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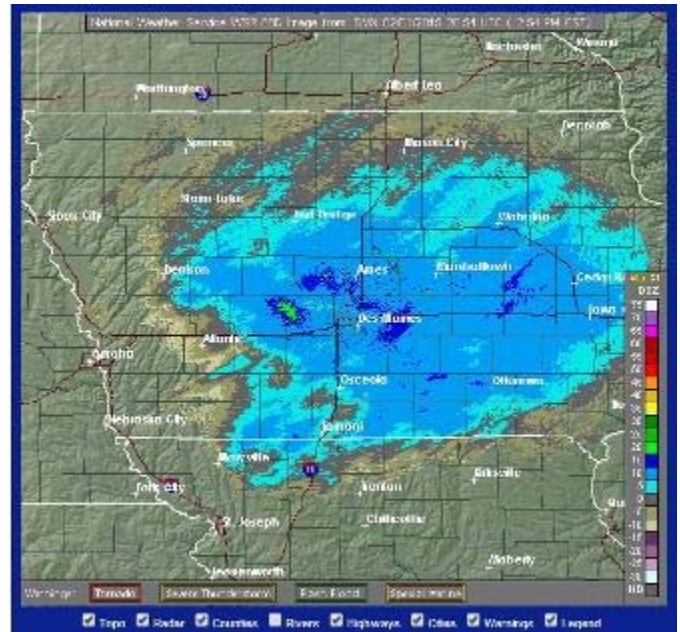
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2015 NWS Spotter Training

The DMRAA's February 24th meeting will be our annual NWS Spotter Training. This 90 minute presentation is a yearly event that is vital to keeping spotters informed on "best practices" for spotting and reporting severe weather in Iowa. The presentation is designed for both first timers as well as seasoned spotters.

Note: There will be a short meeting of the Mid-Iowa Skywarn Association at 6:45 pm

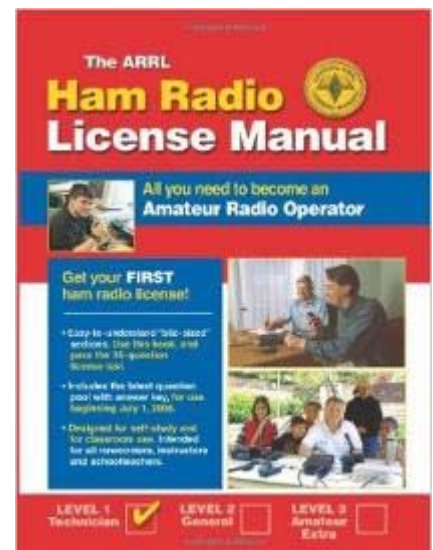


February 24th, 7:00 pm
Recital Hall, 3rd floor
Plymouth Congregational
Church
42nd & Ingersoll, Des Moines

Technician study class in Des Moines

The DMRAA is pleased to announce that we will be offering a technician study class in Des Moines. Dennis, KAØDOS, Ron NØXWI, and Mark KØMJG are the instructors. The class will meet at Roosevelt School starting March 23, 2015. The class cost is \$25, and students will also need to purchase a study guide from the ARRL. Copies will be available at the first class for \$ 25.00. Ages 11+. Offered in partnership with the Des Moines Public School Community Education.

Please feel free to invite any prospective Hams. These classes are open to all regardless of their city of residence. Club president Bruce Brumm noted how pleased he is that the club has the resources to plan and promote activities like this that encourage Amateur Radio in Central Iowa. If you'd like to help the instructors, please contact them.



DMRAA
Membership has its
privileges!





Come enjoy the fellowship

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



Upcoming Meetings

NWS Spotter Training

February 24th

7:00 PM

Plymouth Congregational Church
42nd & Ingersoll
Recital Hall, 3rd floor

March Meeting,

March 24th, 7:00 PM

Plymouth Congregational Church
42nd & Ingersoll

Let's learn how to properly solder those coax connectors.
BNC—PL-259, "N" Come and see how



April Meeting

April, 24th 2015 7:00 PM

Plymouth Congregational Church
42nd & Ingersoll

The news has been full of stories of credit card data that has been compromised by way of merchant transactions. We in the United States are about the only country left in the world using magnetic strip technology. The rest of the world has converted to the Chip Card or EMV. EMV is short for Europay, MasterCard, Visa and has become the standard for electronic money changing not only with merchants but at ATMs as well. as to what's coming later this year. Stephen Sladek is in the technology section of Bankers Trust and will present a program which should clarify the EMV for us.

Future Meetings

Bruce, KCØZMT is looking for meeting ideas and presenters. Please feel free to make suggestions and offer to help with a presentation.

