



Cleveland Chapter One **NEWSLETTER** Established 1951

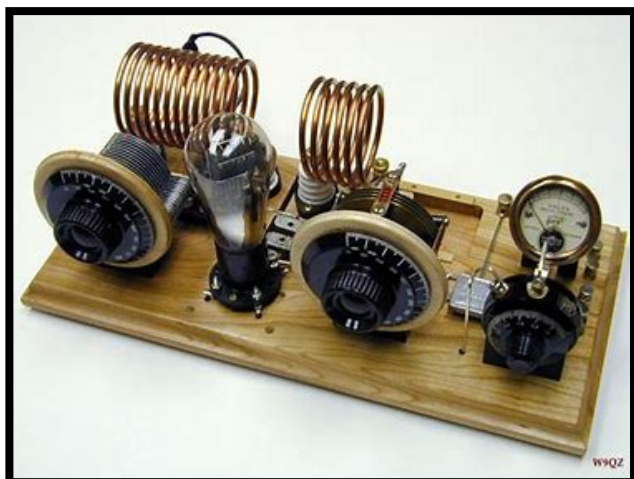
Fall Quarter 2018

W8LYD 146.850 PL 110.9

<http://qcwa-cleveland-1.org>

You're Invited to Our Fall Luncheon on Saturday October 13th

Annual Awards Plus Show & Tell



Chapter 1 will continue its tradition of recognizing those members and friends who have made significant contributions to our chapter and our great hobby. Recipients of QCWA Anniversary and Century Club Awards will also be honored.

In addition, we are inviting all of you to bring any homebrew projects or other ham related items to share with the group.

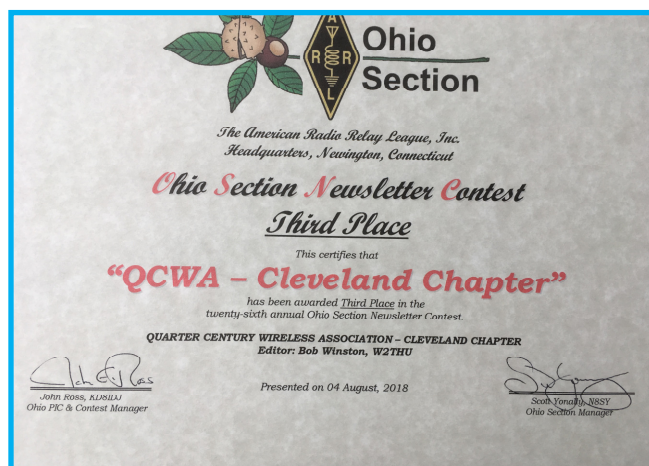
Join us starting at 11:30 A.M. at **The Play Arcade and Kitchen, 5900 Mayfield Road in Mayfield Heights**. We plan to meet in the ground floor theater. The back door is closest. Eat off the lunch menu for about \$10.00. Door prizes, 50-50 raffle, music, and fellowship awaits!

RSVP on the Wednesday night net or to w2thu@arrrl.net ■

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Our Newsletter Wins 3rd Place in the ARRL Ohio Section Newsletter Contest !



Your editor was very pleased to learn that our Chapter 1 Newsletter was chosen third best in the state of Ohio among amateur radio club newsletters. Seasoned journalists and public relations professionals rated about 75 entries on style, content, service to membership and clarity of presentation.

Future Luncheon Dates

*January 12, 2019, April 13, 2019
July 13, 2019, October 12, 2019*



Cleveland Chapter One Newsletter

Editor: Robert M. Winston, W2THU

Past editors: George Mistic, KE8RN; "Dee" Logan, W1HEO; Bernie Hinrichsen, W2NTB (SK); Joe Zelle, W8FAZ (SK); Joe Tomazic, WT8P (SK).

