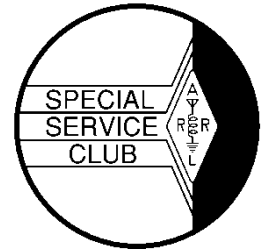




The *ORC* Newsletter

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

Facebook: facebook.com/orcwi

Volume XXXII

September, 2020

Number 9

From the President

de Pat Volkmann, W9JI



It looks like the ORC fundraiser will hit the goal of \$1,250. I had a message from the ORC Treasurer, Gary Bargholz, N9UUR the other day saying that he has commitments to donate that would put us over the goal. Gary is still expecting some checks so we'll put out a summary in the next couple of weeks after everything is in. Thank you to everyone who donated and thank you to the club member who contributed the \$300 in matching funds.

Earlier in the year, when we knew that we weren't going to be holding the Spring Swapfest, a number of people who had purchased tables and tickets did not ask for a refund. Those donations were mentioned here in the May edition of the newsletter but it doesn't hurt to say thank you once again to Ken Boston, W9GA; Pancho Doneis, KA9OFA; Gary Drasch, K9DJT; Todd Fast, N9DRY; Bill Large, KD9HLN; Bill Shadid, W9MXQ; Gary Sutcliffe, W9XT; Tony Van Der Wal, N9UDS; and Robert Widish, N9PSN.

We have cancelled our reservations for the rest of the year at the Grafton Senior Center. Gary, N9UUR, has reserved the meeting room for next year in the hope that we will be meeting again in person at some time. The meeting room at the Senior Center would not begin to hold all of us and maintain our social distance. We could perhaps set up a meeting where we had a mix of in-person and Zoom participation. Please let me know your thoughts on resuming in-person meetings.

Last month I mentioned that my antenna tree had to come down. The tree was a 75-foot ash tree that had been holding up my main HF wire antennas for a number of years. I thought that this would be a temporary situation until I was able to get the replacement antennas in place. I was planning on installing a Gap Titan DX antenna after hearing good reviews on this antenna from several club members. When I went to place an order, I found out that the antenna was available from dealers as a "special order only" with shipping lead time estimates of over a month. I checked several different types of antennas and found the same situation. There are certainly antennas available, just not the ones that I was looking for. I was hoping to avoid winter antenna work but that is looking more likely as the season progresses.

Pat Volkmann, W9JI

THE COMPUTER CORNER

No. 270: BabelMap

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(262) 268-1949 wb9rqr@att.net



Did you ever write something and wish you had a symbol that just was not included in the bunch that came with Microsoft Word or even Libre Office? How about weird ones like these, just to show a few (a random selection by Stan):

└ □ 00 □ □ □ ↗ :: ≥ } □ □ □ = □ □ □

Well, this month's topic is a fun one that may turn out to be a happy find! A program called BabelMap.exe, available here at MajorGeeks:

<https://www.majorgeeks.com/files/details/babelmap.html>

It will make available to you the entire Unicode character set, consisting of over 137,000 characters like the samples I have printed above at 14 point. By the way, they come smaller than those shown here. I simply used Libre Office Writer to expand them somewhat above so they would be easier for you to see. You can expand or contract them as you like with Microsoft Word, as well, allowing you to put one or more right in line with your article text. Here they are at 6 point:

└ □ 00 □ □ □ ↗ :: ≥ } □ □ □ = □ □ □

Which might be close to the size you need for whatever article you are writing.

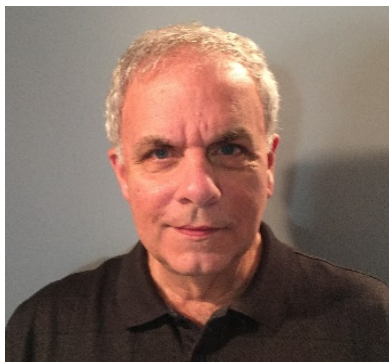
Wow! Over 137,000 characters! How do you find what you want? The program includes several utilities which will help you to home in on what you are looking for. An **Overview** utility lists essential details for all TrueType and OpenType fonts. A **Font Analysis** utility lists all Unicode blocks covered by a particular font, or lists all fonts that cover a particular Unicode block. A **Font Information** utility provides info about the currently selected font. A **Font Glyph Export** utility will export your selections in BMP, GIF, JPG or PNG format if you need to drop one in an illustration. A **Font Coverage** utility lists all fonts that cover a particular character, or all characters in a piece of text, or all the characters you have put in the BabelMap edit buffer. An **Advanced Character Search** utility lists all characters that meet certain criteria. And there are a bunch more utilities that will make your searches easier, including such things as utilities that will show you Han characters with a specified number of strokes, or characters with a particular Mandarin Pinyin pronunciation, or those with a particular Cantonese Jyutping pronunciation! Pretty amazing!

It is an impressive resource and utility, especially considering the .exe program itself occupies only 18.1MB of your hard drive space. It is worthwhile to get this program, if just to have a little fun with it during these boring Covid-19 days.

Happy computing!

Vintage Amateur Radio

de Bill Shadid, W9MXQ



In 1971, we saw the first of what would become one of the most successful of the new Japanese entries into the North American market, Trio-Kenwood. For this article, we will refer to them as Kenwood. At that time, Kenwood did not have any established business entity in the United States or Canada. As they took the first steps to become part of this market, they contracted with large North American radio distributor, Henry Radio, to market and distribute their products. To be sure, the Kenwood radios would be found at places other than Henry Radio's three store fronts in the United States, with headquarters in Butler, MO. Kenwood's first HF radio in the North American market was the TS-511S HF Transceiver¹. But for this article we are going to discuss the second HF radio to be seen here, the TS-900 HF Transceiver, introduced in 1973. The first of the long line of Kenwood "900 Series" Transceivers.