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.



January Meeting

Commander Brandon Butters of the Coast Guard Auxiliary Division 33, Flotilla 4 gave a great presentation of the mission and activities of the Coast Guard Auxiliary in Iowa. He described their mission in Iowa and along side the US Coast Guard. They serve in various emergency situations, tactical support for water events and aid in informational support. While the auxiliary has several Amateur Radio operators in their membership, you do not need to be a ham to participate.





Giving back through
community service

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



Polk County ARES Meetings

Polk County EOC at
1907 Carpenter Avenue
Des Moines, IA



Polk County ARES



Welcome to 2015! I hope you all had some quality down time to get recharged (pun intended), and you are all ready for our 2015 event season.

We will once again be helping out the Lung Association with their Fight for Air Climb on Sunday, March 22. This year's event will add another building, so we will need more operators. Please contact me to get signed up.

The rest of the season promises to be as exciting as ever, and we will continue to do the events we have done in the past.

The list of events appears elsewhere in the Static Sheet, so please get those dates marked on your calendar so you can help out.

And finally, I would like to take a second to remind

you all of the Polk County ARES net. This net happens every Thursday evening at 7:00pm.

The ARES net has been on the air for over 25 years, and is a great opportunity to "meet" other operators, and hear some of the things going on in the ham radio community. You don't need to be registered with ARES to check into the net, and through the longstanding partnership between Polk County ARES and the DMRAA, it is on the 146.940 repeater.

Thanks for reading...
Scott NØOOD
Polk County ARES
(515) 480-7414 (cell)

Event Highlight Market to Market® Relay

The Market to Market® Relay is what Iowa runners are talking about! A team running relay from Jefferson to Des Moines, the Market to Market® Relay Iowa covers 75 miles over 17 stages on a scenic and varied course. Join 6 of your closest pals, hop in a van, run, rest and repeat. The course follows the Raccoon River Valley Trail System, paved streets, and gravel back roads through a diverse and scenic slice of west central Iowa. Combine the running with outrageous costumes, memorable van rides, and a lively Post-Race Shindig & Expo in downtown Des Moines and it all adds up to 1 unforgettable day. Capacity is limited to 300 teams.



May 9th, 2015

ARES MEETING DATES 2015

Monday, April 13 7:00pm
Monday, July 20 7:00pm
Monday, October 12 7:00pm

2015 ARES Events

Fight for Air Climb, March 22, 2015
Market to Market, May 9th, 2015
Dam to Dam, May 30th, 2015
Field Day, June 27th-28th, 2015
Full Scale Airport Exercise, August 8th, 2015
Iowa State Fair Parade, August 12th, 2015
Head of the Des Moines Rowing Regatta, September 26th, 2015
Des Moines Marathon, October 18th, 2015
Living History Farms Fun Race, November 21, 2015

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



2014 DMRAA Calendar



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

Calendar 2014-15

General Meetings and Events

24 February, 2015

24 March, 2015

18 April 2015 HAMFEST

28 April, 2015

26 May, 2015

23 June, 2015

27 June 2015 Field Day

28 July, 2015

25 August, 2015

22 September, 2015

27 October, 2015

**24 November, 2015 Chili
Feed / Auction**

Board Meeting Dates

3 March, 2015

7 April, 2015

5 May, 2015

2 June, 2015

7 July, 2015

4 August, 2015

1 September, 2015

6 October, 2015

3 November, 2015



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 Bill Claypool NØUQ
for details.



President's Soapbox

Moving Forward in 2015, Capably.

A recent web-site article by Tom Reis, NØVPR, detailed some of the club accomplishments in 2014. A particular goal of mine that was met was to establish the WØAK-2 (146.985) repeater on the VA Medical Center. The board also recently voted to add a third repeater location at Broadlawns hospital. This will be accomplished in 2Q- to 3Q-2015. With these updates, and including the WØAK-1 repeater (146.940) tech refresh in 2103, the DMRAA has significantly contributed to building a robust, up-to-date repeater infrastructure in Polk County.

Some of you might state that there are already plenty of underutilized repeaters available. This is generally true. However, from a disaster planning and recovery point-of-view, these actions are very prudent. We never know what resources will be available to us during a disaster. Thus it makes sense for us to provision capability wherever we can. This gives us more flexibility to adapt to a disaster situation. As an example, we

maintain packet radio at Lutheran hospital and it gets used in that role. But if we need to, we can take advantage of the emergency power and antennas at the hospital, and bring up another 2m or 70cm repeater -- all depending on the needs as dictated by the situation. It is incumbent on us to be prepared and manage the resources given to us wisely.