Distribution: Fred Freer, W8FSF

Roster changes: Notify Secretary/Treasurer Jim Arcaro, WD8PFK <jgarcaro@juno.com>

Meetings: Second Saturday of January, April, July, and October at the *Play Arcade and Kitchen*

Dues: \$10.00 per year to Treasurer WD8PFK

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Chapter One Officers

President: Robert M. Winston, W2THU; (216) 924-3314, <w2thu@arrl.net>

Vice President: Fred Freer, W8FSF; (440) 446-8000, <w8fsf@arrl.net>

Secretary/Treasurer: Jim Arcaro, WD8PFK; PO Box 324, Wickliffe, OH 44092; (216) 337-2793 <jgarcaro@juno.com>

Operational Group

Membership reporter: KE9UL

Net controls: N8ZT, KC8UIQ

QCWA Journal reporter: W8FSF

License trustee: N8ZT

Awards chairman: Open

Door Prize chair: N1BCF

Chief radio officer: K8QOT

Chapter musicians: WA8OZC, WB8ADF

Sunshine reporter: Dick Ingraham, WA8TPP, <reingraham@oh.rr.com>

Web administrator: K8ZGW, <dritchie@dr.com>

■
Please notify Secretary/Treasurer Jim Arcaro of any changes in your address, e-mail etc. so your roster information can be kept current. Thanks.



New Members or Friends of Chapter 1:

Jon Anhold, KM8V

Ken Dorsey, Jr., KA8OAD

Don Duman, W8DD (welcome back!)

Welcome! Please check into our Wednesday night net on 146.85 MHz. at 8PM. Newcomers are announced and called on the air.

Sunshine:

Dick Ingraham, WA8TPP continues to recover from infections and cellulitis and we hope he will be able to resume giving sunshine reports on our net.

Ted Alexander, W8IXY, reports that his significant other, Carson Ness, is recovering from non-invasive brain surgery and is in good spirits.

John Esborne, K8OCK's daughter -in-law, Teri, stopped by lunch bunch to let us know that John is doing well, but doesn't venture out anymore.

Joe Nocifora, KE9UL, reported on the Wednesday night net that his sister, Angelina Nocifora, passed away in St. Louis on 1 August. Condolences to Joe and family.

Recent Activities:

Ray Suing, N8EQT recently celebrated his 82nd birthday at Mary Yoder's Restaurant along with several Chapter 1 members.

Craig Kollai, N8ZT and XYL Elizabeth ran the Mighty Niagara Half Marathon on 15 September.

Don Ritchie, K8ZGW, a veteran of the Cuyahoga County Board of Elections, will be working at the Summit County BOE this year.

Bob Winston, W2THU, visited the K3LR super contest station in West Middlesex, PA.

SECRETARY/ TREASURER'S REPORT

By Jim Arcaro, WD8PFK

It was nice to see many of you at the Cleveland Hamfest on Sunday Sept 23, 2018.

Thanks to: Al WA8OZC, Ray N8EQT, Larry K8LPC, and Bob W2THU for helping out at the table. We signed up three new members: KM8V Jon, KA8OAD Ken, and welcome back W8DD Don. Several members also showed up to pay their renewals, or just say Hi.



Thanks also to Don K8ZGW and Steve W8SKG for "moving" the QCWA website to a new provider with minimal disruption. The new provider will give us service at the same, or lower cost. The previous provider was about to raise the rates significantly.

The treasury currently stands at \$6,812.61, after making some deposits, and paying some bills. Last quarter we used a new source to print the mailing labels, Office Depot in Willoughby, and everything went quite well. The year of expiration for your Chapter membership was updated, and should be in the top right corner after your name. If there was a 0 there, it means you were 90 years old, or older, and are a Chapter 1 member for Life.

At the last meeting, we moved to lower the age for "Life" membership in Chapter 1 to 80 years of age, or older. If you are nearing 80, or 80 years or older, please drop me a note and make sure I have your correct birthdate. Things somehow didn't translate, way back in the older version spreadsheet, and some birthdate listings are not correct. We also fixed a bunch of out-of-date, or incorrect, Email addresses. If you are not sure that I have the correct info, please check with me at the October 13 meeting, or please Email me and I will check it. My email is: jgarca-ro@juno.com

If you are behind in your Chapter dues, please send a check for ten dollars, payable to QCWA Chapter 1 to: PO Box 324 Wickliffe, Ohio 44092.

See you at the October 13, 2018 meeting. Thank you all for your cooperation.

