The ORC Newsletter

Official publication of the Ozaukee Radio Club, Inc. Email all contributions to the editor, Bill Shadid, W9MXQ (newsletter@ozaukeeradioclub.org). Permission to reprint articles published in any issue is granted provided the Author (as shown in the article) and the Ozaukee Radio Club Newsletter are fully credited in any publication.

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Web site: www.ozaukeeradioclub.org **Facebook: facebook.com/orcwi**

Volume XLI	September 2023	Number 9

From the President

de: Bill Greaves, K9GN

The ORC Fall Swapfest will be held now, on Saturday, September 9th, at Fireman's Park in Cedarburg, starting at 6:00am for attendees and vendors. Tom Ruhlmann W9IPR ably leads the Fall Swapfest again this year. Thank you, Tom. (You can always call or email the event organizer to volunteer a couple of hours or so to help out by checking the membership roster on the ORC website at ozaukeeradioclub.org.) This event will be a good opportunity to see some friends, old and new, browse some equipment deals, lighten your wallet, and still make it home in time to cut the grass! I look forward to seeing you there.

Also, for your calendar, the HRO Superfest and the ARRL Wisconsin State Convention will be September 22-23 at the Ham Radio Outlet on Good Hope Road just east of 60th Street. Many local clubs, including ORC, and ham radio organizations as well as vendors will be staffing tables. This event provides an overview of amateur radio in the entire area and a good look at what everyone is doing and at the opportunities available.

I would like to give Fred Schwierske, W9KEY, congrats for another very well organized and executed Lighthouse Weekend in Port Washington, August 19-20, including setup on the 18th. This joint event with the LEFROG club taking the lead contacted other lighthouses and totaled more than 650 contacts nationally over the weekend. Field Day and the Lighthouse Weekend are the two major outdoor preparedness activities of the ORC.

I was asked by WiARC President, Nate Seidler, KC9TSO, to give their membership a presentation on my tower and ground radials installation. This might have been my first

and last presentation as I fumbled the start of the zoom slide sharing, but I did recover my own fumble. My slides covered just about everything and totaled over 100; one viewer said it went quicker than over 100 slides would suggest. He's a very nice person!

The club membership will gather on Wednesday, September 13th, both in-person and on Zoom, at 7:30pm, with meet-n-greet at 7:00pm, at the Grafton Senior Center or on Zoom. I look forward to seeing you there.

73,

Bill K9GN

https://www.orangeboxtraining.com

A Message from the Editor
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de: Bill Shadid, W9MXQ, Newsletter Editor

Please note Club President, Bill Greaves, K9GN, on Page 1 for his monthly message.

Fred Schwierske, W9KEY, starts out this month with an article on the successful Lighthouse Weekend event held as a cooperative event with both Ozaukee Radio Club and LEFROG Radio Club. Take a look at their impressive results.

Right behind follows Jim Albrink, K9QLP, follows up with a description of an impressive aeronautical mobile contact he made during the Lighthouse Weekend.

Over in Washington County, fellow member Vic Shier, WQ9T, Washington County ARES Emergency Coordinator, brings us an article detailing the successful fielding of three booth setups at Germantown, Jackson, and Slinger, Wisconsin, during their "National Night Out" events. They were held simultaneously on Tuesday evening, 1 August 2023.

Regular columnist, Dan Zank, AA9WP, Ozaukee County ARES Emergency Coordinator, talking about Artificial Intelligence and Emergency Communications in Part 2 of a series.

Another regular is Stan Kaplan, WB9RQR, in his 306th consecutive article – this time about Artificial Intelligence.

Regular On The Air Columnist, Gary Sutcliffe, W9XT, brings us the September and early October, "On The Air Activities" information. As always, check out the final page of Gary's article. That last page of his article is suitable to print and place in your shack as a reminder of what is going in the Radio World this month. Take a look.

This month, your Editor, Bill Shadid, W9MXQ, covers history involving his favorite ham radio manufacturer, R. L. Drake Company. This time, a story of Drake's last ham radio package. Just to be clear, Collins, Hallicrafters, National, and Hammarlund, among others, are also my favorite ham radio manufacturer!

Looking for ham radio things to do and places to go in the area? Check out Tom Trethewey, KC9ONY, as he tells us all about Upcoming Events.

See the "Classified Advertisements" column. This column is here for your use.

Pat Volkmann, W9JI, tells us about coming Programs and an invitation to make a presentation at a club meeting. Also see information about our September meeting presenter, Bruce Smith, AC4G.

Finally Check out the Flyer for the Ozaukee Radio Club Fall Swapfest on the very last page of this month's Newsletter.

Due to conditions beyond our Secretary's control, Ken Boston, W9GA, will provide the minutes of the August meeting at a later time.

Need help to get your thoughts on paper for an article? That is what the Editor does!! Let me know how I can help you. newsletter@ozaukeeradioclub.org

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LIGHTHOUSE WEEKEND – *An Outstanding Success!!*

de: Fred Schwierske, W9KEY

Members of the Ozaukee Radio Club, LEFROG organization and Guests gathered on August 18-20, 2023, at the 1860 Lightstation Museum in Port Washington, WI to participate in the International Lighthouse Lightship Weekend https://illw.net/.

ILLW, now in its 30th year, is always held the 3rd full weekend in August. This was our 11th year, and unlike 2022 – the weather was perfect. Our Special Event Station was one of 409 Lighthouses activated worldwide, 65 of which were in the USA. Positive increases compared to 2022, which saw 393 worldwide Lighthouses, 47 in the USA.

Objectives for the weekend consisted of promoting the beautifully restored 1860 Lightstation Museum, now operated by the Port Washington Historical Society, and contacting as many other Lighthouses and amateur radio stations as possible.

Setup began Friday Noon, consisting of a 20-meter station with tri-band beam at 35 feet, a 40-meter station using a wire dipole, and frequency agile battery powered portable station with a ground mounted vertical – all running 100 watts. On-Air operation began 8:00 AM Saturday morning, running into early evening – and resumed Sunday 8:00 AM

through 2:30 PM. In consideration of the quiet residential neighborhood, we limited operation to daylight hours.

The 20- and 40-meter bands were generally good. 15 meters proved quiet, impacting hoped for DX activity. We battled to hold band positions on Saturday with stations competing in the North American QSO Party. But Special Event Stations are not contests! Operators were encouraged to actively discuss the Lightstation history, buildings, and fabulous view of Lake Michigan. Since casual conversations are best accomplished using phone modes, we did not operate Digital or CW.

THANKS: A big "Thank You" to all ORC Members, LEFROG Members, Guests, and especially Museum Staff who contributed to a very successful weekend!!

- Extra special thanks to Tom, KC9ONY ; Loren, N9ENR ; and Joe, KD9RAW – whose long hours of event planning, equipment organization, transportation, and station construction were crucial to our success.
- If you have not seen Peter's, W0NG, excellent drone video, check out: 1860 Port Washington, WI Lighthouse & International Lighthouse / Lightship Weekend
- And finally, Mike, KD9GCN, for handling the expected inrush of QSL requests.

HIGHLIGHTS: With the Log analysis & repairs completed (well mostly) - final statistics are summarized below:

- Operated as Amateur Radio Station W9CQO - one of 65 USA and 409 World-wide Lighthouses entered in 2023.
- 750 Total Contacts, including 23 Lighthouse to Lighthouse Contacts.
- 18 Operators – A huge increase over the 10 operators in 2022.
  - 44 Daily Event Attendees: Including ORC / LEFROG Members + Guests - Friday (6+2) = 8 ; Saturday (16+5) = 21 ; Sunday (12+3) = 15
- Successfully maintained Band presence, even during Saturday's crowded North American QSO Party conditions.
- Not much DX. Perhaps a missed opportunity, but 15 Meters was quiet.

- Surpassed our rain shortened 2022 effort – 750 contacts, versus 281 last year. 22 Lighthouse contacts, versus 12 last year.

- Station ambiance greatly enhanced by active participation of Jeananne, N9VSV ; Nancy, KC9FZK ; Cherri, K9WOC ; & Darlene, KC9SBN.

- ARRL WI Assistant Section Manager Tom Czaja, KG9EE operated 40 meters and submitted an article to the Wisconsin Section Newsletter.

- Hosted visitors from the Milwaukee Radio Amateurs' Club, Miller Valley ARC, Milwaukee School of Engineering ARC, and Lightstation Museum Staff members.

