

OFFICERS

- Bruce Brumm KCØZMT
President
- Brad Boeckmann KC9DMQ
Vice-President
- Alisa Payton KNØWME
Secretary
- Bill Claypool NUØQ
Treasurer

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APRIL 2018

DMRAA Hamfest

BOARD

- Mark Globushutz KØMJG
- Ray Harden WØRAY
- Bob Johnson, WØSMS
- Scott Kirstein NØOOD
- Ron Overholser KDØTTO
- Mike Waldron AEØMW

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So where will most Central Iowa Hams be on April 21st? That's easy, they'll all be at the 2018 DMRAA Hamfest. It runs from 8:00 till 1:00 at the Elwell Family Center on the Iowa State Fairgrounds. Come join your ham friends in Des Moines for a great time and many bargains. Admission is still \$7.00. Door prizes a-plenty, ARRL VEC testing, and



lots of tables still available. So what's missing? You are! Get a carload and come and enjoy forums, fun, and of course the frivolity. Please check www.dmraa.com/hamfest for more information.

Door prizes include
TYT MD-9600
Yaesu FT-65E
ARRL Gift Certificates



2018 Field Day June 23rd & 24th
Plan on joining the Des Moines Radio Amateurs Association for a fun packed Field Day. We will be at Yellow Banks County Park near Runnels Iowa again this year. We will also be operating out of the two Polk County ARES trailers, Emcom 1 and Emcom 2. Both are air conditioned and offer protection out of the elements if needed. Of course we will have the portable tower trailers with all the appropriate antennas, rotors and

coax needed to have a productive event. This event is open to all amateur radio operators. This is especially true for the newer hams. A good time to "get your feet wet"! Of course there will be food and drink provided by the club.. Set up is Saturday morning at 9:00AM with the operations beginning at 1:00PM. Come and enjoy all or part of the festivities.



**Have you paid
your 2018 dues?
Thank You!**



Come enjoy the fellowship

DMRAA
meetings are the
4th Tuesday of
the month. Be
sure and mark
your calendars!



Upcoming Meetings

Puerto Rico Response

Juan Trujillo, NØPSF travelled to Puerto Rico with the Red Cross immediately following the massive hurricane Maria. He took many pictures and his story is very timely.

7:00 PM

Recital Hall, 3rd floor
Plymouth Congregational Church
42nd & Ingersoll Des Moines, IA
April, 24th, 2018



May 22nd, 2018

DMRAA Annual Elections

These elections are vital to keep the club functioning and to provide the Amateur Radio community with solid leadership and stewardship. There will also be a Dayton Travelogue by Mike AEØMW.

Please attend this meeting and show your support of the DMRAA ballot.

Plymouth Congregational Church
42nd & Ingersoll Des Moines, IA

The DMRAA meetings provide an excellent opportunity to meet new friends and enjoy fellow hams. Please feel free to invite newly licensed amateurs to attend.

Future Meetings

We're looking for meeting ideas and presenters. Please feel free to make suggestions and offer to help with a presentation.

Contact
Bruce Brumm
KCØZMT
at info@dmraa.com



You can Help?

Are you interested in helping the club? There are many ways you can help -- assisting with an event, taking a few pictures or even writing a piece for this newsletter.

Past Meetings

March meeting well attended and informative

The March DMRAA meeting featured a presentation by Brad Scandrett, KCØMKG from PowerFilms solar in Ames. The presentation described the proprietary manufacturing process to make their signature flexible solar products. He also pointed out they are the largest US solar manufacturing company. A great discussion about batteries and correct charging procedures was given. Our many thanks to Brad and PowerFilms for their support of Polk County ARES and the many door prizes he provided.



If you have any suggestions for future meetings, please contact
President

Bruce Brumm
KCØZMT at info@dmraa.com



Giving back through community service

Scott Kirstein
NØOOD
Polk County ARES EC
515 490-7414 (cell)
n0ood@arrrl.net



Polk County ARES



"Downtime"

As I start this column, I am the Shadow for the RMS Group Lead at the American Lung Association's Fight For Air Climb.

This event uses four downtown buildings (YMCA for registration and closing ceremonies, as well as the Financial Center, the Ruan building, the EMC building, for climbing stairs), there are 1,400+ participants, dozens of volunteers - most of whom have a special connection to the American Lung Association through family or perhaps because they have personally been helped; and half a dozen EMTs from the Des Moines Fire Department. There are also 25 Amateur Radio volunteers.

We are also using a simplex frequency for each building to run a "net" on, and the W0AK 146.940 repeater to

kink everything together in a "Command Net". It is by most measures, a "big event."

Ideally, I will spend the rest of the day working on this "big event" with plenty of time to finish this column. As ARES responders, our job is supposed to be "hurry up and wait." We get busy when people are hurt, when the organization runs out of water cups, (or Gatorade ;) , a change in the weather, or - in the worst case - something catastrophic happens during an event.

Then column writing stops.

Then the training, experience, and situational awareness kick in. Then you find out how important wearing the "funny orange vest" becomes. Then participants, volunteers, organizers, and spectators all look to you for information, direction, and leadership.

Then - as they say - the fecal matter is hitting the oscillating device.

Then we "earn our money."

Then we have reinforced the importance of the Amateur Radio frequencies in the FCC's spectrum allocation process.

Here's the part you were waiting for: consider signing up for one of the ARES events we're doing this year.

And, join me in thanking the folks who do take the time to help with our events.

