



# FOND DU LAC AMATEUR RADIO CLUB

## — FDL 73 —



VOLUME 20 ISSUE 10    [www.fdlhams.com](http://www.fdlhams.com) October, 2019

Join Us On Sunday Evenings For Our Weekly Net — 1930 hrs. 145.430 MHz — Tone 97.4 Hz

### Club Officers

President: Buddy Larson KC9UVJ  
Vice-President: Tom Karmann KC9VZY  
Secretary: Lloyd Vandervort N9RPU  
Treasurer: Doug Schultz N9EZF  
Sgt-at-Arms: Paul Bleuel KC9NAA

Board Member: Ron Keller KC9YVL  
Board Member: Dick Finn KC9ZVW  
Board Member: Larry Mielke KC9RUE

### Committee Chairs

Brat Fry: Doug Schultz N9EZF  
Contesting/  
Education/  
Scholarship: Jack Heil KG9IN  
Field Day: Jack Heil KG9IN  
Fund Raising: Open  
Net Manager: Doug Schultz N9EZF  
Newsletter: Dick Finn KC9ZVW  
Public Service: Ed Beltz N9PJQ  
Publicity/Program: Joe Scheibinger K9VY  
Repeater: Lloyd Vandervort N9RPU  
Testing: Doug Schultz N9EZF  
Truck: Brad Freund KC9QYP  
TVI: Lloyd Vandervort N9RPU  
Web Site: Tim Braun W9AAV

Each committee has several members. If you are interested in serving on a committee, please contact the chairperson and volunteer your services.

### Mailing Address

Fond du Lac Amateur Radio Club, Inc.  
PO Box 53  
Fond du Lac, WI 54936-0053  
E-mail: [fdlhams@fdlhams.org](mailto:fdlhams@fdlhams.org)

**Newsletter  
Submissions:**  
Please email to  
[rfinn5@hotmail.com](mailto:rfinn5@hotmail.com)

### Upcoming Events

Joe Scheibinger reports that our scheduled entertainment for next meeting has had to cancel out. Therefore, the October meeting will be limited to business topics.

It looks like we are starting to wind down for the year with only a few notable things on the calendar.

Firstly, we have the third testing session of the year scheduled for October 12th. While you do not have a lot of time to prep for a test to upgrade your ticket, You do still have plenty of time before our Dec. 14th testing session. See the calendar at the back side of the newsletter for particulars.



The November meeting is very important as it is our annual officer election. You should give some thought as to who you would like to see in an officer role or if you would like to throw your hat in the ring.

December 7, 2019 is the date for the Fond du Lac Parade of Lights downtown. This annual event is sponsored by KFIZ who relies on us to supply communications during the set up process and for releasing the parade units. There will be more information on this in the next newsletter.



Our annual Christmas Party is tentatively scheduled for Dec.8, 2019. This is always a fun time for all. More details will follow in the November Newsletter.

Here's a great story of an Australian HAM communicating with the Astronauts over the past 20 years:

<https://www.abc.net.au/news/2019-10-06/nasa-considers-amateur-radio-buff-part-of-astronaut-family/11530046>

### Next Meeting

**When:** Oct. 14, 2019 at 7:00 pm

**Where:** Moraine Park Technical College, Room A-112  
235 N National Ave, Fond du Lac, WI 54935

**Program:**



### Vintage Amateur Radio de Bill Shadid, W9MXQ



Here we go into the third and final article on Heathkit Linear Amplifiers. As I believe I mentioned before, there were eleven linear amplifiers that Heathkit offered, or were prototyped in enough volume to have some in the field. Before the nine models we have talked in the past two months, there were two other models. The first, the KL-1 Chippewa, even had a model option to operate in Class C – which is non-linear. The second was the HA-10 Warrior Linear Amplifier – which was as economical as the KL-1 was expensive.

Please see the pictures, below of these two, now classic, Linear Amplifiers . . .