- Enjoyed excellent weather, decent band conditions, enthusiastic operators, and a beautiful Lake Michigan view!

2023 ILLW WORLDWIDE LIGHTHOUSE ENTRANTS: 409

Argentina-9 ; Australia-40 ; Austria-1 ; Azores-1 ; Barbados-1 ; Belgium-4 ; Canada-9 ; Canary Islands-3 ; Chile-2 ; Cuba-4 ; Denmark-15 ; England-25 ; Finland-5 ; France-6 ; Germany-63 ; Gibraltar-1 ; Greece-3 ; Guernsey-1 ; Iceland-2 ; India-2 ; Ireland-11 ; Israel-1 ; Italy-10 ; Lithuania-2 ; Malaysia West-8 ; Netherlands-16 ; New Zealand-9 ; Norway-3 ; Northern Ireland-7 ; Poland-1 ; Portugal-9 ; Puerto Rico-8 ; Scotland-12 ; South Africa-18 ; Spain-4 ; Sri Lanka-3 ; Sweden-12 ; Switzerland -2 ; Trinidad & Tobago-1 ; Uruguay-3 ; Virgin Islands-1 **; USA-65** ; Wales-6.

Hope everyone had fun!!
73 ….. Fred Schwierske, W9KEY

STATISTICS: 2023 INTERNATIONAL LIGHTHOUSE LIGHTSHIP WEEKEND – August 19 & 20, 2023

TOTAL EVENT CONTACTS: 750
Contacts, 20M: 472
Contacts, 40M: 278

TOTAL LIGHTHOUSES CONTACTED: 23
Lighthouse Contacts, 20M: 14
Lighthouse Contacts, 40M: 9

TOTAL EVENT OPERATORS: 19
Operators, 20 Meters: 12
Operators, 40 Meters: 7

DAILY EVENT VISITORS: 43
Friday: 8
Saturday: 20
Sunday: 15

2023 International Lighthouse Lightship Weekend – W9CQO

W9KEY's Contest Summary Report for N3FJP's Amateur Contact Log
Created by N3FJP's Amateur Contact Log
Version 7.0.8 www.n3fjp.com

Total Contacts = 750

Operating Period: 2023/08/19 13:31 - 2023/08/20 19:10

Total Contacts by Band and Mode:

Band	CW	Phone	Dig	Total	%
40	0	278	0	278	37
20	0	472	0	472	63
Total	0	750	0	750	100

Total Contacts by Operator:

Operator	Total	%
W9KEY	149	20
KC9ONY	121	16
WB9RQR	79	11
AC9JV	75	10
KD9GCN	56	7
KD9RAW	50	7
K9FI	31	4
K0DSC	27	4
N9VSV	26	3
K9QLP	22	3
N9UUR	22	3
K9GN	18	2
KG9EE	18	2
KD9VGM	17	2
KB9TMB	16	2
KC9SBN	13	2
W0NG	8	1
N9ENR	2	0

Total = 18

Total Contacts by State \ Prov:
43 States Contacted - missing AK, HI, NE, NV, SD, UT, WY.

Total Contacts by Country:

Country	Total	%
USA	716	95
Canada	24	3
Australia	2	0
Spain	2	0
Brazil	1	0
Federal Republic of Germany	1	0
Puerto Rico	1	0
Sweden	1	0
US Virgin Is.	1	0

Total = 9

Total Contacts by Continent:

Continent	Total	%
NA	742	99
EU	4	1
OC	2	0
SA	1	0

Total = 4

Total Contacts by CQ Zone:

CQ Zone	Total	%
05	374	50
04	323	43
03	43	6
14	4	1
08	2	0
30	2	0
11	1	0

Total = 7

Aeronautical Mobile Contact During Lighthouse Event

de: Jim Albrinck, K9QLP

There are many experiences that hobbyists encounter during their activity in their particular hobby. Amateur Radio is no exception. I became a Ham because I enjoy people and exchanging information and learning from others. This fact and my travel adventures has taught me more than most of the courses that I took in school. I especially enjoy a good conversation with other Hams, whether it's on the repeaters or on HF. Too many activities (that is, contests) limit your ability to chat about many things such as radios, antennas, other hobbies, etc. The Lighthouse Event was different.

The organizers, LeFrog and Ozaukee Radio Club, did a great job setting up stations at the Port Washington Lighthouse. It was loads of fun to operate, log, chat with guests, and enjoy the pleasant breeze off Lake Michigan. I especially enjoyed talking with Hams on the 40- and 20-meter bands.

While operating on 20 meters I had the unique experience to work an aeronautical mobile (Stephen Colleton, EA7BEJ) flying east of Newfoundland in an Airbus A300.

We chatted about his destination (New York Kennedy) and the plane. Since my in-laws and a cousin had worked for General Electric Aircraft Engines in Cincinnati, I learned quite a bit about the engines and the planes that used them during Open House visits to the plant and conversations with my family. The A300, I was told during the QSO, was using Rolls Royce engines. Commercial aircraft are designed to use engines of the three major manufactures (GE, Pratt Whitney, and Rolls Royce). The airline customers negotiate with the plane manufacturer and the engine producers separately. We discussed the plane, engines, electronic equipment on board, and other topics. It was very enjoyable.

Since becoming a Ham, I have made 3 or 4 QSO's with commercial aircraft and they have all been pleasurable. I also made contacts with Lighthouse enthusiasts who wanted to learn more about the Port Washington Lighthouse and Port Washington and Ozaukee County.

If you have never worked the Lighthouse Event, put it on your calendar for next year. It's usually the third weekend in August. For details see:

https://www.illw.net/

Note: Stephen Colleton, EA7BEJ from Estepona, Spain. There is a picture of an Airbus on his QRZ page:

https://www.qrz.com/db/EA7BEJ

Washington County ARES Project
National Night Out

de: Vic Shier, WT9Q
Washington County ARES Emergency Coordinator

On Tuesday evening, 1 August 2023, Ozaukee Radio Club members Gary W9XT, Scott KD9YEW, Nate KC9TSO and Vic WT9Q along with other hams set up and staffed booths for Washington County ARES on National Night Out in Germantown, Slinger, and Jackson, Wisconsin. The Germantown event was set up and staffed by members of the Wisconsin Amateur Radio Club. The Slinger and Jackson events were set up and staffed by members of the Washington County Amateur Radio Club.

Teams of two were assigned for each location. Banners and handouts were created containing ARES and local club information. Two meter and HF stations were set up. Severe weather spotting and reporting was demonstrated. Code oscillators were available so visitors could hear their names in Morse code.

National Night Out is an annual nationwide event that takes place on the first Tuesday in August. Police and Fire Departments from around the country set up displays at local parks. They also invite organizations to set up booths. It is like a mini-fair with food, demonstrations, police cars, fire trucks, and sometimes even a helicopter.

The project was a success. We promoted ARES and local ham radio clubs. The public, members of the police and fire departments, and even a few ham radio operators learned more about ham radio activity in Washington County. We all enjoyed the event, and we plan on doing it again next year.

Check out these pictures from the Germantown, Wisconsin, setup:

And now a couple pictures from the Jackson, Wisconsin, setup:

Last, but not least, a picture from the Slinger, Wisconsin, setup:

All three setups enjoyed great attendance from the public visiting the evets in the three communities. A great opportunity to showcase the amateur radio and ARES!!

Watch for us again in 2024.

OZARES: Ozaukee Amateur Radio Emergency Services

de: Don Zank AA9WP, OZARES Emergency Coordinator, aa9wp@arrl.net

Artificial Intelligence and Emergency Communications Part Two

In last month's issue, I started looking at the use of Artificial Intelligence, AI, in emergency management and communications. Recently there has been a great deal of academic study in using AI in the medical area including emergency rooms. For emergency management and communications, several commercial firms are promoting their variety of concepts. Many of the commercial concepts reflect the same opportunities and challenges of incorporating AI into the emergency management field.