Scott



New TV mounted in EMCOM 1

Polk County ARES Meetings
Polk County EOC at
1907 Carpenter Avenue
Des Moines, IA



ARES MEETINGS DATES 2018

7:00 PM

Monday, April 9th
Monday, July 9th
Monday October 8th

Polk County Emergency
Operations Center
1907 Carpenter
Des Moines, IA

2018 ARES Events

Drake 1/2 Marathon, Sunday April 22th, 2018
Market to Market, Saturday May 12th, 2018
Dam to Dam Half Marathon, Saturday June 2nd, 2018
ARRL Field Day, June 23rd -24th, 2018
Iowa State Fair Parade, August 8th, 2018
Head of the Des Moines Rowing Regatta
September 29th, 2018
Des Moines Marathon, October 21st, 2018
Living History Farms Fun Race, November 17th, 2018

Sign-up online at DMRAA.com/ARES

2018 DMRAA Calendar



Plymouth Congregational Church
42nd & Ingersoll
Des Moines
7:00PM

Calendar 2017

General Meetings and Events

21 April, 2018 Hamfest
24 April, 2018
22 May, 2018
23-24 June, 2018
ARRL DMRAA Field Day
26 June, 2018
24 July, 2018
28 August, 2018
25 September, 2018
23 October, 2018
20 November, 2018 Chili Feed
& Auction

Board Meeting Date

1 May, 2018
5 June, 2018
7 August, 2018
4 September, 2018
2 October, 2018
6 November, 2018
4 December, 2018
1 January, 2019
5 February, 2019
5 March, 2019
2 April, 2019
7 May, 2019
4 June, 2019



You now have the option
of paying for up to 3
years when renewing
your membership in the
DMRAA.

1 Year = \$20
2 Years = \$40
3 Years = \$60

See Scott Kirstein
NØOOD
for details.
Dues are calendar year

President's Soapbox

I hope everyone had a blessed Easter. I'm sure you're all anxiously awaiting the arrival of Spring. With a forecast of snow in the next couple of days, I'm not so sure it will. There are a couple of ARES events coming up soon and we could use your help. We need you to pop out of your winter hidey-holes and see your shadows! Check out the ARES section of our web page to sign up for events.

I'd like to mention that we've had excellent attendance at our meetings so far this year. We've worked hard to try to provide relevant and engaging content in our meetings. Many thanks to all those involved with the behind the scenes organizational work which goes into these meetings! You can look forward to upcoming topics such as a ham's deployment to Puer-

to Rico after Hurricane Maria, a Dayton Hamfest update, and a potential small kit build. Check out the club web page at dmraa.com, to stay informed of upcoming events.

It's great that we've had some folks step up and volunteer to present meeting content. Even if you only have an idea, please let us know.

April 18th is an auspicious day. Not only is it the date of National Animal Crackers Day, but it is also World Amateur Radio Day. According to the ARRL, the IARU was founded in Paris on 18-April, 1925 with the co-founder of the ARRL, Percy Maxim, as first president. The primary purpose of World Amateur Radio day is "to highlight Amateur Radio and its benefits to countries and communities." We are all representatives of the hobby, and our actions are observed by many in the community. Let's

make sure we highlight the hobby well wherever and whenever we transmit.

The DMRAA Hamfest is coming up quickly on Saturday, 21-April. Please plan on attending. We have a number of vendors scheduled including Radio City, D&L Antenna, and the RF Adapter Guy. There will be license testing, a DMR forum presentation, an Iowa Repeater Council meeting, and lots of fun to be had by all. Please go to dmraa.com/hamfest and check out the particulars. See you there!

Bruce Brumm KCØZMT
DMRAA President



*It takes a
lot of people to make
the world
go round
Some to
hold it up
and a few
others to
give it a
good spin!*

**NØVPR
2018**



*Don't forget
to pay your
2018
DMRAA
Dues*



Have you
checked into a
net lately? →

**ARES Nets serve
several purposes**

- **Operator training**
- **Training of Net
control operators**

Please check in!

Area Nets

AMES

Sunday	147.240+	7:00pm	Story County ARES Net
Wednesday	147.375+ t 114.8	9:00pm	Cyclone Amateur Radio Club

BOONE

Sunday	146.850-	8:00pm	Boone County ARES Net
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CRESTON

Sunday	443.400+ t 151.4	8:30pm	SW Iowa Amateur Radio Assn.
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DES MOINES

Sunday	145.390- t 114.8	7:00 pm	Saylorville Fellowship Net
Sunday	29.670- t 103.5	7:30 pm	Iowa Ten Meter Net
Sunday	146.610- t 114.8	8:00 pm	Central Iowa ARES Net
Sunday	146.940- t 114.8	follows ARES net	Central Iowa Technical Net
Sunday	443.400 t 151.4	8:30 pm	SW Iowa Amateur Radio Assn Net
Monday	146.940- t 114.8	7:00 pm	DMRAA information Net
Wednesday	53.250-	8:30 pm	Iowa 6 Meter Net 1.7mhz-
Thursday	146.940- t 114.8	7:00 pm	Polk County ARES Net

INDIANOLA

Saturday	146.60- t 114.8	7:30am	Warren County ARES Net
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PERRY

Monday	145.190- t 114.8	8:00pm	Dallas County ARES Net
Monday	145.190- t 114.8	follows ARES net	HARC Net

STATEWIDE NETS

Sunday	444.725+	7:30 pm	Iowa DMR User Group Net
Monday—Saturday	3,970	12:30pm & 5:30pm (6:00pm summer)	Iowa 75 Meter Traffic Net
Sunday	3,970	5:30pm (6:00pm summer)	Iowa Traffic and Emergency Net



Amateur Radio Testing Sessions



Des Moines 1:00pm

May 20
July 15
September 16
November 18

Registration starts at 12:30 PM (no admittance after 1pm) Location: Johnstone Supply Classroom (2nd floor) 11000 Justin Drive Urbandale, IA 50322

Contact: Rick Allen NØCFL
(515) 795-2162
n0cfl@arrl.net

Ames

Sat. Apr. 7 — 10:00 AM

Location ISU Campus –
Building and Room TBA

Contact: George Oster,
NP2N
515-233-3535

Boone 9:00am

April 14, 2018
June 9, 2018
August 11, 2018
October 13, 2018
December 8, 2018

Time: 9:00 AM
Location: Conference room
behind the cafeteria at the Boone
County Hospital, 1015 Union St,
Boone, Iowa

Contact: Steve NØNEU
(515) 432-4006

Marshalltown 9:00am

May 5, 2018
August 4, 2018
December 1, 2018

Check-In: 9:30 AM
Exam Starts: 10:00AM
Location: RACOM Corporation
201 West State Street
Marshalltown, IA

Contact:
Brian Krumm, NØMXX
n0mxk@arrl.net
641-752-9658

Time to find a new home for your extra gear?