**Heathkit KL-1 Chippewa  
Linear Amplifier**

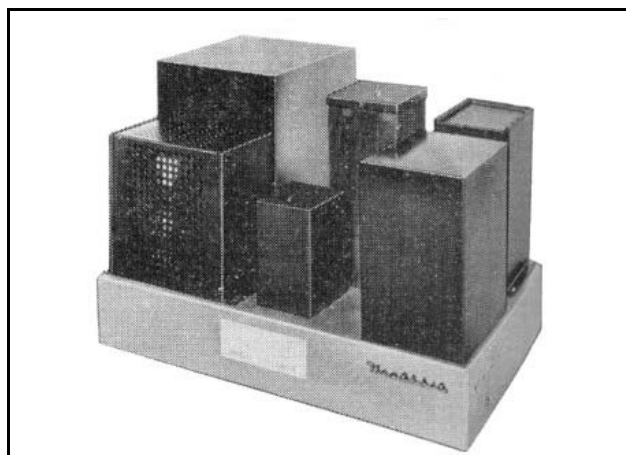
Heathkit Photo



**Heathkit HA-1 Warrior  
Linear Amplifier**

W9MXQ Photo

In addition, it should be noted that the KL-1 Chippewa had a second chassis that included the KS-1 Power Supply for all amplifier functions. The HA-10 Warrior was self-contained.



Heathkit Photo

The Heathkit KS-1 AC Power Supply for the KL-1 Chippewa Linear Amplifier. At 105 pounds, this was a monster but duly supported the power requirements of the amplifier in Class AB1 and Class C operation. The KS-1 Power Supply had a slightly smaller footprint compared to the KL-1 Amplifier and was designed to be placed separately.



### Vintage Amateur Radio de Bill Shadid, W9MXQ



The KL-1 Chippewa Linear Amplifier was introduced to very positive reviews in 1960. It was an incredible piece of hardware at 70 pounds, not including the 105 pound weight of the matching, and required, KS-1 AC Power Supply. The KS-1 was on a similar sized chassis to the KL-1 Amplifier but it lacked the outer cabinet. The components on the chassis of the power supply came out to be about a half-inch taller than the fully enclosed amplifier.

In the late 1950's, Heathkit was coming off many years supporting the ham radio community with the successful DX-series Transmitters. The DX-100<sup>1</sup> and DX-100B<sup>1</sup> transmitters led to the popular TX-1<sup>1</sup> Apache Transmitter. The DX-100 series and the Apache formed the deluxe Heathkit AM/CW line of amateur transmitters of the 1950's. However, Heathkit's marketing planners could see the coming of the popularity of SSB in amateur operation. To stay competitive with customers wanting SSB capability, Heathkit began to develop SSB related products and in 1958 introduced the RX-1<sup>1</sup> Mohawk HF SSB/AM/CW Receiver. The Mohawk was the first of the "Green Machines," in reference to their green on green color scheme. For a short time, the DX-100B Transmitter, along with the Mohawk Receiver formed the basis for Heathkit's premier station. Also in 1958, to keep up with others in the field - or perhaps to lead them - Heathkit introduced the SB-10<sup>1</sup> Single Sideband Adapter that allowed a properly modified DX-100 or DX-100B to run SSB as well as their traditional CW and Plate Modulated AM. Introduction of the much refined TX-1 Apache provided for plug-n-play connection to the SB-10 Adapter. But, the TX-1 Apache was still basically an AM/CW Transmitter.) In 1960, Heathkit moved further in the SSB market with the introduction of the KS-1 Linear Amplifier. Below is a picture of a top of the line, Heathkit SSB/AM/CW station from the early 1960's.



### SB-10 Adapter, TX-1 Apache Transmitter, RX-1 Mohawk Receiver, KL-1 Chippewa Linear Amplifier, and AK-5 Speaker (L to R)

(The KS-1 Power Supply for the Chippewa is mounted elsewhere)  
(Shown also are the much later Heathkit HA-1410 Keyer, an Electro-Voice 911 Microphone, and a Vibroplex Original "Bug" Keyer)  
Heathkit Station at W8SA



### Vintage Amateur Radio de Bill Shadid, W9MXQ



I don't want to get too far ahead of myself here, but this was an interesting time as ham radio had many users of AM as well as a growing number of proponents of SSB. At the time, Barker & Williamson (B&W) offered the B&W 5100<sup>1</sup> and 5100B<sup>1</sup> AM/CW Transmitters that could utilize their 51-SB<sup>1</sup> and 51-SB-B<sup>1</sup> SSB Adapters. And, E. F. Johnson offered their Viking Valiant<sup>1</sup>, Viking Valiant II<sup>1</sup>, and Viking 500<sup>1</sup> AM/CW Transmitters as well as a Viking Single Sideband Adapter<sup>1</sup>. The SB-10, 51-SB, and 51-SB-B Adapters were easily adapted by ham operators of the day to existing transmitters of the time. The user had to develop an insertion point in the signal path and provide necessary modifications to the final amplifier to allow class AB1 operation for SSB use.