The August article concluded with the *Communication Technologies in Emergency Situations by* Anna Carreras-Coch, Joan Navarro, Carles Sans, and Agustin Zaballos from LaSalle Research. Their advice was based upon the International Telecommunications Union, ITU, Recommendation ITU-T Y.1271 or **Framework(s) on network requirements and capabilities to support emergency telecommunications over evolving circuits witched and packet-switched networks**
https://www.itu.int/rec/dologin_pub.asp?lang=e&id=T-REC-Y.1271-201407-I!!PDF-E&type=items

The ITU is recommending using present emergency technologies to create a ubiquitous sensor network. Or as they describe it *Public telecommunication infrastructure resources over large geographic areas should form the framework for ubiquitous coverage of emergency telecommunications.* In some communities, especially rural areas, the communication infrastructure is seriously lacking. In such a situation public communication technologies may need to be used. No matter what technology is used, the goal of emergency communication goal is to provide an increasing level of accurate information. However, an increasing level of information, some of which may be accurate and some which may not be accurate, increases the workload of emergency managers and first responders.

But AI can help sort through the messages, reports, and situation reports. A properly prepared and trained AI system can identify potential threats and alert emergency management of impending threats. While first responders may be focused on saving

property and/or lives they may not be aware of changing weather conditions. AI can include weather forecasts in its analysis and make recommendations or provide warnings to the first responders. Several benefits of AI are its speed, scale, and ability to process real-time information.

There are some concerns about the use of AI. AI is a learning system that learns from the information it receives. So bad information leads to bad learning. As one provider has put it "Think of AI mathematical algorithms as the recipe and the data are the ingredients, so if either is bad or corrupt so is your AI platform."
https://www.techtarget.com/searchdisasterrecovery/feature/Using-AI-for-disaster-response

Decisions made during emergencies are still made with political and social concerns in the background. Occasionally basic human understanding and creativity are needed for a proper response to be applied. It reminds me of the original Star Trek and the discussions between Captain Kirk and Mr. Spock. Sometimes the logical thing is not always the right thing.

The AI system also needs to understand many different disasters and potential disasters. So, a great deal of effort, time, and money is still needed to create an effective AI disaster response. Much like the emergency managers and first responders. This provides a great opportunity to train the AI system together with managers and responders. AI can learn from the human element and the human element can have a better understanding of AI responses and recommendations.

Artificial Intelligence will be a significant benefit to emergency management and communications someday. Today it is still in its infancy but growing quickly and expanding into more and more aspects of our lives. What is that expression? “May you live in interesting times.” Indeed.

OZARES Repeaters:

- **147.330 MHz (+ Shift) (127.3 PL)**
- **443.525 MHz (+ Shift) (114.8 PL)**

ORC Repeaters are On the Air Awaiting Your Call:

- **146.97 MHz (- Shift) (127.3 PL)**
- **224.18 MHz (- Shift) (127.3 PL)**
- **443.75 MHz (+ Shift) (127.3 PL)**

THE COMPUTER CORNER

No. 306: Artificial Intelligence (AI)

de: Stan Kaplan, WB9RQR, 715 N. Dries Street, Saukville, WI 53080-1664
de: wb9rqr@gmail.com

My daughter lives in Lexington, KY, and works for a large, multinational company that makes printers, other business machines, and software. She is a corporate writer and has recently been experimenting with the use of artificial intelligence (AI) for her company. During a July 2023 family visit with me, we were discussing her exploration of AI and she offered to let me try it. So, we logged into https://chat.openai.com and she permitted me to challenge the AI software with a task. I asked it to "write a paragraph on why one should use Linux instead of Microsoft Windows." The AI software responded as follows:

"There are several compelling reasons why one should consider using Linux instead of Microsoft Windows. Firstly, Linux is an open-source operating system, which means its source code is freely available to the public. This allows for transparency, security audits, and a vibrant community of developers who continuously improve and update the system. Secondly, Linux offers a high level of customization and flexibility, allowing users to tailor their experience to suit their specific needs. Additionally, Linux is known for its stability and reliability, making it an ideal choice for servers and enterprise environments. It also boasts a vast array of software options, many of which are open source and free to use, offering a cost-effective alternative to Windows.

Lastly, Linux is not as susceptible to viruses and malware as Windows, thanks to its robust security measures and smaller user base. Ultimately, Linux provides a powerful and reliable platform that empowers users with control, security, and a rich ecosystem of software."

Pretty nifty work, for a computer program tasked with writing a single paragraph on the subject! I think the AI program provided a very succinct description of the advantages of Linux, similar to those points I have been describing in my recent series on the subject (Computer Corner articles Cc296 through 302). While the AI program didn't use nearly as many words as I did in the series, I think it did a very good job with the few words (I count about 147) it used to describe the general advantages of Linux without delving into the details covered in my series. By the way, any or all of the Computer Corner articles, and an Index to them all, are yours for the reading or downloading on the ORC site (https://www.ozaukeeradioclub.org/). Just Ctr-click the link to take a look. Also, by the way, version 21.2, "Victoria," of my personal favorite Linux Mint Cinnamon, was released on 14 July 2023. Ctrl-click the following link to explore Linux or to get this latest version: (https://www.linuxmint.com/). Happy Computing!

On The Air Activities!

de Gary Sutcliffe, W9XT

September is a busy month for hams. We transition from the summer doldrums on HF with high absorption to better DX conditions. For us in southeast Wisconsin, we have a couple of local events, the ORC fall Swapfest and HRO Superfest.

September is also an excellent time to finish antenna projects before it gets too cold. It is also a good time to inspect your antenna system before it is exposed to the winter elements. Check that the nuts are tight. Check your guy wires for wear, proper tension, etc., if you have a tower. Are the seals around your coax connectors still good? Is the outer covering of your coax intact?

HF

HF conditions get better towards the end of September. We have a lot of absorption in the summer. In the fall, different chemistry in the ionosphere is in play, and conditions improve. Already, the higher bands have been improving with openings to the Pacific an hour after sunset on 10 meters.

If you don't have an antenna for 10 meters, now is the time to get one up. If you have a tripod on the roof for a TV antenna, a small 10M beam is possible. Otherwise, a dipole or even a used CB vertical can be cut down to operate on 10M.

Ten meters provides some amazing propagation during high sunspot periods. During the CQWW DX phone contest at the end of October, you will hear SSB signals from 28.300 through 29.500, or even higher in the morning when the band opens to Europe, over a MHz of solid signals.

I remember a time when I was visiting my parents in Madison during a high sunspot period. My dad (W9FRF SK) wanted to show me something in his car. He had a converted CB radio and a whip. We sat in the driveway talking to stations in Japan with 5 watts!

Ten meters is the only HF band Technicians have phone and data privileges, so if you have that license class, don't miss your opportunity to experience a lot of HF excitement this fall and winter.

VHF

The VHF bands provided some excitement recently. In mid-August we had the Perseid meteor shower. I concentrated on 6 meters, trying to get some needed grids in IA and MN. Those are tough for me. They are too far for ground waves and typical tropo propagation. To make matters worse, I have a big hill blocking my signals to the northwest.

But meteor trails allow for higher angle signals. The angles for some of the grids I needed were in the 13-16° range, plenty high to clear the hills. I picked up three new ones, leaving two more in Minnesota as the only two grids needed on 6 meters east of the Rocky Mountains.

Another propagation mode that kicks in during late summer and early fall is tropospheric ducting, or "tropo" for short. Temperature inversions allow VHF signals to travel long distances. They often happen when a cold front moves through. Another option is a stable high-pressure zone. We had one between August 19-23, then another over the Labor Day weekend.

The openings were widespread and in many directions. I don't think the opening really closed, just jumped around. I was working stations on 2M well after midnight and well before sunrise. This was all FT8.

Gary, K9DJT, passed on his comments on the August and early September tropo openings.

> Back in July of 2021, W9XT coerced Lyle, WE9R, and myself, to purchase an Icom IC-9700. As a matter of fact, the three of us went into HRO together to make our purchases. This was going to be my first all-mode, VHF, UHF, and Microwave radio. At the time, I had no idea how much fun it was going to be. Starting August 19th of this year, I began to experience my first true Tropospheric ducting event.
>
> Also referred to as "Tropo" or a Temperature Inversion. I made fifteen 2m QSO's and 3-70cm that first day. The next day seven 2m and nine 70cm, and the following day, the 21st, forty-one 2m and fifteen 70cm. I was in disbelief! (As you may have guessed, the mode we're using is FT8.) From August 22nd to September 1st, the totals were fifty 2m Q's and sixteen 70cm Q's.
>
> Then the floodgates opened again. On September 2nd I logged thirty 2m and ten 70cm QSO's. September 3rd netted me fourteen 2m and three 70cm, followed by twenty-three 2m and five 70cm on September 4th. If you boil this down, it equates to 124 *Grids* and 35 *States* on 2m, and 39 *Grids* and 11 *States* on 70cm.
>
> Remember, these two frequency bands are normally line-of-sight, or to the horizon, type of communications. I had never thought it possible to work as many Grids, or more so, as many States, on 144 MHZ and 432 MHz. I'm indebted to Gary, W9XT, for introducing me to yet another facet, and phenomenon, of this marvelous hobby.