This Buy, Sell & Trade page may be your answer. This service is offered to DMRAA members.

Contact
info@DMRAA.com

Looking for something?
We'd be happy to help you by listing your want items Here



Time to Eat?

Buy / Sell

ICOM 706 HF/VHF transceiver like new \$450
Comes with new IC-706 MB-62 Mobile Mounting bracket



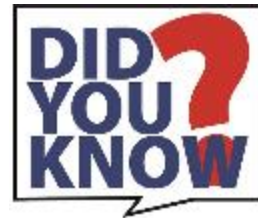
Pyramid Phase III by Tenna 10 Amp Regulated power supply
Model PS-12 13.8 V DC 0 amp with surge protection \$35



Oak Bay Tech Low Pass RF filter LP-11P \$20.



Contact KB0JOU Dick Hinson 515 778 2333 cell
rchwdm@gmail.com for more information



The DMRAA.COM website sees on average 150 unique visitors a week. There are 190 visits and they perform over 650 actions per week.

These visitors spend approximately 4 minutes enjoying the information available for and about the DMRAA.

Check us out at
DMRAA.COM

Are you checking the website?

Timely news and notices are posted on the DMRAA website.
dmraa.com



Hungry and looking to meet local hams? On Fridays at the Buffet City on University (next to Toys R Us) a group of hams meet for lunch. This is an informal meeting and provides an excellent opportunity

to pass information while enjoying a nice selection of Chinese cuisine. The group (around 20) usually arrives around 11:45 and breaks up at about 1:00. All are welcome, including family members.

Caution! Considerable amount of amateur radio topics will be discussed.



Strays



Digital Mobile Radio is really catching on in Iowa. There are over 40 DMR repeaters and the number is growing. We now have the ability to connect with the National Weather Service during severe weather on DMR. There are well over 500 registered DMR users in the State of Iowa and over 85,000 world-wide. Using a readily available \$75 radio you could talk to any of them. Maybe it is time for you to give it a try. With so many folks using DMR, why don't you ask one for a demo?

DMRAA Stainless Steel



We still have Limited Edition 30-ounce DMRAA Stainless Steel Travel Mugs available. These will make great gifts for anyone on your lists, and at \$20.00 each, will support the DMRAA as well. Contact Scott, NØOOD

ARES Reflective Vests

Polk County ARES now has several Class 3 Level 2 Safety Vests available for purchase. These are better quality surveyor type vests with sleeves and several pockets in sizes m thru 3XL. They have the words "RADIO COMMUNICATIONS" on the back.

Cost is \$20.

Contact Tom, NØVPR

n0vpr@arrl.net

Note: You need not be a Polk County ARES or DMRAA member to purchase a vest.



Static Sheet Deadlines

Item submission deadline	Publish Date (Email sent)	Web edition posted
February 1 st	February 15 th	February 20 th
April 1 st	April 15 th	April 20 th
June 1 st	June 15 th	June 20 th
August 1 st	August 15 th	August 20 th
October 1 st	October 15 th	October 20 th
December 1 st	December 15 th	December 20 th

WØAK Board Minutes DMRAA

February Board Meeting Minutes

DMRAA Board Meeting Minutes Tuesday, February 6th, 2018

The meeting was called to order at 7:03pm

In Attendance:

Bruce Brumm – KCØZMT – President
~~Brad Boeckmann – KC9DMQ – VP~~
~~Mark Globuschutz – KØMJG – Board~~
 Ron Overholser – KDØTTO – Board
 Michael Waldron – AEØMW – Board

Bill Claypool – NUØQ – Treasurer
~~Lisa Payton – KNØWME – Secretary~~
 Ray Harden – WØRAY – Board
~~Kevin Sanders – KØKDS – Board~~
 Scott Kirstein – NØOOD – Board
 Bob Johnson – WØSMS – Board

1. Review January minutes: Approved as amended.
2. Treasurer's report \$22,211.97
3. Unfinished business
 - a. PayPal – Still in progress
4. Polk County ARES update
 - a. 2018 events and meeting schedule
 - ~~i. Meeting Jan 8, will be a rundown of dates and events for this year cancelled~~
 - ii. April 8 Fight for Air Climb
 - iii. April 22 Drake half marathon
 - b. TV for the ARES trailer that was approved last meeting has been purchased
 - i. Reimbursed Tom Reis, NOVPR \$390.45; approved max. \$400.00
5. Subcommittee reports:
 - a. Hamfest – April 21, 2018
 - i. Info has been sent to the ARRL and approved,
 - ii. notification needs to be sent to the vendors. Bruce is working on flier
 - iii. Motion to purchase prize, not to exceed \$350 by Bruce, 2nd by Scott, passed.
 - b. Field Day – June 23-24, 2018 – "Always the fourth full weekend in June"
 - i. Confirmed Yellow Banks Shelter Reservation, Scott Kirstein NØOOD.
 - c. Repeaters & Packet
 - i. Waiting to hear from tower company at Alleman
 - ii. Upgraded Broadlawns fusion repeater was installed.

The Des
 Moines Radio
 Amateurs
 Association
 board meets
 monthly in the
 upstairs
 conference
 room at the
 East Euclid
 Hy-Vee
 2540 E Euclid
 Ave
 Des Moines

February Board Meeting Minutes cont.