**Left to Right
PS-900 Power Supply, TS-900 Transceiver, VFO-900 Remote VFO**

**Shown with – Left to Right
Kenwood MC-50 Microphone, HS-6 Headphones, Johnson Speed-X Key**

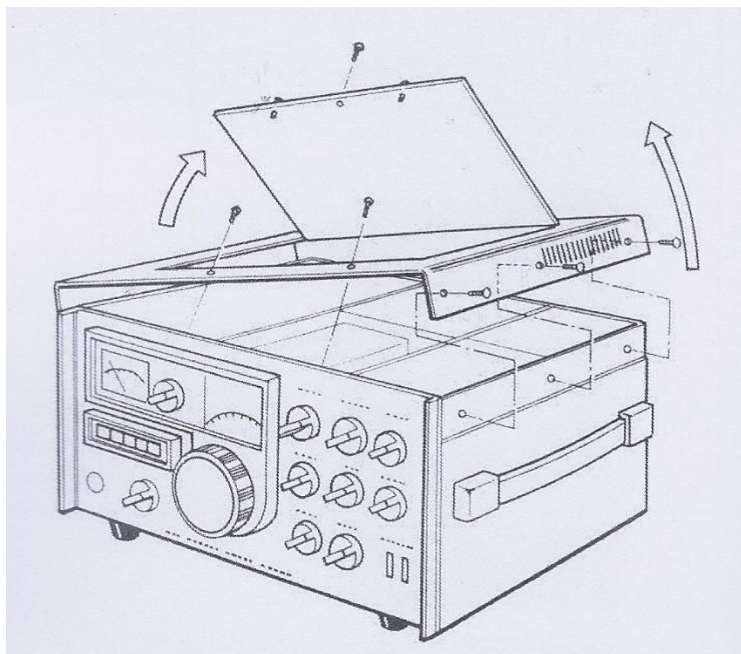
W9MXQ Photo

The 900-Series Kenwood radios would always tend to lead or be equal with features available at the time in ham radio. In the case of the TS-900 that leading-edge technology was incorporated with the use of the VFO-900 Remote VFO – shown above to the right of the TS-900 Transceiver. The VFO-900 could be synchronized with the VFO in the TS-900 – the user did not have to switch back and forth between VFO's while listening to one and the other to make sure they were tuning the same signal.

The VFO synchronizing feature was not offered by any other manufacturer at the time. Certainly not by technology leader, Collins, with its KWM-2 Transceiver and 312B-5 Remote VFO. Also, VFO sync is not a feature of the popular Drake TR-4 Transceiver with its RV-4 Remote VFO or any of the other installations that I know about from the time. Perhaps a close second in this feature was the Hallicrafters SR-400 Transceiver with its HA-20 Remote VFO (called a "DX Adapt-

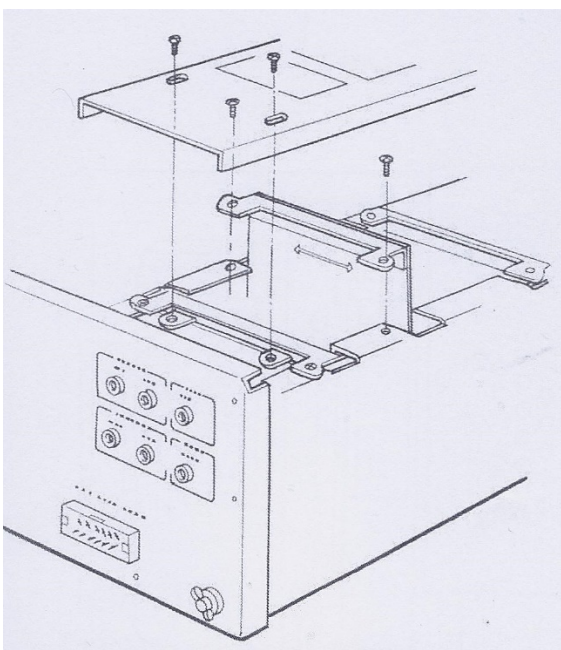
er” by Hallicrafters) that allowed listening to both the radio and the remote VFO signals at the same time.

The TS-900 is a modular design radio with a motherboard connection scheme (see later for details) and plug-in daughter boards. This technology – quite popular in commercial radios to perhaps better support the field repair process – has not survived past this period in most ham radio designs. Knowing that the average ham is not going to have unique daughter board service apparatus, Kenwood designed the TS-900 to be serviceable (for the most part!) without the need for board extenders and/or special tools. To illustrate this technique, note these pictures for daughter board access, removal, and service position:



Here is a picture of the opening of the cabinet. Screws are removed from the top and right side, as shown, to allow the complete cabinet top to open via left side hinges to expose the entire top of the radio.

Kenwood TS-900 Operations Manual.