The group that manages these resource decisions is the club board. As you know, elections are coming up in May. We have several positions available. The nominating committee is working hard on gathering and presenting a slate of qualified candidates. While we all have diverse opinions and skill sets, one of the most valuable qualities of the board that I have observed during my various tenures is the ability the govern by consensus. It is very rare that there is dissent or negative discourse on any subject. When there is, further detail and discussion usually clears up any misunderstandings and the votes are nearly universally unanimous. This does not mean that we are led by "yes men". Quite the contrary -- we have a diverse group

which appears to more-than-adequately represent the breadth of the club's membership. The feedback we receive regarding our actions is generally positive.

However, it is good to check that feedback more formally from time to time. To that end, we have developed a satisfaction survey for the current membership to complete. It will arrive via email from the club email account, info@dmraa.com.

Please take a few minutes to complete the survey and please do provide honest, actionable input. This will help us continue to make capable decisions.

We look forward to serving capably with you in 2015, and beyond.

Bruce D. Brumm
KCØZMT
DMRAA President



Yesterday
my XYL
said
she'd
leave me
if I didn't
give up
ham
radio,
Over.

SK



**Bruce Brumm
KCØZMT**



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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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
Monday	146.940- t 114.8	7:30 pm	DMRAA information Net
Wednesday	53.250-	8:30 p.m	Iowa 6 Meter Net 1.7mhz-
Thursday	146.940- t 114.8	7:00 pm	Polk County ARES Net
Friday	145.310- t 114.8	7:00 p.m	Evening Newsline & Fusion Net

INDIANOLA

Saturday	146.640- 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

CRESTON

Sunday	443.400+ t 151.4	8:30pm	SW Iowa Amateur Radio Assn.
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STATEWIDE NETS

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

Sunday, March 15, 2015
 Sunday, May 17, 2015
 Sunday, July 19, 2015
 Sunday, September 20, 2015
 Sunday, November 15, 2015
 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

March 5, 2015 7:00 PM
 April 18, 2015 10:00 AM

Location: 1246 Howe Hall, Iowa
 State campus

Contact: George Oster, NP2N
 515-233-3535

Boone 9:00am

February 14, 2015
 April 11, 2015
 June 13, 2015
 August 8, 2015
 October 10, 2015
 December 12, 2015

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

March 7, 2015
 May 2, 2015
 August 1, 2015
 December 5, 2015

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

Contact:
 Brian Krumm, NØMXK
 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



Time to
Eat?

Buy / Sell



Alinco DJ-V57

EDC-159 drop-in charger
Extra standard duck antenna
3 extra EBP-64 Lit-Ion batteries
2 EDC-161T AC wall adapters

\$150

Contact Kevin, NØIWT
(515) 266-1738



DMRAA T-Shirts For sale

The DMRAA has club T-Shirts for sale in most sizes.

\$8 size S-XL

\$10 for 2XL—4XL

* subject to shirts on hand

Contact Tom, NØVPR

n0vpr@arrl.net

(515) 314-5666



Are you checking the website?

Keep up to date with local amateur radio news. The club website is a great resource.

[Go to dmraa.org](http://dmraa.org)



Hungry and looking to meet local hams? On Fridays at the City Buffet 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.





There are several Polk
County ARES events

upcoming.

Contact

Scott, NØOOD

n0ood@arrl.net

to volunteer

SW Iowa repeaters now linked to Grimes

Recently the South West Iowa Amateur Radio Association decided to link their repeaters to the 443.400+ t151.4 repeater in Grimes. This allows access to a number of repeaters in Southwest Iowa including Afton, Menlo, Creston, Prescott, Greenfield, Bedford, Osceola and Lenox. There is a net every Sunday evening at 8:30 pm. and all are welcomed to check in. This is a great network of repeaters and a real plus for the National Weather Service and their mission during severe weather. The hope is that this linking will increase the number of severe weather reports from Southwest Iowa.