- 1. Reimbursed Bruce Brumm, KC0ZMT \$567.43 Approved max \$600.00
- iii. Dstar – per Mike Waldron, AE0MW repeater is up and operational
- d. Education
 - i. A general class has been scheduled for February and March at Edgewater.
 - 1. 4 paid students, attending.
 - ii. Approved and reimbursed initial class expenses.
 - 1. Motion to approve AE0MW, second by W0RAY, motion carried.
 - 2. Reimbursed Mark Globuschutz, K0MJG \$55.11 – laser pointer/mouse
 - 3. Reimbursed Dennis Obrien, KA0DOS \$58.37 – whiteboard
 - iii. 1-Day tech class to be held in the spring, date TBD
- e. Programming
 - i. January – Multi mode radios – Ray Harden – W0RAY – was very well received.
 - ii. February – Weather Service Training, has been confirmed with Tom and the church
 - iii. March – PowerFilm Solar
 - iv. April – TBD
 - v. May – Elections and Dayton Travelogue by Mike, AE0MW
- f. Communications & Public Relations – Nothing to report
- g. Membership – Still needs to be updated
- h. Awards – There were no nominations for the Winthrop Mager award
- 6. New Business
 - a. Kevin Sanders had to resign board position due to other commitments.

President, KC0ZMT appointed Bob Johnson, W0SMS to fill term until 2019 election.

Motion to adjourn by KD0TTO. 2nd by AE0MW. Motion carried at 8:08pm.

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2540 E Euclid
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Des Moines**



WØAK Board Minutes DMRAA

DMRAA Board Meeting Minutes Tuesday, March 6th, 2018

The meeting was called to order at 7:04pm

In Attendance:

Bruce Brumm – KCØZMT – President
~~Brad Boeckmann – KC9DMQ – VP~~
~~Mark Globuschutz – KØMJG – Board~~
 Ron Overholser – KDØTTO – Board
 Michael Waldron – AEØMW – Board

Bill Claypool – NUØQ – Treasurer
~~Lisa Payton – KNØWME – Secretary~~
 Ray Harden – WØRAY – Board
 Scott Kirstein – NØOOD – Board
~~Bob Johnson – WØSMS – Board~~

1. Review January minutes: Approved as amended.
2. Treasurer's report \$20,340.66; \$1250.00 paid to Iowa State Fairgrounds, 2018 hamfest
3. Unfinished business
 - a. Paypal – Still in progress, email to be payments@dmraa.com
4. Polk County ARES update
 - a. 2018 events and meeting schedule
 - i. April 8 Fight for Air Climb
 - ii. April 10 Statewide ARES at Waterloo, IA
 - iii. April 22 Drake half marathon
5. Subcommittee reports:
 - a. Hamfest – April 21, 2018
 - i. Discussed fee increases for 2019 based on increased costs; survey other hamfests.
 - ii. Wristband purchase approved, not to exceed \$100.00. NØOOD 1st, AEØMW 2nd, approved
 - iii. No flier for 2018.
 - b. Field Day – June 23-24, 2018 – "Always the fourth full weekend in June"
 - i. Confirmed Yellow Banks Shelter Reservation, Scott Kirstein NØOOD.
 - ii. Nothing to report
 - c. Repeaters & Packet
 - i. Waiting to hear from tower company at Alleman
 - ii. Socializing removal of currently unused, unplugged packet equipment.

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March Board Meeting Minutes cont.

d. Education

- i. 1-Day tech class to be held in the spring, date TBD

e. Programming

- i. January – Multi mode radios – Ray Harden – WØRAY – was very well received.
- ii. February – National Weather Service SkyWarn Spotter Training
- iii. March – PowerFilm Solar
- iv. April – Juan Truillo, NØPSF – Puerto Rico deployment
- v. May – Elections and Dayton Travelogue by Mike, AEØMW
- vi. AEØMW to explore InfraGuard presentation.
- vii. KCØZMT to explore inexpensive kit build, August.

f. Communications & Public Relations – Nothing to report

g. Membership – Still needs to be updated

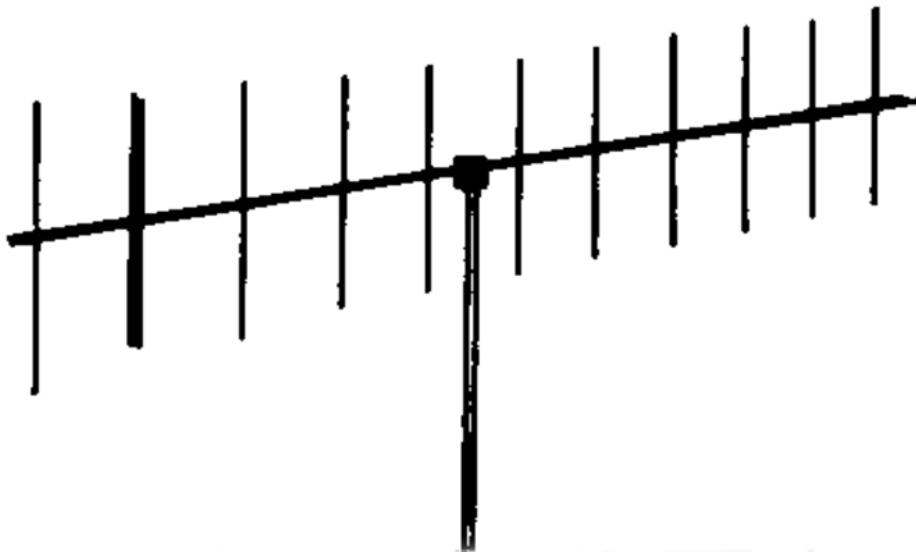
h. Awards – Bob Evans award discussion

6. New Business

DMR multi-mode repeater likely to be installed in Creston; not club related.

Motion to adjourn by KDØTTO. 2nd by AEØMW. Motion carried at 7:45pm.