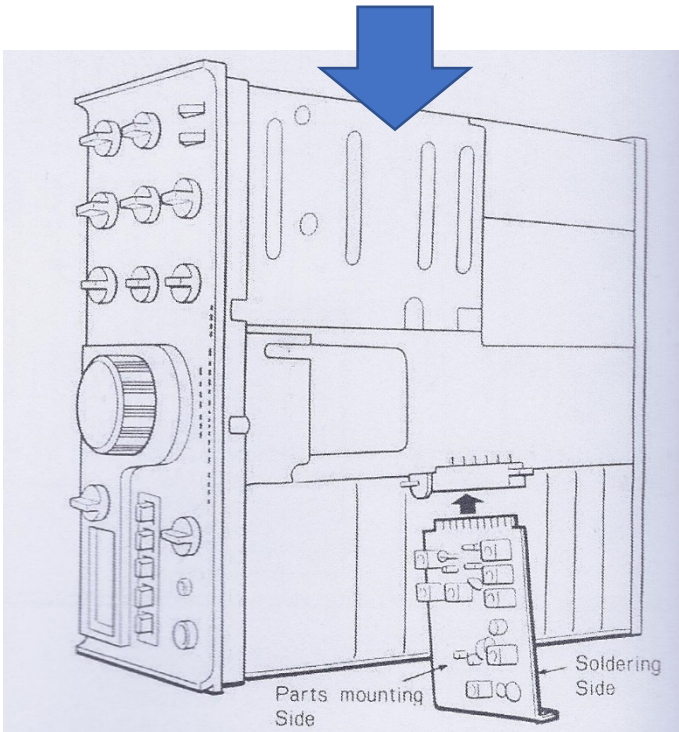
Here is a picture of the removal of top shields (covering the installed daughter boards) for individual board access. Note that each board is held in place with two screws.

As you can see, the above picture and this one shows from the perspective of the front of the radio (above) and from the back of the radio (left).

Kenwood TS-900 Operations Manual.

For the next picture, there is an assumption that the user has by now removed the entire cabinet for access to the bottom of the radio. When removing the entire cabinet, be careful that the hinged top is not damaged – as one removes the radio upward out of the cabinet, the offset

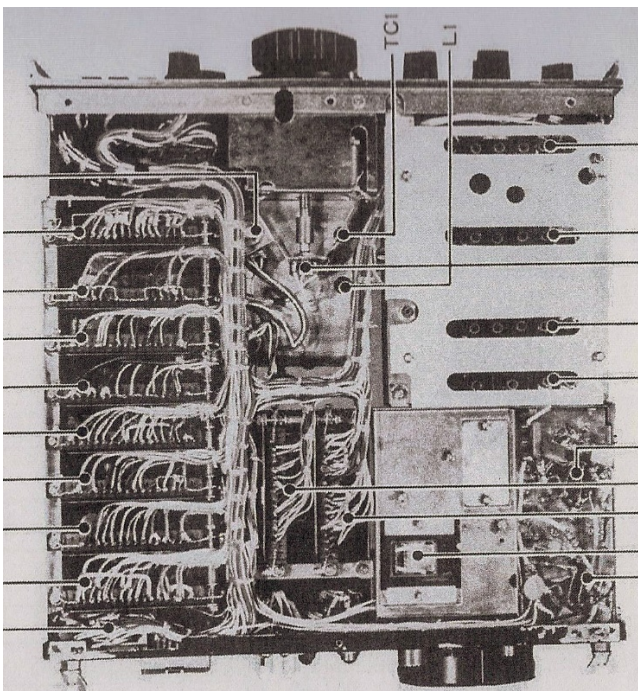
hinged top can cause the empty cabinet to shift in the direction of the hinged side of the now unrestricted enclosure – be careful!



Once the daughter board being serviced is removed, the radio is turned on its side, as shown, and the board's connector is unscrewed from one side and hinged outward, away from the chassis. The removed daughter board is then re-inserted into the connector to allow it to operate while being accessible. The arrow points to the only area of boards that cannot be serviced in the way described herein.

Kenwood TS-900 Operations Manual.

Mentioned above is the unique “motherboard connection scheme.” This is different from the classic printed circuit board motherboard in that it takes the form of a wiring harness instead of a printed board. The construction scheme is shown here in a bottom view of the TS-900 with the outer cabinet completely removed:



This is the TS-900 Bottom View with the front panel at the top of the picture. You can see the wiring harness “motherboard” that allows for the hinging of the PC board sockets for the Daughter Boards to be hinged outward for access while in operation. The boards available for this process are along the left side of this picture, at the bottom half of the center area. However, the i-f related boards at the picture's upper right (with the shield covering them) cannot be serviced in this way.

Kenwood TS-900 Operations Manual.

Innovative as this design was, it did not appear again in Kenwood transceivers of which I am aware. And, while this radio was on the market, its sister offering, the TS-511S¹ used a board to board wired design with wire-wrap connections. However, to be fair, the TS-511S is a different radio all together – not a hybrid design to the extent of the TS-900.

The TS-900 has some interesting operating specifications for the time. In 1973 when this radio was new, there was a power competition going on between the major manufacturers in the market. Check this list . . .

Radio	Final Amplifier Tubes	RF Power Input (Watts)	
		SSB	CW
Collins KWM-2	6146A (2x)	170	160
Drake TR-4	6JB6 (3x)	300	260
Hallicrafters SR-400A	6KD6 (2x)	550	350
Heathkit SB-102	6146B (2x)	180	170
HyGain Galaxy GT-550	6LB6 (2x)	550	360
Kenwood TS-511S	6LQ6/6JE6 ⁴ (2x)	500	300
Kenwood TS-900	6LQ6/6JE6 ⁴ (2x)	300	200
National NCX-500	6LQ6/6JE6 (2x)	500	390
Swan 500cx	6LQ6/6JE6 (2x)	550	360
Yaesu FT-101E/EE/EX	6JS6C (2x)	260	180

Reference individual Operation Manuals for the radios shown.

