Es season starts up. We have had some small openings at the end of March, but often it starts getting into high gear in late April or early May. Around mid-July it starts to fade out.

Most of the big HF contests end by April, and I tend to shift some of my radio activities to VHF, especially 6M. Mostly I am looking for new DXCC countries with multi-hop skip. In between, I collect grid squares. I know K9DJT and W9GA are into collecting VHF grids as well.

A popular award by the ARRL is the VUCC. You need to work and confirm 100 grids. I originally got it back in the 1980s. It was a lot tougher back then because fewer hams were on 6M. Now, just about every HF rig also covers 6M. That was a big incentive to get on the band. Who can resist having a band switch position on their rig and not put up an antenna? Some, I guess, but certainly not me!

The digital modes also allow making contacts when propagation does not support CW or SSB. Digital is great when propagation is marginal, but if you start seeing your S-meter moving, move down and work some SSB and CW. You can make contacts a lot faster on the traditional analog modes.

There is an extremely tough award, the Fred Fish Memorial Award. You get it by working every grid with land from the continental US on 6M. Only 12 people have accomplished this. W9GA is getting close. Ken is down to needing a couple of dozen grids. Will 2021 be the year he makes it?

This award is tough partially because propagation is not reliable. Openings to some areas may not happen all that often. Others, especially out west, don't have any active hams on 6M. Finally, some only have a tiny bit of land in the grid. Often it takes someone going there DXpedition style to work and confirm some grids. They try to work Es if it is present and switch to meteor scatter at other times.

There is a new WSJT mode available that should help with getting 6M grids. It is Q65. It is designed to use scatter and is good for ranges in the 100-300+ mile range or so. Those distances are sometimes challenging because they are out of the range of line of sight and normal tropo, and too short for Es and meteor scatter.

Q65 is still an experimental mode and is not in the general release of WSJT. My experience is that it is sensitive to settings. There are many options with different transmit/receive sequence times ranging from 15 to 300 seconds. The longer the period, the weaker the signal that can be copied. Longer sequences also mean that it takes longer to make contacts. Then there are the sub-modes A-E, which set the tone spacing.

Unless you have a schedule with the options agreed in advance, you have to figure out what the other station is using. Watching the transmit time of the other station will tell you the sequence length. Once you have that, you might have to try the sub-modes. A, B, and E seem to be the most popular. Timing sequences of 15, 30, and 60 are the ones I have seen, with the 60 second ones being used for moon bounce. Terrestrial seem to be mainly Q65 30A and Q65 15A.

There does not seem to be a lot of use of Q65 so far. I have seen maybe a half dozen on the 6M frequency and worked a few. Some stations were doing live demos with it, and they were making contacts over several hundred miles using 5 watts or so. That was impressive. Some stations have been using it on moon bounce. I had a really good copy on two stations using on



2M moon bounce. Most EME stations are still using JT65 even though Q65 seems to offer better results. Stay tuned as the bugs are worked out on this exciting new mode.

Even if you are not interested in 6M, Es propagation might help other radio activities. I know at least a few ORC members are working on Worked All States on all the HF bands. During the low sunspot period of the last four years or so, there have not been many opportunities to make contacts on 10 and 12 meters. This spring's Es season will be an excellent opportunity to make contacts on these bands. In fact, Es will often be open on these bands when it is not open on 6 meters.

There are no major radio contests in April or early May. There are many state QSO parties and other smaller contests. The same holds for DXpeditions. There are some single operator events planned. Usually, they are operating around work or vacation schedules, so operating times are limited, and often during periods without propagation to the US. For that reason, I usually don't mention them in this column.

Finally, I want to thank Pat, W9JI, for the President's award that he awarded to Stan, WB9RQR, Bill, W9MXQ, and myself for our efforts in helping to produce a great club newsletter. Bill continually works hams around the world who mention reading his column and the newsletter. That is really impressive.

Stan has been writing for 23 years, according to my calculations. This issue will mark the completion of my 19<sup>th</sup> year. Bill has been writing his column for a few years. That amounts to about 45 years of columns!

I am sometimes disappointed that there are not more articles by other members. I bet you have done something in ham radio in the last year that others would find interesting. I challenge every member to write up something in the next year.

Don't like writing? It is a lot easier than it used to be with word processing software with spelling and grammar checking. If you would like someone to review your article before exposing it to the world (it can be a bit scary the first few times), I would be happy to proof it and run it through a professional checking program I have. I bet the other regulars would be glad to help you out on your first article.