**The Des Moines
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Des Moines**



DMRAA Frequency Programming Guide

Ch	Name	Frequency	Tone	Location	Use
1	WØAK	146.940-	114.8	Des Moines	Local Repeater DMRAA Local Club Repeater
2	WØAK	146.985-	114.8	Des Moines	Local Repeater DMRAA Local Club Repeater
3	WØAK	145.130-	114.8	Des Moines	Local Repeater DMRAA Local Club Repeater (4*)
4	NØINX	146.610-	114.8	Grimes	Local Repeater Linked to Scraper 444.300, Williams 444.500 (1*)
5	NØINX	443.400+	151.4	Grimes	Local Repeater Linked to several repeaters in SW Iowa (1*)
6	KØDSM	444.100+	151.4	Des Moines	Local Repeater Polk County ARES
7	KØDSM	444.050+	151.4	Des Moines	Local Repeater Polk County ARES
8	WØKWM	146.820-	114.8	Des Moines	Local Repeater
9					
10	NØOOD	443.925+	151.4	Des Moines	Local Repeater
11	KCØMTI	146.700-	114.8	Johnston	Local Repeater
12	KCØMTI	442.800+	151.4	Johnston	Local Repeater
13	WØKWM	444.575+	151.4	Alleman	Local Repeater
14	KDØQED	145.390-	114.8	Saylorville	Local Repeater STAR 1
15	KBØNFF	146.895-	114.8	Saylorville	Local Repeater STAR 2
16	KØSXY	145.310-	114.8	Alleman	Local Repeater Echolink (4*)(node 821351) (4*)
17	KØSXY	444.675+	114.8	Des Moines	Local Repeater Echolink (4*)(node 555013) (4*)
18	NØBKB	147.045+	114.8	Casey	Local Repeater Linked to SW Iowa Repeaters
19	KAØMHJ	147.270+	114.8	Greenfield	Local Repeater Maybe linked to various repeaters
20	WØYL	147.240+	None	Ames	Local Repeater SCARC
21	WØISU	147.375+	114.8	Ames	Local Repeater
22	KCØNFA	442.225+	151.4	Baxter	Local Repeater Linked to UHF system
23	KDØFGV	146.640-	114.8	Indianola	Local Repeater WCBM Echolink (4*)(node 789684) (4*)
24	KDØWFX	444.125+	114.8	Indianola	Local Repeater
25	KBØTLM	146.850-	None	Boone	Local Repeater BARK
26	KBØTLM	443.900+	None	Boone	Local Repeater BARK
27	NØSFF	442.600+	151.4	Madrid	Local Repeater
28	NØBKB	444.700+	151.4	Greenfield	Local Repeater Linked various ways
29	KDØNEB	145.190-	114.8	Perry	Local Repeater HARC (4)(node 710469) (4*)
30	KDØNEB	444.375	151.4	Perry	Local Repeater (6*)
30	SIMPLX	146.520		Simplex	National Simplex Calling Frequency
31	NØVPR	442.575+	151.4	Portable	ARES Used for local events & emergencies (2*)
32	KCØMTE	443.850+	151.4	Madrid	Local Repeater
40	NØINX	224.540-	114.8	Grimes	Local Repeater 1600 KHz offset
41	WDØFIA	224.980-	114.8	Des Moines	Local Repeater 1600 KHz offset
42	KDØWPK	29.6700-	103.5	Des Moines	Local Repeater 100 KHz offset
Polk Co. ARES Simplex: Ch-101 ARES-1 146.490 Ch-102 ARES-2 146.430 Ch-103 ARES-3 147.420					
Ch-104 ARES-4 446.175 Ch-105 ARES-5 147.570 Ch-106 ARES-6 446.975					

- These repeaters are generally monitored by KØDMX the Skywarn station at the National Weather Service office and take severe weather reports and provide warnings.
- This repeater is a portable repeater and is used for various ARES events and emergencies. The location and coverage of the repeater will depend on the event.
- Echolink® allows licensed Amateur Radio stations to communicate with one another over the Internet, using voice-over-IP (VoIP) technology. Allows worldwide connections to be made between stations, or from computer to station. <http://www.echolink.org/>
- The YAESU DR-1 is a digital/conventional UHF/VHF repeater. It was developed for use with System Fusion. DR-1 will provide use of conventional FM and digital functions.

This guide is provided as suggested frequencies for local programming.
There are many repeaters in Iowa, please explore them all!

Updated 2/11/18

DMRAA Frequency Programming Guide

Digital

Zone Name	Call Sign	Frequency	Color	Location	Use
Des Moines W	NØINX	444.725+	1	Grimes	DMR Repeater (1)
Des Moines C	WØKWM	443.500+	1	Des Moines	DMR Repeater (1)
Des Moines NW	NØVPR	443.100+	1	Johnston	DMR Repeater (1)
Ray UHF	WØRAY	444.875+	1	Waukee	DMR Repeater (1)
Ray VHF	WØRAY	146.755-	1	Waukee	DMR Repeater (1)
Greenfield	NØBKB	444.550+	1	Grimes	DMR Repeater (1)
Ames	WØYR	443.975+	1	Ames	DMR Repeater (1)
NØVPR	NØVPR	442.575+	1	Portable	DMR Repeater (1)
Indianola	NØFAM	442.700+	1	Indianola	DMR Repeater (1)
CID	WØGQ	443.600+	1	Cedar Rapids	DMR Repeater (1)
Otho	KØKU	443.575+	1	Otho	DMR Repeater (1)
Victor	KØTSK	444.950+	1	Victor	DMR Repeater (1)
Iowa City	KØGH	443.775+	1	Iowa City	DMR Repeater (1)
HS1		441.100+	1		DMR HotSpot (2)
HS2		441.200+	1		DMR Repeater (2)
					DMR HotSpot
	KDØIAN	443.175+		Grimes	D-Star Repeater (3)
	KDØIAN	147.105+		Grimes	D-Star Repeater (3)

1. DMR repeaters are typically connected via the internet to station locally and globally. Each repeater is capable of using two talkgroups at once.
2. DMR HotSpots are low power simplex repeaters that allow an individual user access in their own home. Typically, 20-40 mw output.
3. D-Star is Icom's digital protocol, these repeaters are linked to the internet gateway and allow the user to connect with stations locally and globally.