Some points to note was a push toward higher power in several the above contenders. But remember that RF Power Input is not the major consideration in purchasing a radio. Receiver performance is, however. Reading posted information³ from the time is pretty much the same for every one of them – all generic such as “better than 1uV sensitivity” and similarly benign statements of selectivity without comments about noise rejection, real world filter performance, etc. For the purposes of this article, however, I can bring personal performance comparisons for all the above, except for the HyGain Galaxy GT-550. The best receiver performers in the above list are the Collins KWM-2, Hallicrafters SR-400A, and the Kenwood TS-900. The others, however, are capable performers that many of my friends and I use and enjoy. The TS-511S is the leader of that second tier. Obviously, such comments are personal and not quantifiable in universal terms.

In a conversation I had with Mark Olson, KE9PQ, I noted his comment that the TS-900 had a different model number outside the USA (and perhaps Canada as well). While Mark did not have details, his comment have some basis in terms of the Kenwood TS-511S in this market that is known as the TS-515S outside the United States (and perhaps Canada) but is actually the same radio except for model markings. I was able to find the following list of models – with only the TS-900 being sold in North America (to my knowledge) in any significant volume:

- TS-900 – Finals are a pair of 6LQ6/6JE6 vacuum tubes.
 - North American Market Version.
- TS-900S – Final is a single 4X150 vacuum tube.
 - Trio Branded so not made for North America.
- TS-900X – Final is a single 6146A/B vacuum tube. (See picture, below.)
 - Japanese home market radio for entry level licensees (or QRP use).
- TS-900D – Finals are a pair of 6146A/B vacuum tubes.
 - Unknown market location focus. But did exist in the USA.

The focus of this article, the TS-900, is in my collection. The TS-900D can be confirmed because I temporarily have one that is on loan for writing this article. I have seen numerous pictures of the TS-900X. The lower power versions of Trio-Kenwood transmitters and transceivers – and those of all Japanese manufacturers – were well known in the Japanese market. The TS-

900S has been referenced in other places but the use of a 4X150 final amplifier would require an air systems socket and cooling system, such as seen in a linear amplifier. I question its viability in the market for a HF transceiver.

In our North American market, the TS-900 had an extruded aluminum, vertically brushed, clear anodized aluminum front panel – with black silk-screened lettering. Perhaps late versions, but certainly some versions, had a different color. These alternate color versions were also extruded aluminum and vertically brushed but were bronze anodized with white silk-screened lettering. Here is an example:



Kenwood Photo

Left to Right
PS-900 Power Supply and TS-900X Transceiver
(Note “Trio⁴” branding – these were not for the USA Market)

1
There was a bronze colored VFO-900 – but a picture of one was not found. Note the cooling opening in the right rear of the top cover. This was not present in the TS-900 version. Likely the single 6146A/B final amplifier was cooled differently in the TS-900X than the TS-900. The TS-900 and TS-900D, for which I have experience, were cooled by drawing air up from the bottom of the radio and exiting out the back.

For background, here is what the long history of the Kenwood 900 Series HF Transceivers looks like today:

- TS-900 Transceiver – 150 Watts / 100 Watts Nominal Output – SSB/CW
 - The first 900 series.
 - Hybrid Design – solid state except for 6GK6 driver and 6LQ6 final amplifiers.
 - Introduced in 1973 – 80-10 Meters - WARC Bands not included.
- TS-930S Transceiver¹ – 100 Watts Nominal Output – SSB/CW
 - All Solid State – including Final Amplifier.
 - Internal AC Power Supply becomes a 900 series feature.
 - Introduced in 1982 – 160-10 Meters – First model with WARC Bands.
 - Designated as TS-930S/AT with Internal Automatic Antenna Tuner.
- TS-940S Transceiver¹ – 100 Watts Nominal Output – SSB/CW
 - Introduced in 1985 – 160-10 Meters
 - Designated as TS-940S/AT with Internal Automatic Antenna Tuner.
- TS-950S/SD Transceiver – 150 Watts Nominal Output – SSB/CW
 - Automatic Antenna Tuner becomes standard equipment with this model.
 - Introduced in 1991 – 160-10 Meters
 - Designated TS-950S in standard form.
 - Designated TS-950SD with added Audio Transmit and Receive DSP².
 - TS-950S and TS-950SD were the first Kenwood dual receiver transceivers,

- TS-950SDX Transceiver – 150 Watts Nominal Output – SSB/CW
 - Improved ergonomics and audio DSP over TS-950S/SD.
 - Introduced in 1992 – 160-10 Meters
- TS-990S Transceiver – 200 Watts Nominal Output – SSB/CW
 - IF-DSP integrated into the design.
 - Introduced in 2012 – 160-6 Meters
 - This is a current production radio

Beginning with the TS-930S and its all solid-state final amplifier, Kenwood used 24 volts on the final transistors. This higher voltage provided better final amplifier distortion performance. To accommodate this, beginning with the TS-930S, the 900 series radios included an integrated power supply. TS-930 and beyond were not adaptable for 12 VDC operation.

In this time of making radios (1970's), even relatively large equipment like the TS-900 had an option for DC operation from 12 VDC⁵. Here is a picture of the DS-900 that supported 12 VDC operation with the TS-900:



Kenwood DS-900 12VDC Input Power Supply. The large Jones Connector is for connection to the TS-900 Transceiver. See the AC Socket at the upper right-hand corner. In this picture that is shown as 220 VAC – presumably because this picture is for a European version. That outlet would have been 120 VAC in North America – presumably to power the VFO-900 Remote VFO that contained its own internal AC Power Supply (but provided for 12 VDC operation).