MY FIRST FIELD DAY

By Jerry Dusa, WB8ADF

I was a sophomore in High School and I borrowed a Clegg 99er. It was a 6meter crystal controlled 5 Watt A.M. transmitter with a tunable receiver. I met many amateurs in and around Cleveland. The net met on Sundays and was called the Uncle Bob net.



In June of 1972, I was invited to join some of these hams to participate in Field Day, my first. The shack was in a tent camper. We operated on 40 meters. The antenna was a full quarter wave vertical. Power was supplied by a large and noisy generator. The transmitter was a Lysco 600 and the receiver was a National NC 303. We used my Heathkit HD-10 keyer. The RST tone of many stations was not less than a pure tone of 9. We lost power a few times when the generator ran out of fuel. This happened to me in the middle of a contact. We made a total of 106 contacts. See photos of shack and team logging. That's me in glasses. I don't think Don Hollowell got much sleep as he peers out the curtains of the camper.

I am so grateful for all the wonderful friends and opportunities that ham radio has offered me over my 50 years. The FCC was giving the tests at the old Cleveland Post Office. I am glad I stayed with it even after failing the Code test for the General Class ticket. I passed the test the second time. I went on to pass the Advanced Class and eventually passed the Extra Class. If you did not hear from the FCC the first few weeks, it was a good sign that you passed. **I remember our mail man brought me my license.**



Birthdays this Quarter

Happy Birthday to the following Chapter 1 members.

October

WB8QLW	Thomas Sawyer	10/01
KE8ZZ	Edward Zorn	10/19
WA8SAJ	Jeffrey Covelli	10/22
WD8IOU	Dave Autrey	10/26
W8QKO	Donald Sealy	10/26
K8FH	Fred Helwig, Jr.	10/28

November

W8FC	Ford Cole	11/01
K8IUU	John Shott	11/13
K3OTY	John Parsons	11/20
W3SVJ	Nate Firestone	11/22

December

WB8ZEJ	William Kahn	12/03
NI8Z	Gary S. Dewey	12/07
WB8ZGH	Michael Goffos	12/27

Birthdays are announced each week during the chapter's Wednesday night net at 8:00 p.m. on 146.850 pl 110.9. Join us! (Corrections to Jim Arcaro, WD8PFK; jgarcaro@juno.com)

NOTICE

MANY OF YOU HAVE EXPRESSED A DESIRE TO RECEIVE THIS NEWSLETTER VIA EMAIL ONLY. FOR THIS TO HAPPEN, YOU NEED TO SEND AN EMAIL TO WD8PFK, JIM ARCARO (jgarcaro@juno.com)

CHAPTER 1 AT THE 44TH ANNUAL CLEVELAND HAMFEST AND COMPUTER SHOW



Fred Freer, W8FSF explains QCWA to a prospective member while Al Lada, WA8OZC looks on.

Chapter 1 continued its tradition of promoting the Quarter Century Wireless Association and our local Cleveland chapter at the Cuyahoga County Fairgrounds in Berea, while at the same time supporting our local hamfest.

Our table was set up along the back wall between the ARRL and LEARA. Quality indoor vendors and a good sized outdoor flea market on a sunny day made for a very fine hamfest. In addition, there was the usual ARRL forum, followed by two digital forums. Amateur radio exams were given at noon resulting in some new hams and upgrades.

The Cleveland Hamfest is organized by the Hamfest Association of Cleveland (HAC), which consists of a dedicated group of hams who keep it going. **Don Ritchie, K8ZGW** reports that the hamfest will return next year.

President's Perspective

By Bob Winston, W2THU

Cleveland Hamfest-

I want to thank **Fred, W8FSF, Jim, WD8PFK, Al, WA8OZC, Ray, N8EQT and Larry, K8LPC** for helping out at the QCWA table. Many members, friends and the curious visited our booth Sunday morning at the Cuyahoga County Fairgrounds in Berea. Twenty eight hams signed the log in sheet, including three new members (see page 2). Coincidentally, I was at DXEngineering a few days later when one of their ham employees spotted me and came over to say hello. Sure enough, it was one of our new members, **Ken, KA8OAD**.