Specifications for the KL-1 Chippewa Linear Amplifier were impressive. In my opinion, the only other popular and competitive amplifiers of the time were the Collins 30S-1 (covered in an earlier article) and the E. F. Johnson Viking Thunderbolt<sup>1</sup> amplifiers. However, only the Chippewa offered both Class AB1 and Class C operation. The duty cycle and power of these three amplifier products were not equaled in too many cases at the time.

The RF Drive plus Final Amplifier Input and Output Levels are as shown here:

RF Drive Power Required	
Class AB1 (Tuned Grid)	10 Watts Peak
Class C (Tuned Grid)	40 Watts Peak
Class AB1 (Swamped Grid)	60 Watts Peak
Final Amplifier Power Input	
<a href="#">Class AB1 (SSB Voice Modulation)</a>	2,000 Watts PEP
Class AB1 (SSB Two-Tone Test)	1,300 Watts
Class AB1 (AM Linear)	1,000 Watts
Class C (CW)	1,000 Watts
Final Amplifier Power Output	
Class AB1 (SSB Voice Modulation)	900 Watts PEP
Class AB1 (SSB Two-Tone Test)	550 Watts
Class AB1 (AM Linear)	300 Watts (Carrier)
Class C (CW)	750 Watts
Source: Heathkit KL-1 Operating Manual	





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### Vintage Amateur Radio de Bill Shadid, W9MXQ



The KL-1 Chippewa accomplishes its task with a pair of 4-400 Tetrodes – a popular Tetrode tube of the time for both amateur and broadcast use. The tube provided for 400 watts of plate dissipation (800 total) for more than adequate operation in the duty cycle demanded. Class AB1 operation netted 50-60% efficiency and Class C commonly attained 75% efficiency.

It must be remembered that in the world of RF power in the 1950's there was some “discussion” going on as to legal power levels on SSB. This amplifier would seem to be more than capable of running 1,500 watts output, as we are allowed today – and in fact, the power supply is rated to that end.

The 4-400 final amplifier tubes were cooled in somewhat different fashion from the norm at the time. The cabinet chamber below the tube sockets was pressurized by a squirrel cage blower. That blower forced air through the sockets holding the tubes. Unlike most other manufacturers using these tubes, there was no chimney around the tube, so the air simply blew through the sockets around the tube base. Holes in the outer cabinet allowed for the air to move inside the cabinet and thus move air along the tube envelope. In the end, this system seemed to work well, and the Chippewa is well known as a dependable product. The critical cooling issue with these tubes was to keep the vacuum seal area cool. That seal is located at the very bottom of the envelope – an area in the direct path of the cooling air.

Like many power tubes, the 4-400 Tetrode takes about 60-seconds to warm up to proper operating temperature. This wait was accomplished by an internal timer that would only allow high voltage to become available after a delay of 60-seconds from the time the main power switch was engaged.

The KL-1 Chippewa included several other tubes. In a tube amplifier today, these functions would be handled by solid-state devices. It had a 6DQ6 Clamp Tube plus six Regulator Tubes (four OD3's and two OC3's). The Clamp tube was for proper cut-off at key-up when running in CW. The separate KS-1 Power Supply had two 866A Mercury Vapor Rectifier Tubes.

Cost of the KL-1 Chippewa Linear Amplifier, in 1960 was \$399.95. The necessary KS-1 Power Supply was an additional \$169.95. That totaled \$569.90. A lot of money in 1960. That was a problem and sales were low while the amplifier drew very good reviews from its users. Heathkit saw the error of their marketing target and discontinued the product in the same year it was introduced – 1960. These amplifiers are very rare today and the only one I have recently seen for sale is posted for a total price (KL-1 and KS-1) of \$1,799.99. That is over three times its original selling price. It is the only one I have ever seen for sale. Very few were made. As you will see in later installments, this is not the only time Heathkit over designed a product for their intended market.