That wraps up April. I have a lot of antenna projects on the list for this year. I'm trying to get an early start this year. We have had some nice warm days in March, but too many are very windy. Climbing towers with 40 MPH gusts would just be insane. Hopefully, we will have a lot of nice spring weather for outdoor activities.

## DID YOU KNOW ABOUT ACTIVE WINLINK NETS?

By Stan Kaplan, WB9RQR

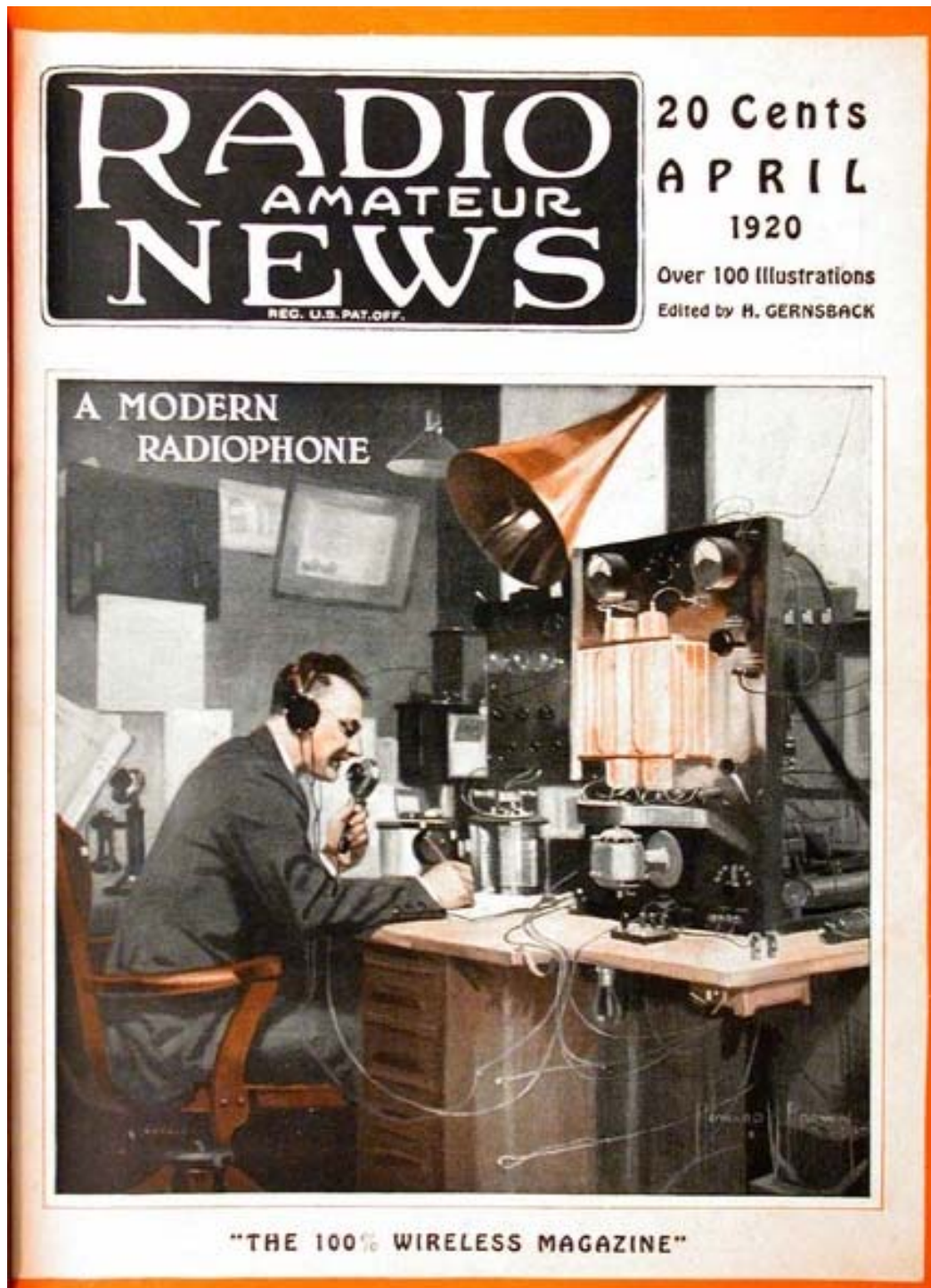
This article describes two such nets. The first has been operating in Wisconsin for well over ten years. “Invented” by Jim Markstrom, KB9MMA (SK) and Jim Darrow, KB9MMC (then Assistant Coordinator for Digital Communications in Wisconsin), the net was at first designed to send pictures, files and text during the Madison-Chicago 200 event in support of their communications during the 200 mile running race from Madison to Milwaukee to Chicago. The heavy use crashed local Winlink nodes with all the traffic! Later the net was changed to a one day format when the event no longer needed ham support. I became the third Net Control Operator and took over the one-day format for a couple of years, followed by the current NCO, KB9MMC. The aim for the redesigned one-day net was simple – to provide a way for hams to do a weekly test of their sending and receiving capability on Winlink. The net is now open to all hams (no constraints – no need to be an ARES/RACES member) each Tuesday for 24 hours local time. In that window, any ham with Winlink capability is invited to check in by sending their name and call sign, city, county (and state if outside WI) to the Net Control Operator, thus: **Jim Ham, WA9ABC, Simville, Rock County**. Sometime the next day the NCO will return a Winlink message to all who checked in containing a list of all who checked in with their check in data. In this way, the individual ham has tested their sending and receiving capability. It works. The first few years it grew from a handful of check ins to over 40, and currently the check in list runs between 70 and 80 each week. Furthermore, quite a few hams from out of state find it useful to check in as a test of their system. You can do it yourself, any Tuesday between 0000 and 2400 hours local time, by sending your information as shown above to [kb9mmc@winlink.org](mailto:kb9mmc@winlink.org). Sometime the next day you should receive a list of all who checked in, in the order checked in, including yourself.