This guide is provided as suggested frequencies for local programming.
There are many repeaters in Iowa, please explore them all!

Updated 2/11/18

More Double-A Alkaline Battery Testing!

By KAØFTO Larry

More Double-A Alkaline Battery Testing!

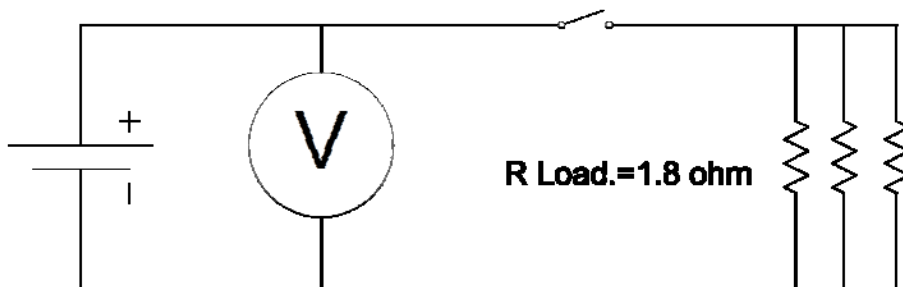
By KA0FTO Larry

In the April 2010 Static sheet I wrote an article testing various Double A Alkaline batteries. The prices have changed and more have shown up in various stores. In this article I will test 14.

1. North Tech old Orange and Black that was tested again here.
 2. North Tech new Purple and Black.
 3. Duracell Quantum (Super Battery as advertised). USA
 4. Power/Cell blue (on sale at Menards at 60/\$7.00 about 5 months ago) USA
 5. Pair Deer
- Added later-
6. Northern 24=\$8.00
 7. Ironiton 48=\$10.00
 8. Power Zone 4=\$2.25 at Fleet Farm
 9. ULTRA Alkaline from Kansas City
 10. Energizer Alkaline USA
 11. ACDelco Super
 12. Energizer NI-MH rechargeable
 13. DG/Home Alkaline Dollar General \$6.36=20.
 14. DG/Home HD old carbon Zinc Dollar General as curiosity \$3.00=20
It failed very quickly with less than 9 minutes to go below 1.000 volts.

Of the 14 tested just three were made in the USA.

The testing circuit was the same as last time but all resistors were wire wound and it took 3 to get to **1.8 ohms**. I could not find the resistors' I used last time to come up with 1.5 ohms. I used a better quality Digital Voltmeter and my \$7.55 wrist watch for the TIMING function.



Test Setup. * The last test in Table 7 R Load was changed to **.8 ohms**.

The Test Setup is shown with 3 resistors to equal 1.8 ohms.

Figure 01 is a photo of my actual Test Setup with one battery in the battery holder and the voltmeter is shown with the voltage of 1.241 volts DC.

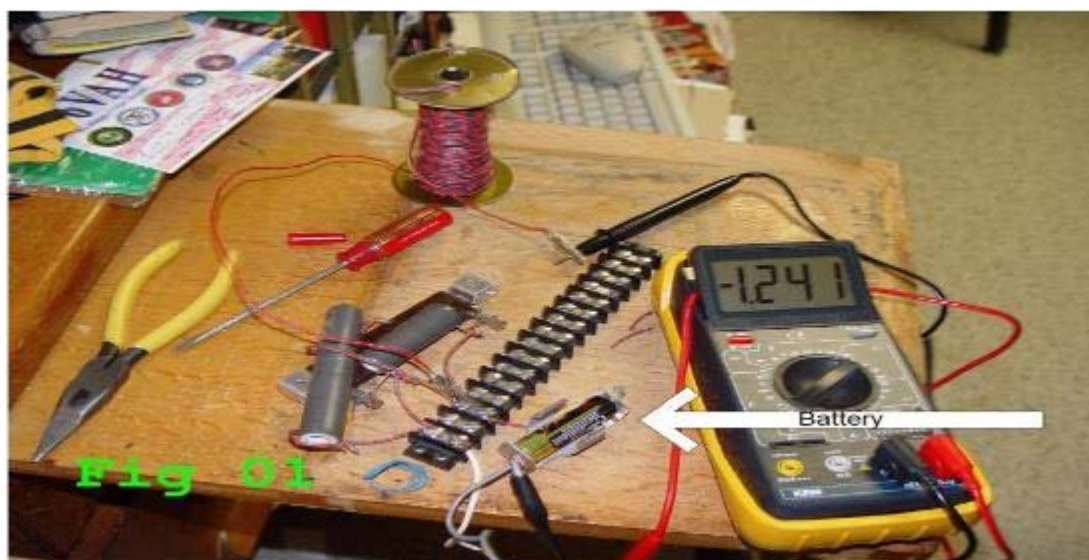


Figure 2 is a photo of the actual batteries that I used.



I will include Table 4 from the April 2010 article for comparison only.
 Note the vertical column showing the ohms is a reading taken within 15 seconds after I added the load of 1.5 ohms or in the new testing 1.8 ohms.