### Vintage Amateur Radio de Bill Shadid, W9MXQ



Only a year later, in 1961, Heathkit recovered from the marketing error with an amplifier that is the second one in this article. This was the popular Heathkit HA-10 Warrior Linear Amplifier. The amplifier cabinet was nearly identical in size to the KL-1 Chippewa but was self-contained in that one cabinet. The HA-10 Warrior was every bit as simple as the KL-1 Chippewa was complex. The Warrior was on the market for the rest of the time Heathkit made the likes of the TX-1 Apache Transmitter, the RX-1 Mohawk Receiver, and the soon to arrive HX-10<sup>1</sup> Marauder SSB/AM/CW Transmitter.

The HA-10 Warrior used a much lower cost 811A Triode. The 811A is still in production and installed in new amplifiers, today. Four of them run in a Grounded-Grid, Class AB1 design in the Mohawk. Unlike in 1961, the tubes today are made in either China or Russia and no longer carry such names as RCA, Cetron, or General Electric.

Using the same format as shown with the KL-1 Chippewa Linear Amplifier, here are the operating input and output power levels of the HA-10 Linear Amplifier:

RF Drive Power Required	
Class AB1 (SSB/AM/CW)	100 Watts Peak
Final Amplifier Power Input	
Class AB1 (SSB Voice Modulation)	1,000 Watts PEP
Class AB1 (AM Linear)	400 Watts (Carrier)
Class C (CW)	1,000 Watts
Final Amplifier Power Output	
Class AB1 (SSB Voice Modulation)	500 to 600 Watts PEP
Class AB1 (AM Linear)	200 Watts (Carrier)
Class C (CW)	500 to 600 Watts
Source: Heathkit HA-10 Operating Manual (By Calculation of Values Shown)	

In addition to the 811A Triodes operating in the power amplifier, the HA-10 Warrior had two 866A Mercury Vapor Rectifiers in its power supply. The amplifier is quite heavy at 92 pounds. That is far lighter than KL-1/KS-1 Chippewa combined weight of 175 pounds.



### Vintage Amateur Radio de Bill Shadid, W9MXQ



The 811A tube requires no perceptible warm-up. In fact, it was designed for applications where the filament power was controlled by the PTT button on the microphone. That pretty well defines “short warm-up!”

Several HA-10 Warrior Linear Amplifiers are in the hands of friends of mine - running in regular service in their ham stations. One oddity is that their primary transformer is 120VAC only.

Both the KL-1 and HA-10 work well with today's 50-ohm exciters. It may be necessary in some instances, however, to use some sort of input matching with modern radios.

Are you looking for the big iron Heathkits? Here is a table of when they were made and what models went together in what year. I find it interesting that the HX-10 and HA-10, Marauder and Warrior, respectively, went on for a year without their matching RX-1 Receiver. By then the main line Heathkit SSB/AM/CW Receiver was the excellent SB-300. The SB-300 was covered in a past installment of these articles. As will be covered later, the RX-1 Mohawk was costly to manufacture so Heathkit may have been only too happy to move it aside when the SB-300 became available. In no way is that any indication that the Mohawk was anything but a fine receiver – but it did suffer from fast moving receiver technology of the time.

Year	RX-1 Mohawk Receiver	TX-1 Apache Transmitter	HX-10 Marauder Transmitter	KL-1 Chippewa Amplifier	HA-10 Warrior Amplifier	SB-10 SSB Adapter
1958	X	X				
1959	X	X				X
1960	X	X		X		X
1961	X	X	X		X	X
1962	X	X	X		X	X
1963	X	X	X		X	X
1964	X	X	X		X	X
1965			X		X	

A special thanks go to Bob, W9DYQ, for his proof reading. I appreciate that you read my articles. Remember that I am open to questions and comments at my email address, [W9MXQ@TWC.com](mailto:W9MXQ@TWC.com).

**W9MXQ**

#### Notes and References:

<sup>1</sup> Subjects of a future articles.

Some statistical information comes from the book, by Chuck Penson, WA7ZZE, “Heathkit, A Guide to Amateur Radio



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### MEETING MINUTES

#### FOND DU LAC AMATEUR RADIO CLUB

#### Minutes of FDLARC Monthly Meeting

Monday, September 9, 2019



#### Call to Order

The meeting was called to order at 7:00 pm with president Buddy Larson KC9UVJ presiding.

#### Program: none

All attendees introduced themselves.

#### Approval of Meeting Minutes:

A motion to approve the August minutes was made by Doug Schultz N9EZF and seconded by Cully Kowal KS0D. The motion carried unanimously via a voice vote.