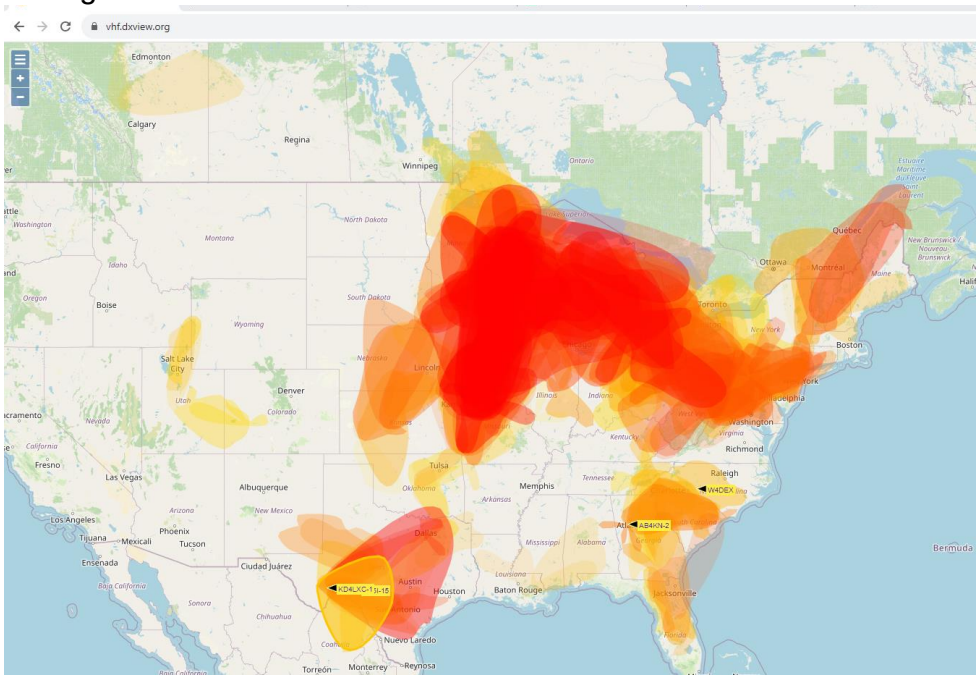
Congratulations on completing 2-meter VUCC so quickly, Gary! The VUCC award is the VHF cousin of DXCC. Instead of DX countries, you count grids. For 6 and 2 meters, you need 100 grids. As you go to the higher bands, the number of grids necessary decreases. Gary already has a good start on the 50 required grids for VUCC on 70 cm.

I went from about 130 grids worked on 2 meters to over 160. I also picked up a new state, South Dakota. Gary, K9DJT, was reporting all the stations he worked on 432 MHz. I didn't want to miss the fun, so I jury-rigged something for the band.

There was a small 70cm beam in my shed. I cobbled together three pieces of coax of questionable heritage to get a feed line out to the tower. I just mounted it up 7' off the ground and in a fixed direction. The SWR was about 2.5:1, and it was pointed through t rees. Trees create a lot of attenuation on 432 and higher bands. It was probably about the worst combination you could think of.

Despite this, I worked about 20 grids and ten states on 432 MHz. Since then, I made a bit of improvement on the coax situation. Hopefully, I can make further improvements before the September VHF contest.

Tropo openings are likely for the next month or so. K9DJT and I have been on FT8 for 2M and 70cm. Horizontally polarized antennas are the norm. But you can still have fun with a two-meter FM rig. A friend in Illinois, Mark, N9UM, sent me some videos of contacts he made or heard on 2M simplex. One was a QSO between a station in North Carolina and Canada on 146.58 MHz. Another was his QSO with a station in Arkansas. Mark runs a 50-watt FM rig.



A tropo map showing a tropo opening over the Midwest with paths to the south and east. https://vhf.dxview.org

You might try leaving your 2M rig on a simplex frequency. If you have a small vertically polarized beam, that will help. You might check 2 meters if you hear distant FM broadcast stations. Typically, tropo is best in the morning, especially if it is calm and you see haze in the distance.

Another thing to check is the https://vhf.dxview.org site. If you see an orange blob over us, there is a good chance of a tropospheric opening.

ORC Swapfest

The fall ORC Swapfest is September 9, right after this newsletter is published. You should be aware of it by now and hopefully plan on attending.

HRO Superfest

The HRO Superfest is Friday, September 22, and Saturday, September 23. There is nothing on their website yet, but there is a sign at the store announcing it. Washington County's largest ham radio manufacturer, Unified Microsystems, will have a booth there, and I am scheduled to talk at one of the presentations on Saturday. In the past, it opened at noon on Friday and 9:00 AM on Saturday. If you have been to the Hamvention®, you know how long you must wait to talk to one of the major radio company's sales reps. Not so at Superfest. It is something special to have an event this close to home.

Carl, K9LA, our ARRL Central Division Director, and others from the ARRL will also be there.

Ham Radio Workbench

I listen to several podcasts. Some are ham radio focused, and some are more engineering-related. My favorite ham radio podcast is the Ham Radio Workbench. It comes out every two weeks. There is a group of 3 core members with a few additional ones that are occasionally on. They start by talking about the radio-related projects they are working on. Then, it is followed by an interview with a guest.

Back in April, I mentioned that ORC member Jeff, W9KW, was a guest. He talked about caring for rechargeable batteries. I learned a lot from his appearance.

The HRWB again tapped an ORC member. I was a guest in August. I talked about Beverage and other low band antennas. Like many of their podcasts, this was long, and it went over 3 hours. We didn't get to the main topic until the 1:12 point.

It turned out that the very next one also featured a Wisconsin ham. They had Don, K9AQ, on. He talked about building home brew solid state HF amplifiers. Don is a member of my DX club. His amplifiers are works of art.

You can find the list of Ham Radio Workbench podcasts at:
https://www.hamradioworkbench.com/podcast

QSO Today Academy

The QSO Today Virtual Ham Expo started during the COVID lockdown. It was a great way alternative to in-person events that were canceled. It continued twice a year since then. The name was changed to QSO Today Academy, and the next one will be September 8-10. It starts Friday night with the Ham Radio Workbench crew doing a live version of their podcast.

The actual presentations start Saturday morning and continue Sunday. It is smaller than the previous ones. There are only 27 presentations this time. That is down quite a bit from the earlier events. My personal view is that twice a year is too often, and that hurts them. But there are some interesting presentations scheduled, and I signed up.

It is at a bad time for us. That weekend is the ORC Swapfest, the ARRL VHF Contest, and the first game of the regular season for the Packers. But if you register, you have 30 days to watch recordings of the talks.

Registration is $15.00. More info at https://www.qsotodayhamexpo.com/ Note that the times are listed in PDT. That is kind of odd, but make sure you take that into account.

Contests

September has a couple of big contests. The first one is the ARRL September VHF contest. It starts the afternoon of the ORC Swapfest. Work other stations once per band, regardless of mode. The exchange is the grid. Activity on this one is less than the June event because it is unlikely that we will have sporadic E on 6 meters. But as mentioned before, there might be some good tropospheric ducting that can provide a lot of exciting contacts.

The CQ WW contest season starts the last weekend of September with the RTTY event. The phone version is the last weekend of October, and CW is the last weekend of November. Exchange signal reports and CQ zone. We are in zone 4. In the CW and phone events, contacts with your own country are worth zero points, so you only work them for multipliers. In the RTTY contest, contacts with your own country are worth one point.

If you operate FT8, you already have the equipment to operate RTTY. You just need a different program. I like MMTTY, a free download. RTTY is similar in that the computer prints out what it decodes. It is faster than FT8 but will not decode weak signals as well as FT8 can. It also can have errors if there is QRM. In bad QRM, you only get gibberish printed with RTTY. With FT8, you don't get anything. I prefer RTTY to FT8 in contests because it is faster, and you must be more involved.