More Double A Alkaline Battery Testing! (cont)

	A	B	C	D	E	F	G	H	I
1	Alkaline Battery	Open Ckt	1.5ohms	5 min	10 min	15 min	20 min	25 min	30 min
2	North Tech (Menards)	1.62	1.33	1.21	1.16	1.13	1.1	1.07	
3	AC Delco	1.59	1.36	1.2	1.15	1.13	1.1	1.08	
4	Members Mark (SAMS)USA	1.61	1.43	1.29	1.23	1.2	1.17	1.15	
5	Northern Industrial	1.59	1.3	1.16	1.11	1.09	1.06	1.04	
6	Kirkland (Costco)USA	1.6	1.4	1.26	1.2	1.17	1.14	1.12	
7	Energizer (Alkaline)	1.62	1.43	1.29	1.23	1.2	1.17	1.15	
8	Ray O Vac	1.6	1.3	1.14	1.12	1.09	1.03	1.03	
9	Energizer Japan (NIMH rechargeable 1700MAH)	1.36	1.28	1.22	1.2	1.2	1.19	1.19	1.18
10	1.5 ohms at 1.5V= 1. A								
11	TABLE 4. April 2010								

Note in old table 4, from 2010, testing a **NIMH rechargeable** produced expected longer life. I HAVE BEEN UNABLE TO FIND THE DISCHARGED VOLTAGE ON A DOUBLE A ALKALINE BATTERY!
THE LOAD OF 1.8 OHMS WAS CLOSE TO 1 AMP AS I COULD GET. THIS WAS CLOSE TO WHAT I THOUGHT MY FT-60 WOULD DRAW AT 5WATTS OUT ON 2 METERS.

Per the specifications 1.3-1.5 amps on transmit at 5 Watts for my FT-60R.

MAYBE 2 AMPS WOULD HAVE BEEN BETTER BUT MY TEST WAS FULL TIME WITH OUT ON /OFF LIKE ACTUAL USAGE ON A RADIO.

SO WHAT DO THESE RESULTS MEAN? WILL THEY LEAK? WHAT IS SHELF LIFE?

IT WOULD SEEM THE RESULTS WERE VERY CLOSE WITH MAYBE THE

POWER ZONE ALKALINE, FROM FLEET FARM, BEATING OUT THE REST FOR 30 MINUTE USAGE.

Cost of Power Cell blue was the lowest with the Duracell Quantum being the highest. The rechargeable batteries are still available for approximately \$22.00 for 8 cells plus charger and have a higher current rating than when I purchased mine.

New table 5. is the testing, of the first 5, with fresh batteries.

New table 6. is the test again later with the same batteries after a 24 hour rest.

Alkaline Battery	Open Ckt	1.8 ohms	5 min	10 min	15 min	20 min	25 min	30 min	Open
NorthTech old Orange/Black	1.597	1.352	1.193	1.14	1.1	1.078	1.055	1.038	1.287
NorthTech New Purple/Black(US Duracell Quantum (USA)	1.626	1.4	1.257	1.21	1.176	1.148	1.123	1.101	1.33
	1.623	1.38	1.25	1.199	1.168	1.143	1.113	1.093	1.34
Power Cell BLUE.	1.667	1.433	1.322	1.252	1.208	1.183	1.16	1.142	1.33
Pair Deer	1.635	1.384	1.242	1.201	1.169	1.138	1.116	1.097	none
Pair Deer continue		35min=1.079		40min=1.058		45min=1.037			
All measurements were with KRM AEEC 2890 Digital voltmeter and testing fresh batteries.									
Table 5. 03-22-2018									

Alkaline Battery	Open Ckt	1.8 ohms	5 min	10 min	15 min	20 min	25 min	30 min	Open
NorthTech old Orange/Black	1.482		1.078	1.032	1.009	0.994	NA		
NorthTech New Purple/Black(US	1.488		1.114	1.078	1.051	1.029	1.01		
Duracell Quantum (USA)	1.494		1.117	1.081	1.06	1.046	1.036		
Power Cell BLUE.	1.496		1.157	1.116	1.091	1.07	1.051		
Pair Deer	1.457		1.085	1.048	1.023	1.00	0.984		
SAME BATTERIES AS TABLE 5, REUSED AFTER 24 HOUR REST!!!									
All measurements were with KRM AEEC 2890 Digital voltmeter.									
Table 6. 03-23-2018									

Table 7 was added later as I found more batteries that were reasonable priced as shown. None seemed to beat Power/Cell blue until I added **Power Zone** from Fleet Farm and **Ultra Alkaline** and **Energizer** that I found in Kansas City.

I added another test with the Power/Cell blue to determine how long before the voltage drops below 1.00 Volts. Some information has 1.00 Volts as the discharged voltage for Alkaline batteries. Most equipment that the battery is installed in would surely fail before then.

Finally, I retested the Energizer Rechargeable 1700mah battery I had on hand to see how long before I reached 1.00 volts. Once the voltage dropped below 1.00, at 61 minutes, it really dropped fast. Note from 1.157 at 20 minutes it took 40 minutes to drop below 1.00 volts.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
1	Alkaline Battery	Open Ckt	1.8 ohms	5 min	10 min	15 min	20 min	25 min	30 min	35 min	40 min	45 min	50 min	55 min	60 min	
2	Northern 24=\$8.00 New	1.61	1.42	.708A 1.275	.671A 1.208	.651A 1.173	.636A 1.145	.623A 1.122	.611A 1.100	.599A 1.079	.592A 1.067					
3	IRONTON 48=\$10. New	1.633	1.280	.633A 1.14	.617A 1.112	.605A 1.089	.594A 1.07	.584A 1.052	.572A 1.03	.559A 1.007						
4	Power Zone Alkaline, Fleet Farm \$2.19=4	1.648	1.420	.743A 1.339	.708A 1.275	.686A 1.236	.668A 1.203	.655A 1.179	.643A 1.158	.633A 1.140	.623A 1.122					
5	ULTRA Alkaline ST Louis MO?	1.635	1.380	.707A 1.273	.676A 1.217	.657A 1.184	.644A 1.160	.632A 1.139	.621A 1.118	.610A 1.099	.598A 1.077					
6	Energizer ALKALINE=USA	1.580	1.340	.677A 1.220	.655A 1.179	.642A 1.156	.630A 1.134	.620A 1.117	.605A 1.090	.599A 1.079	.593A 1.068	.588A 1.059				
7	AC DELCO Super \$10.00=24 at Theisen's	1.638	1.440	.731A 1.317	.697A 1.255	.679A 1.222	.662A 1.192	.650A 1.170	.634A 1.142	.622A 1.121	.614A 1.106	.606A 1.091				
8	DG/HOME Alkaline Dollar General.\$6.36=20	1.644	1.433	.721A 1.299	.693A 1.248	.672A 1.210	.653A 1.176	.643A 1.158	.631A 1.136	.622A 1.120	.611A 1.100	.600A 1.08				
9	DG/HOME HD Dry Cell \$3. =20	1.693	1.023	At 9 minutes had dropped to .999V.												
10	POWER/CELL blue tested again with a fresh cell at 1.8 ohms to try to find required time to drop to 1.00 volt. Required over 60 minutes.															
11	Power/Cell blue New	1.666	1.145		.696A 1.253	.673A 1.212	.658A 1.185	.645A 1.162	.633A 1.141	.622A 1.121	.613A 1.104	.603A 1.086	.593A 1.068	.585A 1.053	.573A 1.032	
12	4/6/2018	NOTE BELOW CHANGED TO .8 OHMS TESTING TO SEE HOW LONG BEFORE VOLTAGE DROPS TO 1.00 VOLTS.														
13	Energizer Rechargeable NIMH 1.2v	1.459	1.300		1.48A 1.188V	1.46A 1.171	1.44A 1.157	1.43A 1.148	1.42A 1.140	1.41A 1.134	1.41A 1.129	1.40A 1.124	1.39A 1.113	1.37A 1.098	1.31A 1.05	
14	TABLE 7.	NOTE LOAD INCREASED TO .8 OHMS!	CURRENT IN AMPS CALCULATED. I=E/R AT 61 MINUTES VOLTAGE STARTED DROPPING BELOW .99V FAST.													
15																