#### Treasurer's report

The Treasurers Report was presented by Doug Schultz N9EZF. A motion to approve the Treasurers Report was made by Jack Heil KG9IN and seconded by Lloyd Vandervort N9RPU. The motion carried unanimously via a voice vote.

A motion was made to pay the bill was made by Tim Braun W9AAV and seconded by Tom Karrmann KC9ZVY. The motion carried unanimously via a voice vote.

#### Old Business:

Race the lake on Aug 25 Went well with Buddy Larson KC9UVJ and Peter Fox KB9WZD at net control.

Bratt Fry : There was poor cleanup after the last fry as leftover soda was discovered at race the lake fortunately this was used up then.

#### New Business:

The ARC will be having a run walk and roll on Sept . 2. See Buddy Larson KC9UVJ if you are able to help.

The Fond du Lac holiday parade will be on December 7th they need lots of help. See Buddy Larson KC9UVJ if you are able to help.

Think about new officers for next year as elections will be in November.

Our third testing session will be on Oct 12<sup>th</sup> at MPTC, Room O108.

#### Adjournment :

A motion was made to adjourn by Jack Heil KG9IN. The motion seconded by Cully Kowal KS0D. The motion carried unanimously via a voice vote and the meeting was adjourned at 7:28

Truck Fund	0.00
Emerg. Services Fund	1,486.59
General Use Fund	5,283.01
Savings Account	25.00
Petty Cash Fund	<u>19.12</u>
Total	6,813.72
Repeater Fund	232.07

was  
pm

#### Entertainment:

Cully Kowal KS0D gave a power point show on the history of railroad communications.





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### NOTICES/ANNOUNCEMENTS

#### FDLARC On YouTube



Many of you may not be aware, but Lloyd Vandervoort N9RPU, our Club Secretary, has been making videos of the presentations at our meetings. There is now a pretty large collection of them on You Tube. Do yourself a favor and take a few minutes to scan the list and play some of them. Enjoy!

FARC - W3AO Field Day Presentation <https://youtu.be/UK1A47pNKyo>

FARC - Bob Heil Ham Radio Presentation [https://youtu.be/t3Ueh9IN5\\_U](https://youtu.be/t3Ueh9IN5_U)

FARC - WWV Presentation [https://youtu.be/w3-DP9DEv\\_U](https://youtu.be/w3-DP9DEv_U)

FARC - Pacific Antenna Talks Kit Building <https://youtu.be/SBReL2YIsn0>

FARC - Scanner Master Presentation <https://youtu.be/dlSIAufGkv8>

FARC - WBAY Field Trip TV Nov 17 2015 <https://youtu.be/sfQvJ1fV6eo>

FARC - WBAY transmitter tour [https://youtu.be/NnZ21O\\_6HvA](https://youtu.be/NnZ21O_6HvA)

FARC - NooElec [https://youtu.be/s\\_pxYkH4xds](https://youtu.be/s_pxYkH4xds)

FARC - Elecraft Radio <https://youtu.be/3Ou1Qpx9Vg8>

FARC - Ed Tobias & Morse Code <https://youtu.be/9uu4PFMrH2U>

FARC - Salvation Army Emergency Communications <https://youtu.be/oxXoZjuTTNE>

FARC - KFIZ Interview <https://youtu.be/UVFMCvRGEJE>

FARC - HAARP Presentation <https://youtu.be/cdeNXLMuyEE>

FARC - The DZKit Ham Radio Kits [https://youtu.be/giZcfQW\\_tpA](https://youtu.be/giZcfQW_tpA)

FARC - The DZKit Ham Radio Kits [https://youtu.be/giZcfQW\\_tpA](https://youtu.be/giZcfQW_tpA)

FARC - The Christmas Island DXpedition with Bill Kendall (4/9/18) <https://youtu.be/XgjYL0vAhlw>

FARC - Restoring Old Antique and Classic Radios (5/17/19) <https://youtu.be/3l352v4gYdw>

FARC - Dave Sumner K1ZZ, Secretary of the IARU (1/14/19) <https://youtu.be/fVzhzhUpYlw>

#### Newsletter Back Issues

When I took over as the newsletter editor I simply continued the volume numbering that existed then. Unfortunately, I don't have copies of those old newsletters. I would appreciate it if you have any newsletters earlier than October, 2014 you would send them to me. Electronic copies are ideal but I would also be pleased to accept hard copy. I'll scan them and return the originals to you.