Kenwood Photo

The TS-900 Transceiver was a first for Kenwood in a market it later led along with Yaesu. That is, the market for a hybrid transceiver⁶. This hybrid market, started in 1959 by Hallicrafters with the model FPM-200¹ Transceiver, was not populated with other models other than the groundbreaking SBE-33¹, from Sideband Engineers in 1963 and the Hallicrafters FPM-300¹ in 1972. To my knowledge, no other American company offered a hybrid transceiver, or separate receiver and transmitter that could be defined as hybrid. A past article talked about a hybrid attempt at the market with minimal volume Inoue (Icom) IC-700 Receiver and Transmitter and what may have been, the original Drake TR-5 (not to be confused with the production Drake TR5). However, to the point of this article, Kenwood went on to product a successful line of hybrids in the form of the TS-520 series, the TS-820 Series, TS-530S Series, and the TS-830S⁶. Yaesu also followed with the FT-101Z Series, FT-901 Series, FT-902 Series, and the FT-102. Kenwood and Yaesu also make hybrid transceivers marketed by others – such as Henry Radio Tempo Transceivers and Allied Radio.

Those interested in restoring an older hybrid transceiver are wise to remember that they are getting quite old by now. An initial market TS-900 can now be close to 50 years old. Components tied to alignment of these radios have gotten very brittle and can be severely damaged by even minor adjustment of the receiver and/or transmitter i-f coils. These parts are no longer available in a market of rare radios where even a parts-only unit is protected for possible restoration. If you find a similar old radio that you want to restore, contact this writer for further advice and

more information. I may have more pointers that may assist you, depending on what you can or have encountered.

The 900 series Kenwood Transceivers, in general, can be hard to find. Easiest to locate may be the TS-930S and TS-940S models – but exceptionally nice, properly functioning versions of even these are not overly common. Both the TS-930S and TS-940S are heavily supported by third party manufacturers covering several age-related maladies in these aging favorites⁸. The TS-900 is quite rare and can command a high price. When locating a TS-900, be sure to get one with its matching PS-900 AC Power Supply/Speaker. The power supply alone is almost impossible to find. Fortunately, it generally is sold with the transceiver. The VFO-900 is extremely rare. I have only recently found a complete set as you see on page one of this article. So, if you like these radios and see one – grab it!! You may not see another.

I appreciate that you read my articles. Special thanks go to Bob, W9DYQ, for his proof reading. Also, for this article, I owe a debt of gratitude to Mark Olson, KE9PQ, Nationwide Radio⁹, for his assistance with this TS-900 HF Transceiver. Remember that I am open to questions and comments at my email address, W9MXQ@TWC.com.

Notes:

¹ Subject for a future article.

² The DSP unit in the TS-950SD could be added to a TS-950S by the user. The TS-950SD as delivered from the factory, however, had some unique cabinet marking.

³ Magazine advertising and manufacturers brochures from the time, applicable operating manuals, etc.

⁴ Kenwood used the 6LQ6/6JE6, the 6MJ6/6LQ6, or the 6ME6 – supposedly based on availability. Also, some to note that some 6LQ6 tubes are designated only as 6LQ6 without the 6JE6 or 6MJ6 designation.

⁵ Collins also offered a 12 VDC power supply, as did Drake, Swan, Hallicrafters, and everyone else. But Collins was unique if offering also a 24 VDC supply for use of the KWM-2 on an airplane.

⁶ Hybrid came to be known in the amateur radio market as a transceiver (or receiver/transmitter separates) where the only tubes were the driver and final amplifier stages in the transmitter.

⁷ The Kenwood TS-830S is widely known as the best of the hybrid radios with operational features that are effective to this day. A close second is also a Kenwood, the TS-530S or the rare but sought-after TS-530SP. The TS-530 series did not have the array of QRM and interference fighting tools of the TS-830S. However, a notch filter added with the TS-530SP did help in that respect a bit.

⁸ Reference <https://k6iok.com/> for details of the TS-930S and TS-940S restoration power supplies, LED lighting, and battery backup replacements.

⁹ Nationwide Radio <<http://nationwide-radio--amp-amp-amp--eq-sales-llc.mybigcommerce.com/>>.

Project of the Month©

de Gary Drasch, K9DJT

Building an RF Detection Loop



Last I have had an RFI problem for the better part of a year. It has been a loud sharp buzzing, sometimes S7-8, and of course intermittent. Logging the time in which it was occurring proved to be fruitless. There was no pattern. It would pop up at 3:00pm in the afternoon to 3:00-4:00am in the morning and anytime in-between. I first eliminated everything in the house by operating my K3 on a battery and then turning off the main breaker in my home. It was still there. When I started operating on 6m this summer, I noticed that when I would turn the beam to the west the noise became stronger. Using my FT-891 mobile radio in the truck and riding around the

neighborhood proved it was stronger near my home rather than a block away in any direction. I decided I needed a directional antenna.

Scrummaging around the basement workshop, I came upon a piece of ½" OD cooper tubing. I can't even remember what it was from but figured I only saved it because it was cooper. Now I needed something to shape it with, and came across a workshop stool my grandfather built in trade-school. You need to remember, I'm 72 which makes the stool really old. I was able to wrap the tubing around the circumference of the seat which seemed to be just right. Grandpa Buck would have been proud! (The picture was taken after I drill holes and decided to write this article.)