The second net is new. The Great Lakes Area Winlink Net started operation on 10 March 2021, modeled on our Wisconsin Winlink Net as described above. It serves the same purpose – to provide a way that hams can do a weekly check on their sending and receiving capabilities. It is designed for hams in 9 locations: MN, WI, IL, IN, MI, OH, PA, NY and Canada’s Ontario Province – all bordering the Great Lakes. However, check ins are not restricted to hams in those sites and hams from other states and provinces are welcome. You can check in yourself on any Wednesday, (24 hours, your local time) by sending your first name, call, city, county, state and country to the NCO. Example: **Joel, AA9A, Saukberg, Ashland, Wisconsin, USA**. Send it to [kb8rcr@winlink.org](mailto:kb8rcr@winlink.org). Ryan Lughermo, KB8RCR, is ARRL Section Emergency Coordinator for Data Management/Special Projects, Michigan Section, and an Official Relay Station. Check out your Winlink station!

## Vintage Magazine Cover Art by Pat Volkman, W9JI

Our cover this month, "A Modern Radiophone", is from the April 1920 issue of Radio Amateur News. We see a man operating a phone transmitter. The equipment is very advanced, if not fanciful, with a loud talker (speaker), some very large tubes and many coils. The CW position is seen to the right.

World War I had ended a little over a year ago and hams are back on the air. Radio telephone is a novelty for most hams, who are still arguing over spark versus cw. QST published an article called "Recent Development of Radio Telephones" in June 1920 which laid out the theory and practice of phone communications. The article describes transmitters capable of 1 KW output, but those would surely have been out of the reach of most hams. The first commercial radio station, KDKA, made its debut in November 1920.



"A Modern Radiophone" Radio Amateur News April 1920



## Upcoming ORC Monthly Meeting Programs

May – Mike Harrington, KD9GCN – Virtual Shack Tour

June – Ken Boston, W9GA – Field Day

July – Pat Volkmann, W9JI – Members Field Day Reports

August – Tim Duffy K3LR – K3LR Talks About Contesting

### Creating a Presentation

Almost all of our presenters use Microsoft's PowerPoint to organize and present their information. If you don't have access to or aren't familiar with Power Point there is an alternative. The Open Office package contains Impress, which is similar to PowerPoint. Impress is easy to use and available at no charge. You can check out OpenOffice here: <http://www.openoffice.us.com/>

The monthly program is the highlight of the Ozaukee Radio Club meeting. We are fortunate to have a number of very talented people in our club, many of whom have shared their knowledge through a presentation. Share your expertise and experience with the club. Programs can be on any topic that is ham radio related. Contact Pat Volkmann, W9JI, at [orc\\_pat\\_w9ji@outlook.com](mailto:orc_pat_w9ji@outlook.com) to discuss your idea for a program

## Ozaukee Radio Club

### March 10, 2021 Meeting Minutes

de Ken Boston W9GA

This ORC meeting was conducted via an online (internet) connection using the ZOOM app. Prior to the meeting start, those members who were able to access the 'waiting room' via phone or computer/webcam were then introduced into the meeting space hosted by Pat W9JI. At that time various audio and video connection issues were addressed for the members before the meeting began.