Many Thanks, Dick Finn KC9ZVW



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### NOTICES/ANNOUNCEMENTS

#### HAM Testing Session

The Fall dates for testing will be rolling around soon (the first is on October 12, 2019). This still gives you a week to prepare to upgrade (or get) your ticket. If you have questions or want to reserve a spot (note: reservations are not required but do help us to be aware of how many may be coming) please contact Doug Schultz at 920-922-3088 or via email at [schultz74@charter.net](mailto:schultz74@charter.net). There's still a little time to crack the books and prepare to upgrade your ticket.



Generally speaking, I will be publishing the newsletter each month (except December (when we do not have a meeting) on the Monday before our monthly meeting. I start assembling it during the preceding two weeks. Obviously I would like to have the material as early as possible but the deadline will have to be on the Wednesday preceding the publish date.

Following are the pertinent dates I'll update this table and print it in each month's newsletter):

	Publish Date	Deadline Date
Nov., 2019	11/4/19	10/30/19
Dec, 2019	No News-letter	
Jan. 2020	1/6/20	12/30/20



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## Free, For Sale or Wanted

### Upcoming HAMFESTS and Conventions From ARRL

## Hamfests

#### 10/19/2019 | 21st Annual Wisconsin ARES & RACES Conference

**Location:** Wisconsin Rapids, WI

**Type:** ARRL Convention

**Sponsor:** WeComm Ltd

**Website:** <http://www.wi-aresraces.org/>

[Learn More](#)



#### 11/02/2019 | Milwaukee Repeater Club Hamfest

**Location:** Milwaukee, WI

**Type:** ARRL Hamfest

**Sponsor:** Milwaukee Repeater Club

**Website:** <http://www.mrc91.org/>

[Learn More](#)



#### 11/03/2019 | FCARC Swapfest

**Location:** Kaukauna, WI

**Type:** ARRL Hamfest

**Sponsor:** Fox Cities Amateur Radio Club, Inc.

**Website:** <http://fcarc.club/hamfest.php>

[Learn More](#)

#### 01/04/2020 | 47th Annual Midwinter Swapfest

**Location:** Waukesha, WI

**Type:** ARRL Hamfest

**Sponsor:** West Allis Radio Amateur Club

**Website:** <http://www.warac.org>

[Learn More](#)





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### 2019 CALENDAR

#### Jan. 14, 2019

FDLARC Monthly Meeting, 7:00 pm, MPTC A-112.  
235 N National Ave, Fond du Lac, WI 54935

#### Feb. 11, 2019

FDLARC Monthly Meeting, 7:00 pm, MPTC A-112.

#### Feb. 16, 2019

License Exams, 9:00 am-Noon, Moraine  
Park Technical College in Room O-104  
Contact: Doug Schultz N9EZF



#### Mar. 9 & 10, 2019

Wisconsin QSO Party



#### Mar. 11, 2019

FDLARC Monthly Meeting, 7:00 pm, MPTC A-112.  
Annual Membership Drive-Contact Joe Scheibinger  
235 N National Ave, Fond du Lac, WI 54935

#### Apr. 8, 2019

FDLARC Monthly Meeting, 7:00 pm, MPTC A-112.  
235 N National Ave, Fond du Lac, WI 54935



#### Apr. 13, 2019

License Exams, 9:00 am-Noon,  
Moraine Park Technical College in Room O-104  
235 N National Ave, Fond du Lac, WI 54935  
Contact: Doug Schultz N9EZF

#### May 13, 2019

FDLARC Monthly Meeting, 7:00 pm, MPTC A-112.  
235 N National Ave, Fond du Lac, WI 54935

#### May 17—19, 2019

Dayton HAMFEST



#### May 31, 2019—June 1, 2019

Brat Fry Country Corners Exxon Station,  
Hwy 67 and Hwy 41 in Lomira. 8:00am to  
5:00pm—Contact: Doug Schultz N9EZF



#### June 10, 2019

FDLARC Monthly Meeting, 7:00 pm, MPTC A-112.  
235 N National Ave, Fond du Lac, WI 54935

#### June 7—9, 2019

Walleye Weekend. Contact Joe Scheibinger K8VY

#### June 22 & 23, 2019

ARRL Field Day, 1800 UTC Saturday and  
running through 2059 UTC Sunday



#### July 8, 2019

FDLARC Monthly Meeting, 7:00 pm, MPTC O-102.