Now I needed some type of mast I could extend out the sunroof of the vehicle. Again, my shop didn't let me down. I found a piece of 7/8" OD thin wall PVC pipe and cut it to 25" in length. At the top end I used a half-round file to make a concave spot to accommodate the tubing. Then I drilled a ¼" hole, all the way through, below and perpendicular to the concave for a cable tie to secure the top of the tubing to the mast.

In order to fasten the feed-point of the tubing to the mast, I drilled ¼" holes at both ends of the tubing, again all the way through, and did some final filing for a tight fit. Tinning the ends with solder made it easy to attach the RG-58A/U cable which also was found in the shop. Having a BNC connector already attached was a plus.



OK, it was now time to solder the coax to the tubing prior to cable-tying it to the mast. Because of the required length of the shield and the center-conductor separated by the mast, I decided to pull the center-conductor out of the braiding. If you haven't seen it done, all that is needed is a sharp tool. Start by putting a sharp bend in the coax at the point where the jacket is removed;



poke around and gently separate the braiding. Then put the tool between the center conductor and the braiding, push through, and slide the center conductor out.

Now I removed about 3/8" of the center foam dielectric, thinned both ends and soldered to the tubing. Mounting the loop to the mast was pretty simple using just two cable-ties. One around the top and the other at the feed point. The only thing left to do was to put my callsign on it. That's so all my lid friends remember who to return it to!



So, did I find my noise? I did! I was able to pinpoint it to what I originally thought was a power transformer on a pole between my neighbors' houses. I was pretty sure that's what it was while the noise was steady anyways. What I was lacking was more attenuation than the 12db my FT-891 was able to provide. What was needed, and still is, is a switchable attenuator box as is used for fox-hunting. If I could have weakened the signal further I would have found the branches intertwined with the wires 6-8' from the transformer causing the noise. Because it was extremely windy the following day, the noise began to pulsate, full noise...no noise...to the rhythm of the wind. Go figure! Wish I would have noticed those branches sooner. Hi HI. WE Energies said they were going to send a tree trimming service out. I'm still waiting for the proof in the pudding.

What I was lacking was more attenuation than the 12db my FT-891 was able to provide. What was needed, and still is, is a switchable attenuator box as is used for fox-hunting. If I could have weakened the signal further I would have found the branches intertwined with the wires 6-8' from the transformer causing the noise. Because it was extremely windy the following day, the noise began to pulsate, full noise...no noise...to the rhythm of the wind. Go figure! Wish I would have noticed those branches sooner. Hi HI. WE Energies said they were going to send a tree trimming service out. I'm still waiting for the proof in the pudding.

If you have a project you've built, please share it with the club. If you dislike writing, send me some pictures, we can talk on the phone, and I'll write it up for you.

Come chase rocks with me on 6m!

73, Gary
K9DJT

Upcoming ORC Monthly Meeting Programs

October – *Open*

November - YU7EF 6M Beam Construction & 6M DXing, Ken Boston W9GA

December - *Open*

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 w9ji@arrl.net to discuss your idea for a program.

Upcoming Events

Wisconsin ARES / RACES Virtual Conference & ARRL Convention

Saturday, Oct. 24, 2020, 9:00 AM to 4:30 PM

<https://wi-aresraces.link/register>

49th Annual WARAC Midwinter Swapfest

January 9, 2021

Racine, WI



DX'ing & Contesting

De Gary Sutcliffe (W9XT)



The days are getting shorter, and the nights are cooler. I always look forward to this time of the year. The hot, humid weather of summer seems to sap my energy. I get most of my antenna projects done in September and October. Okay, sometimes they stretch out into November. Okay, yes, they occasionally carry over into December. You got me. Too often they get postponed until the following year.

Fall is also the time many of us get more active on the air. I always considered the W9DXCC convention in mid-September as kicking off the radio season. Like every other in-person event since

March, W9DXCC 2020 was canceled. I will miss it.

The low HF bands get better with the longer nights and fewer thunderstorms. A friend of mine reports the season is getting off to a good start, and he has been working into Europe in the evening and Australia around sunrise on 160 M. I have been updating my low band receive antennas. I need a whole new switching control system to make this work. Some parts arrived this week, so hopefully, I will have that running soon.

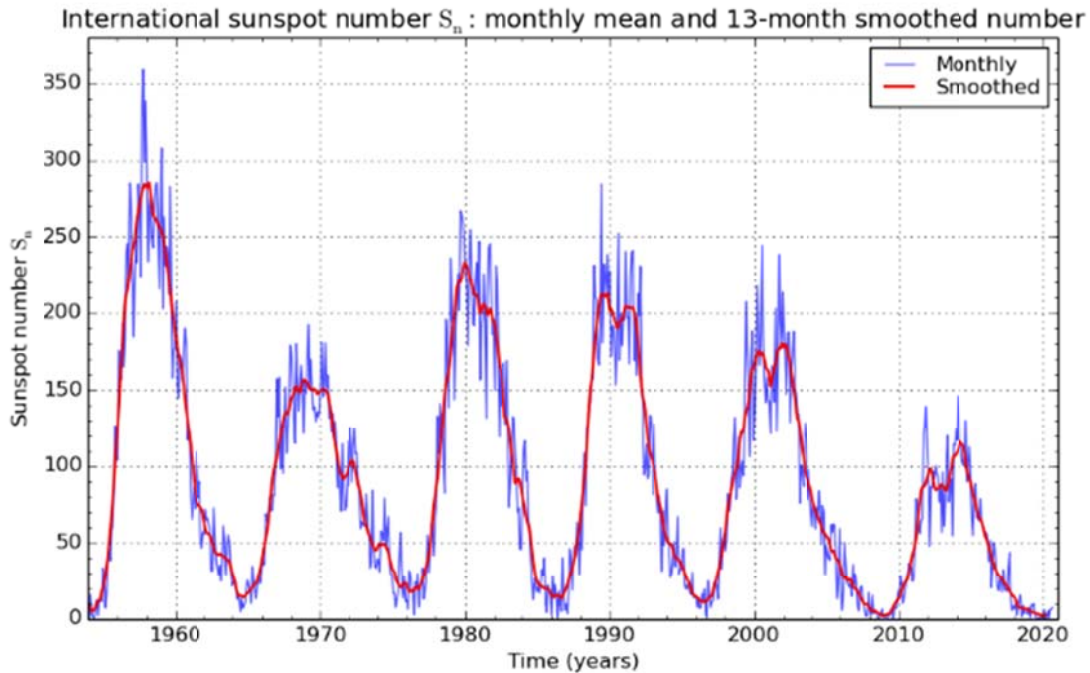
The low bands should be good this winter since we are still near the bottom of the sunspot cycle. There is new hope that we will start to see more sunspots and the higher bands will open up. One report says the minimum was last December. Why did it take so long to come to that conclusion?