The California QSO Party is October 7-8. It is the biggest state QSO party, and there are a lot of stations on for it. It is an excellent warm up and station shakedown for the fall and summer. Work only California stations. Send a serial number and the state. California stations will send a serial number and a four-letter abbreviation of their county. You may

want to print out and review the county list beforehand. You will win a bottle of California wine among the top 20 scoring out of state participants! Talk about incentives!

DXpeditions

DXpeditions will become more common as we enter the fall and winter months. A lot of the best activity is happening in the Pacific Ocean this month and early October.

- A group of Japanese operators will be on from Palau September 12-18. Each will be using a separate T88 call sign.
- K7AR, W7YAQ, and a couple of other US hams will activate Lord Howe Island from September 20 through October 4. They requested the call sign, VK9LAA, but if you hear a different VK9L station, it is probably them. They will also be operating the CQ WW RTTY contest.
- The Rebel DX Group will be in Tuvalu starting September 21 for two weeks. They will have ten stations on the air. Two stations will be on CW, one on SSB, and seven on FT8.
- A group of Croatian hams plan on being on Samoa October 1-14. They will be on 160-6 meters. They land to focus on CW but will be SSB and FT8 as well.
- French Polynesia will be by a German group on October 2-15. 160-10 Meters. Look for TX6D.
- Swains Island is probably the biggest one coming up in the next month or so. An international team of about a dozen operators will operate 160-6M, CW/SSB/Digital/RTTY. The call sign is W8S, and they will have six stations on the air.

The Pacific sure is a popular destination in September and early October! If that is not enough, there are about a dozen more DXpeditions to the Pacific Islands later in October and early November. This will be an excellent opportunity to fill in some needed Pacific countries.

September will be a hectic month with two must-attend local events and a virtual one. The shorter days (losing about 3 minutes/day right now) will improve HF propagation. The cooler weather will make working on antenna projects more comfortable. Take advantage of the month!

What have you been working? Did you have a memorable QSO? Did you try a new band or mode? Tell us about it! Write an article, or if you just have a few comments, email me, and I will put it in the next OTAA column.

W9XT's Contest, Operating, DXpedition, and Special Event Picks for September and Early October 2023

W9XT's DXpedition picks for September and early October 2023					
QTH	**Dates**	**Call**	**Bands**	**Mode**	**Link/notes**
Palau	Sep 12-18	T88xx	160-6M	S/D	
Lord Howe I	Sep 20-Oct 4	VK9LAA (requested)	160-6		On for CQ WW RTTY Contest
Tuvalu	Sep 21 – Oct 9	T22T		C/S/D	
Samoa	Oct 1-14	5W0LM	160-6M	C/S/D	Focus on CW
French Poly-nesia	Oct 2-15	TX6D	160-10M	C/S/D	
Swains	Oct 4-17	W8S	HF	C/S/D	Also, RTTY, six stations

Modes: C = CW, S = SSB, D = Digital (may include RTTY)

W9XT's contest picks for September and early October 2023					
Name	**Start**	**Length**	**Bands**	**Mode**	**Link**
ARRL VHF	Sep 9 1800 UTC	33	50 MHz & up	All	http://arrl.org/september-vhf
CQ WW RTTY	Sep 23	48	HF	RTTY	https://www.cqwwrtty.com/index.htm
CA QSO Party	Oct 7 1600z	30	HF + 160	CW, SSB	https://www.cqp.org/Rules.html

Dates/Times in UTC. Subtract 6 hours from UTC to get local (CST). HF = 80, 40, 20, 15, 10 Meters

W9XT's operating & event picks for September and early October 2023			
Event	**Dates**	**Details**	**Link/notes**
ORC Fall Swap-fest	Sept 9		https://www.ozaukeeradio-club.org/files/2023_Fire-mens_Park_Flyer.pdf
QSO Today Acad-emy	Sept 8-10	Requires registration. $15	https://www.qsoto-dayhamexpo.com/
HRO Superfest	Sept 22-23	HRO Milwaukee	

Vintage Amateur Radio

de Bill Shadid, W9MXQ

By the early 1980's R. L. Drake was feeling the competition from Japan for Amateur Radio Equipment. Hallicrafters, Hammarlund, and National had left the scene, either gone out of business (National and Hammarlund) or morphed into military suppliers (Hallicrafters). Collins, that is with us to this day, had recently released their last amateur radio product, the KWM-380 HF Transceiver. Major producer, Swan, had taken the name of its corporate owner, Cubic, and produced transceivers along with Drake, into the mid-1980's. A spinoff headed by Swan's original founder, Herb Johnson, W6QKI, had started Atlas Radio Company, in 1974, making transceivers, transmitters, and receivers but was fading from the market in the 1980's. (They did attempt a comeback in the early 1990's – but it was not successful.[1])

Those of you that read my articles regularly know that I am a dyed in the wool fan of the R. L. Drake Company and their amateur radio products. Outside of ham radio and shortwave listeners, they are more well known for their line of data and video downlink receivers and related electronics supporting the satellite communications industry.

So, back to the 1980's where we will be for this installment, talking about this complete Drake TR5 Station from that time (supported by a few modern accessories):

Front and Center – Drake L75 Linear Amplifier, Drake TR5 HF Transceiver, Drake RV75 Digital Remote VFO with other Accessories.

W9MXQ Photo

The other accessories in the above picture include the Drake SP75 Speech Processor and CW75 Electronic Keyer positioned on top of the TR5 Transceiver. At the left side of the picture, see the Drake WH7 Wattmeter sitting on top of the Drake MS7 Speaker Console. On top of the L75 Linear Amplifier you will see a slightly more modern accessory, the Timewave DSP-59+ External DSP Unit. Out front you can see the Drake 7077 Desk Microphone. Also shown are much more current accessories, including Unified Microsystems XT-4 Memory Keyer, the Bencher BY-1B Paddle, and a Nye Viking Straight Key.

In 1981, following their successful TR7 and TR7A HF Transceivers and accessories, Drake was introducing a cost reduced, and in some ways better performing TR5 Transceiver. Gone was the complex (and expensive) up-conversion design, replaced by a more traditional and conventional design – based on the very successful and long running Drake TR-4CW/RIT Transceiver – the last TR-4 model. Actually, block diagram comparisons of the TR-4 design and the TR5 design shows similarities indicating that the TR5 was perhaps a solid-state version of the old TR-4.

Never Produced - Drake TR-5

Three years ago, this author wrote about the Drake TR5 Transceiver and broached the subject of the never produced TR-5 Transceiver of hybrid design (solid state with vacuum tube driver and final amplifier). Readers will recall my comparison of the TR-5 and the ultimately produced TR5. (Drake dropped the hyphens, at the beginning of the TR7 product lineup.)

Moving into the 1980's, Drake was evolving both the Transceivers and the Accessories in their line. It appears that Drake was continuing to field the TR7 Transceiver design (and the later TR7A, which included many optional features original TR7 product offering).

> Note: A model TR7B was prototyped that included design opportunities to reduce cost and improved dependability in areas like the digital readout, and elsewhere. Likely, a TR7B variant would also have made the WARC bands easier to access than they were on the TR7 where an optional circuit board, the AUX7, was required.

Drake was evolving its accessory line to become more compatible with both the TR7 (and TR7A) line and the new TR5 product as well. This is evidenced in model designations that evolved away from being things like an MN7 Antenna Tuner evolving into an MN75 Antenna Tuner. Note that the newer tuner (more outwardly embracing the newly assigned WARC Bands) uses the number "75," which enhances its use with both the TR7 and the TR5 radios.

The 200 to 300-watt antenna tuners from Drake had evolved with repackaged, specification adjusted products. These products are shown in different forms over the years: (4-Series Antenna Tuners are shown because they remained very popular.)