#### July 21, 2019

RMC Triathlon



#### Aug. 12, 2019

FDLARC Monthly Meeting, 7:00 pm, MPTC A-112.  
235 N National Ave, Fond du Lac, WI 54935

#### Aug. 25, 2019

Race the Lake

#### August 23-24, 2019

Brat Fry Country Corners Exxon Station,  
Hwy 67 and Hwy 41 in Lomira. 8:00am to  
5:00pm—Contact: Doug Schultz N9EZF



#### Sept. 9, 2019

FDLARC Monthly Meeting, 7:00 pm, MPTC A-112.  
235 N National Ave, Fond du Lac, WI 54935

#### Sept. 20—22, 2019

Fox Cities Marathon



#### Oct. 14, 2019

FDLARC Monthly Meeting, 7:00 pm, MPTC A-112  
235 N National Ave, Fond du Lac, WI 54935

#### Oct. 12, 2019

License Exams, 9:00 am-Noon, Moraine  
Park Technical College in Room O-108.  
235 N National Ave, Fond du Lac, WI 54935  
Contact: Doug Schultz N9EZF



#### Nov., 11 2019

FDLARC Monthly Meeting, 7:00 pm, MPTC A-112.  
235 N National Ave, Fond du Lac, WI 54935  
Election of 2019 Officers

#### Dec. 7, 2019

FdL Parade of Lights, 4:00, Downtown



#### Dec. 8, 2019

FDLARC Holiday Party: Jim and Linda's  
Contact Buddy Larson KC9UVJ



#### Dec. 14, 2019

License Exams, 9:00 am-Noon, Moraine  
Park Technical College in Room O-104  
235 N National Ave, Fond du Lac, WI 54935  
Contact: Doug Schultz N9EZF







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First	Last	Call Sign
Annika	Kreis	
Barbara	Simon	W9MER
Ben	Haack	KD9LVQ
Blend	Bowen	KC9VXV
Brad	Freund	KC9QYP
Brian	Turkiewicz	KC9LFR
Buddy	Larson	KC9UVJ
Chuck	Mahnke	K9HXI
Cully	Kowal	KS0D
Danny	Vandekolk	KC9IGD
Dave	Witt	WD9W
David	McCumber	N9WQ
David	Zittlow	K9DUI
Dawn	Krause	KD9CAW
Dean	Choate	KC9TGM
Debra	Florian	
Dennis	Paulin	KB9OFM
Derek	Giese	KD9IAN
Dick	Finn	KC9ZVW
Don	Chapman	KC9KZQ
Donald	Bakke	KD0HCW
Donna	Blend	KC9TFN
Dot	Olig	K9FDL
Doug	Murray	KC9ZVT
Doug	Wagner	KC0RNS
Doug	Schultz	N9EZF
Ed	Beltz	N9PJQ
Ed	Sipple	W9VYO
Ed	Steinfeld	KB1ZJK
Fernando	Salazar	KC9ZVX
Gene	Olig	KD9ZP
Gene	Peterson	KD9IAG
Gerry	Radtke	WA9GON
Gregory	Schmude	KD9EHB
Isaac	Lundberg	KD9FPG
Jack	Heil	KG9IN
James	Scovronski	N9WAM
Jeremiah	Alderden	KC9SGL
Jim	Balthazor	K9AIX
Jim	Cole	N9WAP
Joe	Lauber	KC9MDY
Joe	Scheibinger	K9VY
Joyce	Keyes	KC9KIJ
Justin	Buell	KB9YET
Kirk	Everson	KC9FZE
Kyle	Ruesch	AB9AX
Larry	Lamont	KB9POP
Larry	Mielke	KC9RUE
Laura	Yates	
Laurie	Winchell-Beltz	KC9YQS
Lloyd	Vandervort	N9RPU
Lorelei	Kreis	
Louis	Simon	KB9VQM
Marjean	Buck	KC9LFI
Marjorie	Heil	KC9BEN
Mark	Forss	WD9CYM
Mathew	Yates	KD9CSD
Matt	Nett	KD9BBN
Matthew	Zimmerman *	KD9KTY
Michelle	Lawrence	N9RQL
Mike	Keyes	KE7ES
Mike	Lawrence	N9UA
Nancy	Myers	K9ANA
Neal	Buck	KC9LFN
Paul	Bleuel	KC9NAA