ORC President Pat W9JI officially initiated the meeting at 7:29 PM, as introductions were recognized when members checked into the meeting, a go-around was not conducted. Pat then introduced Mike WO9B from the West Allis RAC who promoted the upcoming Wisconsin QSO party, slated to run on Sunday 3/14 (pi day) from 1PM to 8PM, and invited our members to participate. Gary W9XT then mentioned the upcoming QSO today online hamfest to run on 3/12 to 3/14, available for a \$10 fee. Gary is participating in the hamfest as one of the program presenters.

#### Program:

Mike WH6ZZ gave a presentation on the Marconi Wireless Telegraphy station, located on the north shore of Oahu, Hawaii, near the town of Kahuku. He described the station with its high power alternators and large antenna structure, which at the time (1914-1924) was the world's most powerful radio telegraphy station. He added that the station was later disassembled, and the property has undergone ownership changes from the military to a private business concern.

#### Committee reports:

Gregg W9DHI [repeater] reports that all the repeater systems are in good condition, other than a curious digital noise interference signal that has cropped up.

Gary N9UUR [treasurer] states renewals now total over 100 members, we have had minimal expenses, and also reported that the roster is nearing completion. WB9RQR moved acceptance, W9KR 2<sup>nd</sup>, motion carried.

Ken W9GA [secretary] posted minutes of February 2021 meeting; W9KR moved, W9JI 2<sup>nd</sup>, motion to accept then carried.

Tom W9IPR [scholarship] indicates no new developments.

**OLD business;** Pat W9JI reminded members of the ongoing KEY-UP activity, which ends soon, with log info to be sent to W9GA through the end of the month.

**NEW business:**

Ken W9GA described the awards for 2021; with Pat W9JI winning Ham of the year, and Don K9MOI winning Turkey of the year. There were several other winners for President's, Committee, Project and other categories.

K9QLP informed the members that Nels WA9JOB is in the hospital, and can be found on the K9QLP 442 MHz repeater. W9KEY wanted to thank Dave N9UNR for his donation of Ham radio books to the Cedarburg library.

Ken W9GA has indicated that Field Day 2021 as a club activity this year is looking good, and took a brief poll of members, where many are ready for the outdoor activity. The plaque for the ORC club win of the 2020 WiQP was awarded to Jim K9QLP in a random drawing. It was announced that the June Cedarburg Maxwell days is cancelled.

**Adjournment:**

40 members (unique callsigns) were on the ZOOM site. Contact Ken W9GA to obtain the list. Stan WB9RQR moved to adjourn, Todd N9DRY seconded the motion, and motion carried. Meeting ended at 9:12 PM. Following the meeting, several breakout rooms were opened.



Respectfully submitted,

A handwritten signature in black ink that reads "Kenneth Boston".

Kenneth Boston W9GA  
Secretary

## **ORC Meeting Agenda**

*May 12, 2021*

1. 7:15 – 7:30 PM – Check-In and Introductions
2. 7:30 PM Call to Order – President Pat Volkmann (W9JI)
3. Announcements, Bragging Rights, Show & Tell, Upcoming Events, etc.
4. Presentation: M. Harrington KD9GCN – Virtual Shack Tour
5. President's Update – Pat Volkmann (W9JI)
6. 1<sup>st</sup> VP Report – Ben Evans (K9UZ)
7. 2<sup>nd</sup> VP Report – Bill Church (KD9DRQ)
8. Repeater VP Report Gregg Lengling (W9DHI)
9. Secretary's Report Ken Boston (W9GA)
10. Treasurer's Report Gary Bargholz (N9UUR)
11. Committee Reports
12. OLD BUSINESS
13. NEW BUSINESS
14. Adjournment

### **Meeting Note:**

For the foreseeable future, we will be holding the meetings via the Zoom Videoconferencing platform on the same evening and time as we had the in-person meetings. Sign-in info will be emailed by President Pat Volkmann, W9JI via the ORC remailer usually about an hour before the start of the meeting.

Return undeliverable copies to:

### **The ORC Newsletter**

524 Alta Loma Drive  
Thiensville, WI 53092

### **First Class**

### **Next ORC Meeting via Zoom**

**May 12, 2021**

7:15-7:30 PM – Check-In

7:30 PM – Meeting Begins