Drake MN-4 Antenna Tuner

Drake MN7 Antenna Tuner

Drake MN75 Antenna Tuner

R. L. Drake Company

The 300-watt Drake MN-4 Antenna Tuner matched the Drake TR-4 Transceiver Series and the T-4X Transmitter Series radios. Essentially the same, different adaptations to supported frequency bands the following specifications were supported:

Medium Power – 300-Watt (Input Power) Antenna Tuners			
Models	**Bands**	**WARC Bands**	**Matching Radios**
MN-4	80-10 Meters	No	TR-4(x) & T-4X(x)
MN-4C[3]	160-10 Meters	No[4]	TR-4(x) & T-4X(x)
MN7	160-10 Meters	No[4]	TR7
MN75	160-10 Meters	Yes	TR5 and TR7

Respective R. L. Drake Operating Manuals

Interestingly, Drake used a different numbering approach in the high power (2,000 watt) tuners. These included the MN-2000 for the TR-4 and T-4X series transceivers and transmitters (and L-4B Linear Amplifier) and the MN2700 for the TR7 and later the TR5 Transceivers. Later, the MN2700 was also matched with the Drake L75 Linear Amplifier.

High Power – 2000-Watt (Input Power) Antenna Tuners			
Models	**Bands**	**WARC Bands**	**Matching Radios**
MN-2000	80-10 Meters	No[4]	TR-4(x) & T-4X(x)
MN2700	160-10 Meters	No[4]	TR7

Respective R. L. Drake Operating Manuals

In the case of the high-power tuners, note that Drake merely changed the popular MN-2000 to a number referencing the old product but inserting the “7” in the number to denote the new product line and specifically the TR7 Transceiver and L7 Linear Amplifier.

High Power – 2000-Watt Antenna Tuners

Drake MN-2000 Antenna Tuner

Drake MN2700 Antenna Tuner

W9MXQ Photos

Drake Antenna Tuners were not wide range as far as impedance matching capability. The MN-2000 unit – used by many to this day even in later Drake products – had a capability of matching 3:1 SWR to unity. The MN2700 improved on that figure with the capability of matching 5:1 SWR to unity. And, to go a step further, the MN2700 had an optional, rear mounted 4:1 balun allowing matching up to 5:1 for balanced feed-line antennas. I have successfully used my MN2700 to load end-fed wire antennas – something not always practical with the MN-2000.

Drake also made a variety of Remote VFO products to support the TR7 and TR5 Transceivers. Three of them were announced and two were produced.

The Drake RV7 VFO

This is the original Remote VFO introduced in 1977 at the time the TR7 Transceiver came to market. It works fine with the TR5 Transceiver, but the dial is backward to what is required in that radio. (That does not cause a problem as long as the user monitors the radio's readout.)

W9MXQ Photo

The Drake RV5 VFO

This VFO was designed for the TR5 and is identical to the RV7 except that the analog calibration is backward to the "7" model.

This model was never produced. It was only made as a prototype.

WB4HFN

The Drake RV75 VFO

This digital, programmable, VFO was actually introduced as an accessory for the TR5 but caught on for the TR7 as well. It is very stable, compared to the RV7. It can be programmed for fixed frequency operation.

W9MXQ Photo

The TR5 did not have an analog VFO readout on the front panel as did the TR7. Actually, the digital readout on the TR7 was an option, at first. The analog dial worked just like the one on the Drake TR-4C(and later) Transceiver, the R-4C Receiver, and the T-4XC Transmitter. However, very few TR7's where ever shipped without a digital readout.[5]

> Note: All along here I have referenced the "VFO" in the various radios and accessories. To be clear, Drake did not use the traditional VFO we have come to see as being tuned with a variable capacitor. Drake used a Permeably Tuned Oscillator, known as a "PTO." No matter how we identify it, it is still a "variable frequency oscillator." So, using the more common "VFO" designation is technically correct, if not common.

A major accessory in any amateur radio product line has to be a Linear Amplifier. Second only in cost to the Receiver/Transmitter or Transceiver in the setup. Drake was no exception. Drake started with the popular L-4 and later the L-4B, 2,000-watt PEP SSB and 1,000-watt CW/RTTY Linear Amplifiers. With the release of the TR7, and later with the release of the TR5, Drake had two newer amplifiers, the Drake L7 and the Drake L75, respectively.

Drake L7 and L75 Linear Amplifiers – Power and Specifications		
Detail	**Model L7**	**Model L75**
Vacuum Tubes	Eimac 3-500z (2 tubes)	Eimac 3-500z (1 tube)
Bands Covered	160-10 Meters (Broadband 1.8 to 30 MHz)	160-10 Meters (Broadband 1.8 to 30 MHz)
Power Input (SSB)	2,000 Watts	1,200 Watts
Power Input (CW)	1,000 Watts	1,000 Watts
Power Output (SSB)	1,200 Watts	600 Watts
Power Output (CW)	600 Watts	600 Watts
AC Power Input	120/240 VAC	120/240 VAC
Power Supply	Separate Cabinet	Internal

Front Panel Layout – L7 at the Left – L75 at the Right

The L7 has a Power Supply that sits elsewhere. The L75, on the other hand, is a self-contained, single cabinet radio. Both operate with about 3,200 Volts. The internal design of the two is very similar in many ways.

Both are W9MXQ Photos

At the time these amplifiers were produced, the legal power level for amateur radio operators was 1,000 watts DC Power Input (simply stated). Also in that period, the Federal Communications Commission in the United States, had agreed that we could run 2,000 watts input power on SSB. Using linear amplifier technology of the day, it meant running an average input power of 1,000 watts. This is a subject for another day but in today's world in the United States, running these amplifiers loaded to 2,000 watts (for 1,000 watts output) on CW is perfectly legal on the two-tube L7 Linear Amplifier. That amplifier is limited by the capability of the 3-500z finals operating at the plate voltage and current provided by the power supply. The tubes are capable of more power than the amplifier can actually accommodate.

The complete station shown on the first page of this article was setup to demonstrate this vintage of equipment operating on SSB and CW. Modern modes, such as FT8, for instance, are not possible but modes such as RTTY and PSK31 are certainly within these radios' capability.

Operating of the TR5 Transceiver with the L75 Linear Amplifier on CW is a real pleasure. Here are some meter pictures at key down drive power of about 70-watts from the TR5:

TR5 running 70-watts showing 2,800 DC Volts on the plate of the 3-500z. Plate voltage at key up (no output power) is about 3,100 volts.

Further comment on plate voltage can be seen on the next page in the picture showing the station wattmeter.

W9MXQ Photo

TR5 running 70-watts showing 360 mA of plate current on the 3-500z.

360 mA at 2800 Volts = 1,008 watts. That is to Drake's specifications for this amplifier.

Plate current between CW characters (cutoff bias) is about 120 mA. That is to Drake's specifications for this amplifier.

W9MXQ Photo

This is the Drake WH7 Wattmeter showing 520 watts output. At 1,008 watts input this shows a plate efficiency of about 52%. That is acceptable for this amplifier operating in class AB1.

When running SSB, the capacitors in the power supply keep plate voltage more at about 3000 volts at the same 360 mA of plate current. That translates at voice peaks of close to 600 watts – an output some Drake literature would quote.

W9MXQ Photo

Some popular options at the time were the excellent Drake SB75 Speech Processor and CW75 Electronic Keyer. These, as shown on the first page of this article sitting on top of the TR5 Transceiver, are here:

Sitting on top of the TR5 Transceiver, left to right:
Drake SP75 Speech Processor and CW75 Electronic CW Keyer
W9MXQ Photo

The SP75 Speech Processor is setup to process audio from the Microphone, Tape Recorder, and Phone Patch (left to right on panel buttons, MIC, TAPE, and PATCH). The three input buttons are mechanically cancelling so pressing one, releases the other two. Separately there is a push-push power switch. The green lamp next to the ON button indicates power to the device. The AUDIO lamp to the left of the MIC button illuminates on voice peaks, according to the CLIPPING LEVEL-dB knob. I set my SP75 to 3 dB of clipping just to add a little “kick” to my voice. I am not after highly processed audio, but this little device can push a lot of audio into the radio – up to the point of being very irritating to the listener. There is a somewhat involved alignment process when setting up the SP75 Speech Processor that is covered in the Operating Manual. This alignment is very sensitive to the microphone used and even between the several Drake 7077 Desk Microphones that I have. All require individual setup.

Properly adjusted and running a Clipping setting of 3 dB with the TR5 (or the TR7 and TR7A Transceivers) nets numerous audio compliments. Properly adjusted and used, the SP75 is a real asset to any Drake station. While the microphone connections are different, the SP75 works very well with the Drake C-Line Station (R-4C Receiver, T-4XC Transmitter) and the Drake TR-4CW/RIT Station. I have also used the SP75 very successfully with other brand radios, such as the Cubic Astro 103 Transceiver, the Swan 100MXA Transceiver, and the Hallicrafters SR-400 Cyclone II Transceiver. Again, keep the clipping setting to about 3 dB – resist moving it higher!!