I really enjoyed this year's version of the Cleveland Hamfest because there were good indoor vendors, selling a lot of new gear, plus a good sized outdoor flea market. The weather was sunny and cool, just right for a Hamfest. As always, meeting so many folks whom we have talked to on the air, or whom we only see annually at this event, was a great pleasure. Kudos to the Hamfest Association of Cleveland (HAC) for all of their hard work.

My trip to K3LR Super Contest Station-

For the past 30 years I have been driving past **Tim Duffy's** antenna farm on I-80 just east of the Ohio-Pennsylvania border. Any amateur radio operator would immediately recognize it as ham related with multiple really tall towers, all stacked with beams. Some time ago I met **K3LR** and I learned that these fantastic arrays were designed and built by Tim and his colleagues.

When I found out that Tim gives tours of his property, I made up my mind to visit. I joined the PCARS tour on 15 September of this year. Everything I saw must be described in superlatives. I remember Tim saying that his 40 meter tower configuration is the largest in the world. It has 3 stacked 40 meter full size beams, at 262 feet, 193 feet and 118 feet!

Due to an unfortunate accident involving a vehicle running into a guy wire, we were able to see some yagi antennas from another tower sitting on the ground. Can you imagine 30 and 40 foot booms? How about the 80m and 160m four

square receiving arrays and the 160m band tower!

Of course the shack is spectacular, with two transceivers for each HF contest band, homebrew linears, antenna rotor and phasing controls and computers. The walls are decorated with dozens of contest awards from ARRL and CQ DX contests attesting to the ability of Tim's super station to win first place time and again. Thanks to K3LR for the opportunity to visit his topnotch contest station and antenna farm. For more information visit www.k3lr.com.



Partial view of the antenna farm at K3LR super contest station in West Middlesex, PA

Upcoming Luncheon-

As our annual Awards Luncheon approaches, please be reminded that you are not eligible to receive the QCWA Anniversary Awards or the coveted Century Award if you have not maintained your QCWA membership. If you are not sure of your membership status with our parent organization visit www.qcwa.org or ask me to check for you (w2thu@arrl.net).

This year we are adding a show and tell component to our luncheon. Bring anything you have built or any ham radio related widget that you feel the members would like to see up front and close.

Jeannie and I look forward to seeing you at *The Play Arcade & Restaurant*.

73, Bob W2THU

The Johnson Invader and Invader 2000 SSB/CW Transmitters

By George Misic, KE8RN



In the 1960s E. F. Johnson Company updated their SSB/CW transmitter offering from their Pacemaker and the adapters they made for AM/CW transmitters with their elegant Invader and Invader 2000. The base Invader was a self-contained transmitter running about 200 watts PEP with an internal power supply and the Invader 2000 ran 2000 watts PEP with an internal linear amplifier and a separate power supply. The Invaders had a beautiful front panel with a great machined aluminum window for the dial. Like most transmitters of the era, except the Collins S-Line and the others who copied their idea, the Invaders do not transceive with any receiver. The transmitters also did not have a built-in antenna relay to switch the antenna system from a receiver to the Invader transmitters. Since the Invader cost \$619.00 and the Invader 2000 was \$1249.00, perhaps they could have included a relay. Actually, my Collins 32V-3 also does not include the relay; the Collins S-Line, the Drake 4-Line and the Heathkit SB-Line all included the antenna relay in their transmitters. Perhaps not a big issue, but a nice touch.

The Invader 2000 contained the base Invader running 200 watts PEP and a 2000 watt linear amplifier unit that fit in place of the AC power supply. The AC power supply for the 200 watt PEP Invader went into the large [and HEAVY!] power supply for the 2000 watt PEP linear amplifier. When the Invader 2000 was set up to operate from 240 VAC, the neutral conductor was directly connected to the chassis. If the transmitter was wired for 120 VAC, one side of the AC line was directly connected to the chassis ground and the metallic chassis and cabinet! I can't imagine that E. F. Johnson designed the unit this way; it must NOT have UL approval. There are no such issues with the base Invader, only the Invader 2000 has these issues. It is probable that few Invader 2000s were wired up for 120 VAC operation, although the grounding of the neutral is a major NO-NO; this is what the commonly used Ground Fault Interrupted outlets test for.