The number of sunspots can change rapidly over the course of days and weeks. We can have a lot of variation in the number of spots, day to day, week to week, even month to month. It is a very noisy signal. So, the monthly numbers are averaged over a 13 month period, which means we don't know what a given month's number is until six months after it is over. Then we need a few months of rising numbers to declare a minimum. I hope December was the minimum, but it may have been a false alarm.

So how long before we see good DX openings on 10M? It will probably be a couple more years. My experience is that we will get some openings to Southern Europe when the sunspot number gets around 40-50, and we have a very quiet geomagnetic field. Propagation to Japan and the Far East requires even more solar activity. The good thing is that sunspot numbers rise faster after the minimum than they decline after the peak.

The next question is how high the next peak will be. As you can see on the graph on the next page, peaks vary from cycle to cycle. My go-to expert on propagation is Carl Luetzelschwab, K9LA. He publishes monthly articles on his web site. His August 2020 article covered the predictions for Cycle 25. He lists 27 different published solar activity predictions. Carl points out that we really don't fully understand the process, as proven by so many prediction methods.

http://k9la.us/Aug20_Cycle_25_Predictions.pdf



SILSO graphics (<http://sidc.be/silso>) Royal Observatory of Belgium 2020 September 1

The above graphic from the Royal Observatory of Belgium shows the monthly and smooth sunspot numbers since the 1950s as of September 1, 2020.

The smallest peak prediction is only 50, and the highest is 229. Most of the projections are in the 100-124 range. That would be about like the last one, which was the smallest peak in my lifetime. Hopefully, the high outlier prediction will be the correct one!

DXpeditions continue to be on hold. Many announced ones earlier this year were tentatively re-scheduled for this fall, but most of those have now been canceled or postponed until next year. Occasionally there have been single operator efforts, often linked to business travel or vacations. These are typically not to very rare locations.

There is one of interest from September 15-23 to the Faroe Islands by a couple of German ops. They will be using their home calls with the OY prefix. They will be on 80-10M, SSB, and digital.

There are two large contests of interest in September. The first is the ARRL September VHF Contest. The ARRL hosts VHF contests in June, September, and January. The June one is often the best because of the likelihood of Es propagation on 6M. September holds the promise of enhanced tropospheric ducting, which can produce VHF and UHF contacts out to 800-1000 miles or more. This ducting happens when a high-pressure zone moves in, and warm, dry air covers cooler moist air. This causes a temperature inversion results in VHF and higher frequencies signals to be refracted back to earth.

I recently stumbled on a web site that has tropospheric ducting prediction maps. <https://dxinfocentre.com/tropo.html> There is a box in the upper left that lets you select what part of the world you are interested. I don't have a lot of experience with this site, except in the week or so I've been following it, it seems good at predicting there is no ducting on 2M!

The VHF contest starts at 1800 UTC (1:00 PM local) on September 12 and ends at 0259 on September 14 (10:00 PM Sunday local time). This is for the VHF and UHF bands starting at 6M. You can work a station on CW, phone (SSB or FM), or digital modes. Work a station once per band, regardless of mode. If you are operating with FT8, be sure to change the Advanced

Settings to NA VHF. The exchange is your grid square. Get the full rules at <http://www.arrl.org/september-vhf>.

The other big September contest is the CQWW RTTY contest. It starts at 0000 GMT September 26 (7:00 PM Friday, September 25 local) and runs for 48 hours. Rules are similar to the phone version in October and the CW event in November. You send a signal report and CQ zone. Our zone is 04. This one is different from the CW and phone versions in that you get 1 point for working stations in our own country. Those QSOs are worth zero points in the other mode events but can be worked for multipliers. Also, you can't use 160M for the RTTY version. Note that the CQWW events are the last full weekend of August (FT8), September (RTTY), October (SSB), and CW (November).

The CQWW contests have a lot of different categories, high, low, and QRP, single band or all band, and assisted or unassisted in all combinations. There is a class for everyone. Get full details at <https://www.cqwwrtty.com/>.

The California QSO Party starts on Saturday, October 3, at 1600 UTC (11:00 AM local) and runs to 2200 (5:00 PM local) on Sunday. You can only operate a maximum of 24 hours. California has the biggest state QSO Party, and there is a lot of activity. A lot of contesters get on for this to check out their station before the fall contest season starts.