One of the items that every collector of Drake solid state (TR5, TR7, and TR7A) transceivers looks for is the CW75 Electronic CW Keyer. Few were made and a lot fewer ever become available today. They draw hundreds (and hundreds!!) of dollars when one solo unit appears on eBay or one of the sellers of vintage radio equipment. Look above at the CW75 at W9MXQ sitting to the right of the SP75. Here is the CW75 back panel, showing connections:

Rear Panel – Drake CW75 Electronic CW Keyer

W9MXQ Photo

This is a discrete TTL chip CW keyer – no dedicated keyer integrated circuit, such as the Curtis™ Keyer Chip (now owned by MFJ Enterprises). The CW75 is Iambic so modern in

that way. No memories are available, but it does have the ability to key not only a solid-state radio but also has an optical coupler allowing it to work with more modern tube radios with grid block keying (+/- 300 volts at up to 100 mA). The reader has to remember that when the CW75 Keyer and the TR7 Transceiver were new, Drake was still making the Drake T-4XC Transmitter and the TR-4CW/RIT Transceiver. These were vacuum tube radios using grid block keying. So, Drake felt compelled to make the little CW75 backward compatible to grid block keyed radios in their lineup.

The 11-16 VDC IN line on pins 1 and 2 of the back panel strip could connect to 12 VDC that might be available in the shack – or to the 12 VDC accessory line on the back of the Drake PS75 Power Supply (for the TR5) or the Drake PS7 Power Supply (for the TR7 and TR7A). Note the polarity requirement on the key line (pins 3 and 4). One nice feature of the CW75 was the easy accommodation of a straight key (HAND KEY) on pin 5 (and pin 7 for ground, just to the right). (Pin 7 is also the ground connection for the Keyer Paddle on pins 6, 7, & 8.) This Key connection is handy on radios like the TR7 for quick key down if tuning a Linear Amplifier or Antenna Tuner. (The later TR5 has a front panel "Lock Key" position on the MODE switch to send a carrier for the same purpose – without a key.)

> Note: Times change and many hams today, not familiar with CW as a mode they use, have a key at their station simply to key their transmitter to get a carrier for the wattmeter, tune an amplifier, or tune an antenna tuner. Such keys are a nice visual touch but have never been used to send CW. Not a good or bad thing, necessarily, just reality!!

The CW75 Electronic CW Keyer is a fine piece of equipment but for this article and this setup, I did not use it. Of course, I did use the TR5 Transceiver (without the L75 Linear Amplifier most of the time) to operate CW, contacting Parks on The Air (POTA) stations. To run on CW, I used a very nice little CW Electronic Memory Keyer, the Unified Microsystems model XT-4. In the left picture, below, I had just finished setting it up and had the keyer power turned off, while listening to 40-meter CW:

CW Tools – Ready to go to work. Unified Microsystems XT-4 Memory Keyer, Bencher BY-1B Key, and Nye Viking Speed-X Straight Key.

W9MXQ Photo

The Unified Microsystems after a string of CW contacts of POTA and Special Event Stations.

W9MXQ Photo

In the right picture, I moved the XT-4 so you can see it better. This was right after working a POTA station on 7026.9, running the 300 Hz filter in the TR5 – note the BW AUX rocker switch engaged on the TR5 – the switch to the left of the RIT control switch. The TR5 has one extra filter band position and in this one the filter is the Drake SL-300, 300 Hz unit. Running the RF Gain at about 1:00 and the AF Gain about 12:00 gives nice response with plenty of sensitivity in the radio coupled with very low background noise. “Riding the RF Gain,” as hams used to call it, is not very well known these days. In this series of CW QSO’s, I was running the TR5 barefoot (that is, without the L75 Linear Amplifier) at its full power of about 80-watts. (The TR5 is not as powerful as its big brother, the TR7.)

Just after finishing the above line, I had a fine QSO with a Mississippi ham on SSB. As I was checking some things on the setup (again, as you see on the first page of this article), I heard this fellow calling CQ with a strong signal. We had a nice, ten-minute QSO and gave each other “over S9” reports he complimented me on the sound coming from the TR5. I was running the L75 Linear Amplifier at the time at about 600 watts output. He was running a nice sounding Icom IC-7300 driving an old Heathkit SB-220 Linear Amplifier that his grandfather (now a SK) had built and used. “Nice to keep it in the family,” he said.

The last piece of this station setup is the Timewave DSP-59+. Along with a somewhat more advanced JPS NIR-12, these external Digital Signal Processing (DSP) units are often used in vintage station setups at W9MXQ. Some more recent technology is admittedly a good tool to help the old gear compete better when using it in today’s band conditions. These are audio-based DSP units – and as such are installed in the line between the radio and speaker in the station setup. Without getting too technical, their shortcoming is that they are outside the AGC loop in the receiver which can limit their effectiveness in some situations. This is not a major issue in the kind operating that I do with vintage equipment. Their biggest use for me is the automatically null out carriers, even multiple ones, and provide one of DSP’s finest features – Noise Reduction.

The Timewave DSP-59+ is sitting on top of the Drake L75 Linear Amplifier. See the station setup picture on the first page of this article.

W9MXQ Photo

While connected, the Timewave DSP-59+ was not used in this article. Band conditions did not call for more interference rejection than already provided by the TR5 Transceiver, alone. But, in addition to Noise Reduction (NR), the DSP-50+ can provide its own bandwidth filters at the audio level to reduce close-in QRM. Turning off the AGC in the TR5

removes the problem of AGC in the radio impacting performance of the DSP unit. Unlike many Transceivers in its price class, AGC in the radio could be set for Slow Attack, Medium Attack, Fast Attack, or Off. With AGC set to off, the DSP-59+ becomes a very effective Bandwidth, Low Pass, High Pass, and Noise Reduction unit assisting reception on the Transceiver.

All the above said, I want to add a closing note. Some of my articles showing operating stations are staged to show scenes similar to literature from the original manufacturer. One of my criticisms of manufacturer's literature is that they often show stacked accessories with the radios. This is evidenced in the picture on the first page, and elsewhere duplicating Drake literature and magazine advertising from the time the radios were on the market. Personally, I almost never stack radios. The tendency is for the feet on the stacked radio to damage the cabinet surface of the radio sitting under it. If you must stack a radio, find a way to isolate two with thin paper. Better yet, don't do it!!

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

A special note of thanks to my proofreader, Bob Bailey, W9DYQ. Bob is a lot more than a proofreader as he nearly always adds commentary that makes it into the article.

Credits and Comments:

[1] Herbert G. (Herb) Johnson, W6QKI, and Atlas Radio Company are good subjects for future articles.
[2] Drake of today is a part of Blonder Tongue™ at: https://www.blondertongue.com.
[3] The MN-4C was actually an MN7 that was painted and included a front panel to match the Drake R-4C, T-4XC, and TR-4CW/RIT equipment that was still in production and in stock at dealers. They supported a large established customer base.
[4] While these tuners did not cover, specifically, the WARC Bands, setting them to the closest band possible, made them fairly effective.
[5] A model TR7, initially did not have the optional DR7 Digital Readout included with the radio. Radios with the digital readout were known as a TR7/DR7 when first introduced. The option quickly disappeared and all TR7's soon came out of the factory with digital readout. The analog readout did not appear at all on the TR5 Transceiver.

Vintage Amateur Radio Addendum

de Bill Shadid, W9MXQ

Collins Radio Company

™ Collins Aerospace

Several members of the Ozaukee Radio Club are known to be collectors of Collins Radio Company amateur radio equipment. Primarily they include Pat, W9JI, Michael, AE9MS, Chuck, W9KR, and your Editor, Bill, W9MXQ. These I know are actively involved in collecting, restoring, and operating Collins equipment. There are many others known to me that read this Newsletter but are not ORC members.

In September and October there are two Special Events in celebration of the Collins Radio Company and its place in Amateur Radio History – "Vintage Amateur Radio," if you will. These operations are planned and brought to life via the Collins Amateur Radio Club. Use of Collins equipment is encouraged but not required.