## CLUB ROOSTER



Paul	Tvrdy	N9KLK
Peter	Fox	KB9WZD
Randy	Nelson	KC9MYG
Ray	Grenier	K9KHW
Reinholt	Aschmotat	N8VDH
Richard	Jarzynka	KD9EMX
Rick	Robinson	NI9Z
Ron	Keller	KC9YVL
Scott	Kreis	
Stan	Cram	AI0M
Steve	Smith	W9GPI
Ted	Gustavus	KD9IAH
Ted	Neuburg	W9LUQ
Ted	Willett	W9NHE
Timothy	Braun	W9AAV
Todd	Beay	AC9EX
Tom	Karrmann	KC9VZY
Tom	Murray	N0HOR
Tom	Powell	KC9VXR
Tony	Pass	KC9QYR
Walter	Rueger	KC9WQ
Walter	Drees	KD9JAD

Paul	Tvrdy	N9KLK
Ed	Beltz	N9PJQ
Lloyd	Vandervort	N9RPU
Michelle	Lawrence	N9RQL
Mike	Lawrence	N9UA
James	Scovronski	N9WAM
Jim	Cole	N9WAP
David	McCumber	N9WQ
Rick	Robinson	NI9Z
Timothy	Braun	W9AAV
Steve	Smith	W9GPI
Ted	Neuburg	W9LUQ
Barbara	Simon	W9MER
Ted	Willett	W9NHE
Ed	Sipple	W9VYO
Gerry	Radtke	WA9GON
Mark	Forss	WD9CYM
Dave	Witt	WD9W
Annika	Kreis	
Debra	Florian	
Laura	Yates	
Lorelei	Kreis	
Scott	Kreis	

First	Last	Call Sign
Kyle	Ruesch	AB9AX
Todd	Beay	AC9EX
Stan	Cram	AI0M
Jim	Balthazor	K9AIX
Nancy	Myers	K9ANA
David	Zittlow	K9DUI
Dot	Olig	K9FDL
Chuck	Mahnke	K9HXI
Ray	Grenier	K9KHW
Joe	Scheibinger	K9VY
Ed	Steinfeld	KB1ZJK
Dennis	Paulin	KB9OFM
Larry	Lamont	KB9POP
Louis	Simon	KB9VQM
Peter	Fox	KB9WZD
Justin	Buell	KB9YET
Doug	Wagner	KC0RNS
Marjorie	Heil	KC9BEN
Kirk	Everson	KC9FZE
Danny	Vandekolk	KC9IGD
Joyce	Keyes	KC9KIJ
Don	Chapman	KC9KZQ
Marjean	Buck	KC9LFI
Neal	Buck	KC9LFN
Brian	Turkiewicz	KC9LFR
Joe	Lauber	KC9MDY
Randy	Nelson	KC9MYG
Paul	Bleuel	KC9NAA
Brad	Freund	KC9QYP
Tony	Pass	KC9QYR
Larry	Mielke	KC9RUE
Jeremiah	Alderden	KC9SGL
Donna	Blend	KC9TFN
Dean	Choate	KC9TGM
Buddy	Larson	KC9UVJ
Tom	Powell	KC9VXR
Blend	Bowen	KC9VXV
Tom	Karrmann	KC9VZY
Walter	Rueger	KC9WQ
Laurie	Winchell-Beltz	KC9YQS
Ron	Keller	KC9YVL
Doug	Murray	KC9ZVT
Dick	Finn	KC9ZVW
Fernando	Salazar	KC9ZVX
Donald	Bakke	KD0HCW
Matt	Nett	KD9BBN
Dawn	Krause	KD9CAW
Mathew	Yates	KD9CSD
Gregory	Schmude	KD9EHB
Richard	Jarzynka	KD9EMX
Isaac	Lundberg	KD9FPG
Gene	Peterson	KD9IAG
Ted	Gustavus	KD9IAH
Derek	Giese	KD9IAN
Walter	Drees	KD9JAD
Matthew	Zimmerman *	KD9KTY
Ben	Haack	KD9LVQ
Gene	Olig	KD9ZP
Mike	Keyes	KE7ES
Jack	Heil	KG9IN
Cully	Kowal	KS0D
Tom	Murray	N0HOR
Reinholt	Aschmotat	N8VDH
Doug	Schultz	N9EZF
Paul	Tvrdy	N9KLK

NAME  
SORT

CALL  
SORT