You will send a serial number and state. You only work CA stations, and they will send a serial number and abbreviation for their county. CW contacts are worth 3 points, and phone contacts are worth 2 points. Multipliers are the CA counties. Don't forget to work mobiles again when they move to a new county. Classes are high, low, and QRP, assisted, and non-assisted. Now for the good part. The top twenty scores outside of CA win a bottle of California wine! There are also something like 55 plaques awarded for a lot of different things like top youth, top YL, most improved, top new contester, etc. You can get more information at <http://www.cqp.org/Rules.html>

That wraps up this month. Let's get those antenna projects finished up before the snow flies!

Ozaukee Radio Club

August 12, 2020 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 7:31 PM, as introductions were recognized when members checked into the meeting, a go-around was not conducted. Pat then refreshed the members on the on-going Club donation program, with the fact that an anonymous member was offering to match every dollar donated with a 50-cent match (up to \$300). This will increase the effective donations, and should help the club reach the \$1250 goal.

Tom W9IPR briefly mentioned that the ARRL has awarded the \$2,000 ORC scholarship.

Stan WB9RQR will have a Linux-based laptop up for direct online auction soon; the first person to respond wins the auction, and must pay directly to the treasurer.

Program:

Peter W0NG gave a presentation on his DIY solar back up power project. He had purchased a couple of 200+ watt panels earlier and designed and installed a backup power source based on the panels. He described a process of obtaining permits, designing the system and selecting components, then installing and getting the system operational.

Committee reports:

Tom KC9ONY provided updates on the repeater system. The 222 system has been experiencing interference, similar to interference affecting the 442.1 system managed by K9QLP. This interference is being investigated. Our 146.97 MHz club net was also mentioned.

Gary N9UUR advised that the statements had been emailed to the club. We had limited expenses, and unfortunately have had 3 silent keys in the club recently. The club is still solvent however.

The minutes from the July meeting, which had been emailed to the membership, were approved by a motion made by Vic WT9Q, seconded by Bill W9MXQ and voted on by the membership (includes one minor correction of a call).

Tom W9IPR elaborated on the award of the scholarship; the recipient; Dakota Nyberg, KD9DIU of River Falls, sent a short thank you letter, which Tom read to the members.

Ben K9UZ will be issuing the newsletter by the end of the week.

OLD Business:

Pat W9JI is hoping that the repeater use survey will be distributed soon.

NEW Business:

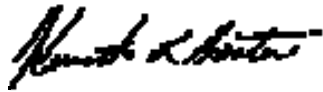
Vic WT9Q noted the 2019 10-meter contest results in the July QST; Gary W9XT was first, and Vic WT9Q was second.

Pat W9JI is looking for programs for the 2020 October and December meetings.

Adjournment:

35 members (unique callsigns) checked into the ZOOM meeting. Contact Ken W9GA to obtain the list. Stan WB9RQR moved to adjourn, Bill W9MXQ seconded the motion, and motion carried. The meeting ended at 8:52 PM.

Respectfully submitted,



Kenneth Boston W9GA
Secretary

Gozinta Definition “Not in Dictionary”

de Nels Harvey, WA9JOB



Many of you have heard me use interesting words in my conversations. No, some of these words aren't in the dictionary. Gozinta, Comzouta and some lesser words like Gozonta, and Gozoffa, are words that dictionary people aren't able to classify, so they do not consider them as real words. I disagree!

In reality, Gozinta and the others are really nouns verbs adverbs and/or adjectives. It represents a place, so it's a noun. It represents an action, so it's a verb. It explains an action, so it's an adjective, or it describes an action, so it's an adverb. Since the words do not change their pronunciation, they're only

one declension.

The primary words are Gozinta, and Comzouta. These words apply to everything! If you are looking at a complicated electronic circuit, you look for the Gozinta, and the Comzouta of the whole circuit, or the individual parts of the circuit. Your microphone is a Gozinta! The Comzouta is an electrical signal. That then becomes a Gozinta, going into an amplifier, and so on.

This thinking can be applied to just about anything. The milk Gozinta the refrigerator. The egg Comzouta the refrigerator, but then it Gozinta the frying pan. The milk Comzouta the refrigerator, but then it Gozonta your cereal. Your shoe Gozonta the step, and Gozoffa the cement. You take the freeway Gozonta, and then you need to find the right Gozoffa. Sometimes one Gozinta a tunnel, and then one Comzouta the tunnel!

Lamps are a good example of Gozonta, and Gozoffa. Flip the switch, and it either Gozonta, or Gozoffa. The switch determines the Gozinta for the lamp and when it Gozinta, the light Comzouta. The gasoline Gozinta your auto's gas tank. The Comzouta comes from your credit card, which has its Gozinta from your bank. The bank's Comzouta depends on your Gozinta.

See how many ways you can apply Gozinta, Comzouta, Gozonta, and Gozoffa to your daily life. This should help while our world is on hold with the virus situation. Hopefully you will agree with me that these words really do belong in the dictionary.

ORC Meeting Agenda

October 14, 2020

1. 7:20 – 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. Program – To Be Determined
5. President's Update – Pat Volkmann (W9JI)
6. 1st VP Report – Ben Evans (K9UZ)
7. 2nd VP Report – Bill Church (KD9DRQ)
8. Repeater VP Report – Tom Trethewey (KC9ONY)
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. Details will be emailed via the ORC remailer usually about an hour and a half 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
October 14, 2020

7:20-7:30 PM – Check-In
7:30 PM – Meeting Begins