Location	Freq.	PL
Grimes	443.400+	151.4
Afton	442.400+	151.4
Menlo	147.045+	114.8
Creston	146.790-	136.5
Prescott	145.510-	127.3
Greenfield	444.700+	173.8
Bedford	443.700+	136.5
Osceola	147.21+	136.5
Lenox	146.88-	136.5
Clarinda	146.97-	136.5



Area Ham Wins Division in ARRL VHF Contest

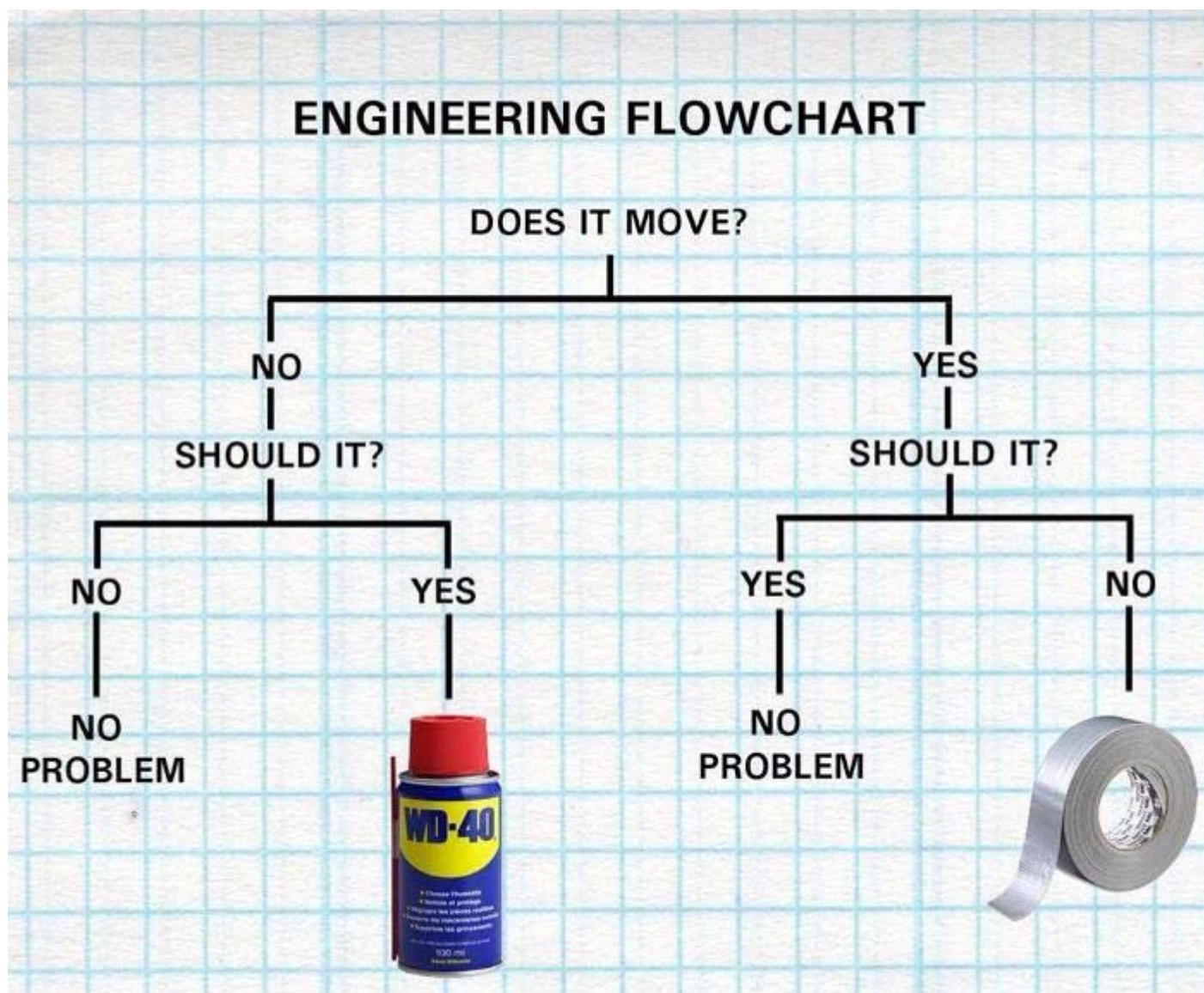
Congratulations to Jack Coleman, K0JQA for winning the Division award for the ARRL VHF contest in January, 2014. He competed in the single operator, VHF, 3-band portion of the contest. Jack is passionate about VHF so when a contest comes up, he is on it. During the January 2014 contest he worked 100 watts on 50 MHz, and 50 watts on 432 MHz & 144 MHz. His modes are sideband and CW. During the contest, Jack worked low power, single operator with no assistance in operating or logging. His very first QSO in his winning



DMRAA Changes NET

After a decades-long absence the DMRAA has resumed a net. It's a combination of club announcements and ragchew chat. While it is a DMRAA net, it is open to everyone, member or not. We use the WØAK club repeater, 146.940. Join us Monday evenings at 7:00 p.m. We open with check-ins, then move to club announcements, then the ragchew begins. You may share your amateur radio activities, ask for assistance on a project, or list buy and sell items. Please join us on the net.