9 September 2023 | Celebrating Arthur Collins' Birthday
Sep 9-Sep 10, 1400Z-0200Z, W0CXX, Cedar Rapids, IA.
Collins Amateur Radio Club.
7.180 MHz 14.263 MHz 21.380 MHz 28.380 MHz.
QSL. Brice Anton-Jensen, 1110 Lyndhurst Dr, Hiawatha, IA 52233.
https://www.w0cxx.us

14 October 2023 | Collins Radio 90th Anniversary
Oct 14, 1400Z-2000Z, W0CXX, Cedar Rapids, IA.
Collins Amateur Radio Club.
7.180 MHz 14.263 MHz 21.380 MHz 28.380 MHz.
QSL. Brice Anton-Jensen, 1110 Lyndhurst Dr, Hiawatha, IA 52233.
https://www.qrz.com/db/W0CXX

Upcoming Events

de: Tom Trethewey, KC9ONY

9/09/2023 – Cedarburg – ORC Annual Regional Fall Swapfest
https://www.ozaukeeradioclub.org/

9/16/2023 – Sixth Annual Wisconsin Parks on the Air (WIPOTA)
https://wipota.com/

9/22/2023 – Milwaukee – HRO Superfest, ARRL Wisconsin State Convention
September 22nd and 23rd, 2023
https://www.hamradio.com/

9/24/2023 – Belvidere, IL – Chicago FM Club Hamfest - 2023 Radio Expo
http://chicagofmclub.org/radioexpo/radioexpo2023.html

10/04/2023 – Nationwide Emergency Alert System Test (EAS)
https://www.fcc.gov/general/eas-test-reporting-system

10/20/2023 – Scouting Jamboree On the Air (JOTA)
October 20-22, 2023 (third full weekend in October)
https://www.arrl.org/jamboree-on-the-air-jota

https://www.scouting.org/international/jota-joti/jota/

11/04/2023 – Milwaukee - MRC91 Friendly Fest
https://www.arrl.org/hamfests/friendly-fest-1

11/05/2023 – Neenah - Fox Cities Amateur Radio Club, Inc (FCARC) Hamfest
https://www.arrl.org/hamfests/fcarc-swapfest-9

https://www.fcarc.club/hamfest.php

Classified Advertising
For Sale & Wanted Items
Ozaukee Radio Club Members

de: Bill Shadid, W9MXQ

For Sale: Heathkit Station Accessories.
Heathkit SB-614 Monitor Scope. $140.00.
Heathkit SB-634 Station Console, $75.00
Heathkit SB-644 Remote VFO (For SB-104/SB-104A Transceivers), $75.00
Heathkit SB-644A Remote VFO (For SB-104/SB-104A Transceivers), $75.00
Heathkit SB-604 Speaker with HP-1144 Power Supply, $135.00
Contact Bill Shadid, W9MXQ at W9MXQ@TWC.com

Do you have an old radio that needs a home?

Classified Adverting for Ozaukee Radio Club Members is a new feature. Only contact advertiser for details. The Newsletter editor has no knowledge of any sale items (unless he is the seller!!). Ozaukee Radio Club is not responsible for any purchases and cannot be involved in any buyer/seller agreements or disagreements – all sales are final other than what you work out between the buyer or seller. Advertisements will be accepted up to the 10th of the month before Newsletter publication.

Advertising from non-ORC Members not accepted at this time.

Upcoming ORC Monthly Meeting Programs

de: Pat Volkmann, W9JI

A Change to the ORC Program Committee

After a number of years of organizing programs for the ORC I have decided that it's time for me to move on and for someone else to take over the role of Program Committee Chair. As an interim measure, Jeananne Bargholz N9VSV, will run the Program Committee, in addition to her role as First Vice President.

If you are interested in helping with the Program Committee or have an idea for a program, contact Jeananne at iamn9vsv@wi.rr.com.

Upcoming ORC Monthly Meeting Programs

- September – Bruce Smith AC4G
  Report on a DXpedition – "Marshall Islands-V73CW"

- October – Janice KA9VVQ and Bruce W9FZ
  "Getting on the Air and Having Fun with Roving!"

- November - Jeananne N9VSV
  Collecting Amateur Radio Themed Stamps

- December - Open

Please consider sharing some of your experiences with the rest of us. If you have an idea and would like some help putting a program together, contact Jeananne at iamn9vsv@wi.rr.com.

Creating a Presentation

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.

Not sure how to approach talking about a subject? Never used PowerPoint? No problem, I would be happy to help you get your talk ready for the club.

Contact Jeananne Bargholz, N9VSV, at iamn9vsv@wi.rr.com to discuss your idea for a program.

Bruce Smith AC4G

Bruce AC4G will talk the ORC at the September meeting to tell us about his ham radio experiences while living on the Marshall Islands.

Bruce has provided this biography, highlighting some of his experiences:

Bruce Smith, AC4G received his ham ticket as a senior in high school and graduated from Tennessee Tech University in 1984 with a BSEE degree in Electrical Engineer and later his MSCE in Computer Engineering in Huntsville, AL. He and his wife moved their family to Taft, TN where they currently reside. He worked in Huntsville, AL as a Flight Test Engineer and Flight Safety Engineer supporting DoD testing of interceptor missiles launched from the Marshall Islands. In 1999, his agency moved him to Kwajalein for a couple of years. While on Kwajalein Island, he operated his ham radio and set country records for the Marshall Islands for several amateur radio contests using the callsign V73CW. His best contest finish was 7th place in the world in the 1999 ARRL 10m Contest as V73CW. He was fortunate to operate from Wake Island for the 2001 ARRL International DX Contest and set a country record from Wake Island as AC4G/KH9.

After 34 years supporting missile testing, he retired to enjoy time with his wife, Suzy and take care of his elderly mother who suffers from dementia. He is currently the QSL manager for V73C, Ken Wells who lived on Kwajalein Island for several years prior to 1998. Bruce continues to chase DX from Taft, TN, and operates in ham radio contests, and is actively increasing his DXCC totals. He has worked all DXCC countries except North Korea (P5). His favorite band is 160m where he has 228 countries confirmed and enjoys experimenting with different receive and transmit antennas. He is currently President of the North Alabama DX Club in Huntsville, AL. He continues to maintain their family farm in Taft, TN which keeps him busy growing corn, soy beans, cotton, and "new towers."

ORC Meeting Agenda

September 13, 2023

1. 7:15 – 7:30 PM
   Check-In and Introductions
2. 7:30 PM Call to Order:
   President Bill Greaves (K9GN)
3. Announcements, Bragging Rights, Show & Tell, Upcoming Events, etc.
4. Bruce Smith, AC4G
   Report on a DXpedition
5. President's Update:
   Bill Greaves (K9GN)
6. 1st VP Report:
   Jeananne Bargholz (N9VSV)
7. Repeater VP Report:
   Tom Trethewey (KC9ONY)
8. Secretary's Report:
   Ken Boston (W9GA)
9. Treasurer's Report:
   Gary Bargholz (N9UUR)
10. Committee Reports
11. OLD BUSINESS
12. NEW BUSINESS
13. Adjournment

What can I say? "If the shoe fits…..!!"
AND, it does not have to be a "guy!!"

This Month's ORC Meeting
Hybrid In-Person/Zoom Meeting
13 September 2023

Bruce Smith AC4G
Report on a DXpedition
"Marshall Islands-V73CW"

7:00 PM – Doors Open

7:15-7:30 PM – Zoom Check-In

7:30 PM – Meeting Begins

NEXT MONTH
Hybrid In-Person/Zoom Meeting
11 October 2023

Program:
Janice KA9VVQ and Bruce W9FZ
"Getting on the Air and Having Fun with Roving!"

ORC 17th Annual Regional Fall Swapfest

Test Equipment, Radios, Antennas, Accessories, Tools, Hobby Stuff & More

Saturday, September 9th, 2023

Firemen's Park (W65 N796) on Washington Avenue in Cedarburg WI 53012

N 43° 18.283' W 087° 59.500'

Setup and general admission from 6am to noon – Door prizes

Refreshments available inside the exhibit hall

$5 admission at the gate – buyers and sellers – 12 & under free

Just park on the grounds and sell your stuff or just browse & buy their stuff

Inside tables $10 as available (5 for $40) – ARRL and any Commercial Vendors are typically inside.

Go to www.ozaukeeradioclub.org or

Facebook.com/orcwi

For more information call

262-377-6945 (h) (W9IPR)

262-844-6331 (c)

Talk-in @ 146.97 PL