SO-

1. Rechargeable batteries will last longer but are more expensive.
Note table 4 after discharging down to 1.18 it seems they last longer. Note table 7 showing over 61 minutes before the voltage dropped below 1.000 Volts. NI-MH are usually listed as having a voltage of 1.2volts. Will your device run on that lower voltage? They seem the way to go if you use a lot of batteries especially in an HT. But you must keep them charged.
2. Of these 14, the POWER CELL, blue in color, seem to last longer and are cheaper if you can find them (Menards had them on special then seemed to run out). This was until I found the **POWER ZONE** at Fleet Farm. The price on the **POWER ZONE** was almost 3 times the price on the **POWER CELL** blue in color. This is not counting the NI-MH rechargeable!
3. The so called Super Batteries, that I used, that cost more do not always last longer than the cheaper ones. I must be missing something?
Maybe the next test I should use a **higher current and intermittent**

on and off? (The Duracell Quantum was my only Super Battery).

4. Maybe the Super Batteries will last a long time at lower voltage and higher current but will the device you are powering operate with that lower voltage?
5. There are many more manufactures of Double A Alkaline and I did not have any of the more expensive ones to test. Some were above \$2.00.
6. IF YOU WILL NOT BE USING A DEVICE FOR A MONTH, WITH BATTERIES INSTALLED, REMOVE THEM TO BE ON THE SAFE SIDE TO PREVENT DAMAGE VIA LEAKAGE.
7. So how many different manufactures of Alkaline Double A batteries can you find? I had to stop myself as I kept finding more!!!! I started with just 5 batteries!!
8. I did not try any of the Lithium family as they are much more expensive.

FOR ANOTHER TIME?

73 de KAØFTO Larry



Amateur Radio Technician Class

Offered by the Des Moines Radio Amateurs Association

This Class will prepare you to take the FCC Technician License Exam. The Saturday class will conclude with ARRL VE examiners administering the Technician Exam.



Reasons to get an Amateur Radio License

- I always wanted one.
- I want to help my community in times of need.
- I love to play with cool tech things.
- I want to Experiment
- It will drive my husband crazy
- I want to connect in a different way.
- No need to learn Morse code



What: Amateur Radio Technician Class

When: Saturday, June 16th, 2018 8:00 AM to about 7:00 PM

Where: Edgewater Retirement Community, 9225 Cascade Ave. West Des Moines, IA "Wellness Room" - this is a ground level room just west of the main entrance on the South side of the facility.

Cost: \$ 100.00 This includes the text book, pre-course material, lunch with drink. HT Radio

Testing: Fee includes FCC Technician Class Test.

With **successful completion** of the examination each participant will receive a year's membership in the Des Moines Radio Amateurs Association.

The DMRAA philosophy concerning this Technician Class: **Yes you can!** We know that Ham Radio begins with a license and then the learning really starts. We encourage all interested person to consider this class. Enroll with a friend. There are no age restrictions as long as you are motivated.

To Pre-Register (a must)

Individuals wanting to take the class can contact me for payment and books at:

Mark Globuschutz, KØMJG

mglobuschutz@msn.com

2505 SW 36 St.

Ankeny, Iowa 50023

Home = (515) 289-4412 Cell = (515) 201-7669

Registrations with payment must be received by June 2nd, 2018



Des Moines Radio Amateurs Assn.
P.O. Box 88
Des Moines, IA 50301
DMRAA.org or DMRAA.com

E-mail: info@dmraa.com

Can you hear me now?

The Static sheet is bi-monthly (six per year) publication of the Des Moines Radio Amateurs Association. It is provided via email to the membership of the DMRAA. Please feel free to forward to prospective club members and interested Amateur Radio Operators.

The DMRAA is affiliated with the ARRL, The national association for Amateur Radio.



DMRAA Membership Application

Des Moines Radio Amateurs Association

Name: _____

Address: _____

City: _____, State: _____ Zip: _____

Phone Number: (____) _____ Email: _____

Call Sign: _____ Class: (E) (A) (G) (T)

ARRL Member: ? Y / N

What are your primary interests in amateur radio? _____

What are you interested in learning about? _____

How would you like to volunteer with the club? _____

Dues \$20 Single
\$60 3 Years

NOTE: Dues are for calendar year.

Mail Application and payment to
DMRAA
P.O. Box 88
Des Moines, IA 50301