The Invaders generate the SSB and CW signals at 9.0 MHz and use a conventional crystal lattice filter to remove the undesired sideband. Two carrier oscillators are used, one at 8998.5 MHz and one at 9001.5 MHz to allow either sideband to be selected. The VFO covers 4.9 to 5.5 MHz; mixing this with the 9.0 MHz IF generates 75/80 and 20 meters directly. For 40, 15, and 10 meters, a crystal is added to the VFO to generate the band frequencies. Common 7 and 9 pin miniature tubes were used in the low-level stages of the Invaders. The 12BY7 driver tube always operates as a straight through amplifier stage. The lower power Invader uses a pair of 6146 tubes in parallel in the final amplifier stage.

The Invader 2000 has an output from the 6146 tubes to allow the unit to be used running 200 watts PEP if the high power is not needed; it is a different output than the 2000 watt output. To drive the

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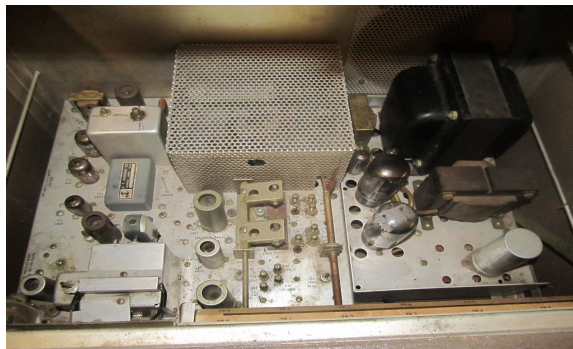
(Continued from page 6)

The Johnson Invaders

internal linear amplifier, the step loading control switch is turned all the way clockwise so the word **AMP** appears in the small front panel window by the control; this switches the 6146s to drive the pair of PL-175 tetrode tubes in the final linear amplifier stage rather than the rear panel output jack. The pair of PL-175 tetrode tubes drive a second output on the rear of the Invader 2000. Neither output has an internal antenna relay; there is also no switch or relay to go between the two outputs; this is quite inconvenient on a transmitter costing over \$1200.00!

The Invaders do not have any outputs that would allow the transmitters to transceive with any receiver; this became a major issue when the Collins, Drake, Heathkit, and two families of Hallicrafters radios plus some Japanese radios offered the great convenience of transceiving with their families of receivers and transmitters. I do not believe in the history of ham radio gear, any builder of a transmitter or receiver advertised the ability to transceive with a radio from a different manufacturer. Johnson did not build any receivers, so the Invaders had nothing to transceive with.

The Johnson Invader without the high power linear amplifier could be field upgraded to the Invader 2000 version. Johnson sold a kit of assemblies to do this. The customer removed the AC power supply module from the Invader and installed it inside of the separate AC power supply unit that goes with the Invader 2000. The front panel is changed to accommodate the controls from the RF power amplifier module which is installed in the space made by the removal of the AC power supply unit. A bunch of other small changes must be made to the Invader to upgrade it to an Invader 2000 such as changing the dial on the switch that is the loading control on the pair of 6146 tubes in the 200 watt PEP final that is the driver in the Invader 2000. All the work to be done is detailed in the instructions that come with the upgrade kit. I have no idea how many Invaders were upgraded to an Invader 2000 and how many of the Invader 2000s in existence were originally sold as Invader 2000s by E. F. Johnson.



Top chassis view of the Johnson Invader

The Johnson Invader and Invader 2000 are beautiful and excellent performing transmitters; I am sure their popularity was very much limited by the great expense of either version and the fact they do not transceive with any receiver.

OUR SUMMER LUNCHEON



Thanks to **Jim Baird, KB8ZA** for a fine presentation on the effects of the sale of the 600 MHz band on the local TV market.

FRIDAY LUNCH BUNCH

Every Friday around 11 AM, a group of hams meet at the Manhattan Deli, located on Ridge Road, just west of SOM Center Road in Willoughby Hills. This is not a QCWA event. All hams, and even non hams, are welcome. The food is very good