EXTRAS



Static Sheet Deadlines

Item submission date	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



The 2015 Des Moines Hamfest will be held **on Saturday, April 18, 2015 at the Elwell Family Center at the Iowa State Fairgrounds** (enter at the Grand Avenue gates, take a right, and follow signage). Doors will open at 8 a.m. Admission is \$6, kids 12 and under are admitted free. The Elwell Center boasts convenient parking, concessions provided by Campbell's, restrooms, handicap access, and climate control.

Door Prizes

MFJ-225 HF/VHF Two-Port Graphic Antenna Analyzer



Take RF testing to the next level with the new MFJ-225! All the basic analyzer functions you've come to depend on plus a host of advanced features like built in LCD graphics, two-port VNA measurement, PC-Interface using IG-mini VNA freeware, precise DDS frequency control, self-calibrating . . . easy-to-use!

Comes with programming cable and software.
10 Watts
Only 4 3/4" x 1 1/2" x 3 3/8"
CTCSS/DCS Encode/Decode Built In
199 Memory channels
Transmit 400-470 MHz and 136-174 MHz
Receive 400-520 MHz and 136-174 MHz

Jetstream JT270M 2m/70cm DUAL BAND MOBILE 10Watts



Table reservations

Tables are available at the DMRAA Hamfest for \$20 for the first table, and \$10 for subsequent tables. Payment is due upon entry to the Hamfest venue. Buying a table does not grant free admission — vendors will still need to purchase a ticket for admission. The DMRAA reserves the right to not accept table reservations that are purely commercial interests and not amateur radio-related. Cash or check is accepted — make checks payable to the Des Moines Radio Amateurs Association. Fill out the form below to reserve your tables! **No tailgating is allowed at the Iowa State Fairgrounds.** Table reservations will close at noon on Thursday, April 17. Telephone reservations will not be accepted.

See <http://www.dmraa.com/hamfest> for table sign-up and more information.

Analog FM Repeaters — an Overview

Why your local voice repeater acts the way it does, and how to get along with it.

Steve Sant Andrea, AG1YK

Repeaters have become the essential tool of modern FM communications. Individual repeaters allow V/UHF mobile and handheld transceivers to communicate with each other over much larger areas and more difficult terrain than would be possible with direct simplex contacts. Repeater linking has enhanced this ability even more. Linked repeater systems connect repeaters with each other through direct radio or Voice over Internet Protocol (VoIP) connections. Here in Connecticut, one club has built a system of linked repeaters that covers the entire 100-mile length of the state. You can access this repeater network near Connecticut's New York border and chat with another station in Rhode Island, using just a handheld transceiver.

Two in One

Many thousands of hams use repeaters every day without really understanding them. There's lots of chatter about frequency pairs, shifts, tone codes, courtesy beeps, transmit timers, and link delays. What does all this stuff actually mean to you as you operate, and why are they necessary for using the local repeater?

Hardware-wise, a repeater is one receiver and one transmitter, which are operated by a controller and connected to the same antenna. "Okay," you say, "I've got a transceiver, which is a transmitter and a receiver, connected to one antenna at my shack, but it doesn't act like a repeater. So what's the difference?"

When you use your rig at home, whether it's a base station, mobile, or handheld transceiver, you switch between the receiver and transmitter, using each *alternately* to communicate with another ham. In a repeater system, both the receiver and transmitter must be operating *simultaneously*. A repeater functions by hearing your signal with its receiver, demodulating your signal to extract your voice, transferring your voice audio to its transmitter, which then retransmits your signal through the

same antenna where it is being received.

Those of you who see a problem here get a gold star; for those who don't, let me give an example. Let's say that instead of a receiver and transmitter doing all that modulating and demodulating, we just have a microphone, amplifier, and speaker. If you place the microphone directly in front of the speaker and turn on the amplifier, two things will happen. First, you get a really ugly squeal that keeps getting louder and louder, commonly known as feedback. Second, at some point, either the microphone, amplifier, or speaker will fail, putting an end to the squeal — and a dent in your wallet when you buy its replacement.

Unless we take certain hardware precautions, feedback will occur with a repeater, but in a repeater the feedback loop would occur in the RF circuit instead of the AF circuit. The retransmitted signal, if coupled directly to the common antenna, would

quickly overload the receiver's front end. Obviously, a system that fries the receiver's front end every time the power is turned on cannot be considered a reliable means of communication. Steps need to be taken to prevent this eventuality. Enter the *duplexer* (see Figure 1).

A Divided Highway

The duplexer uses a series of tuned circuits to allow the 100 W output of the transmitter to flow to the common antenna while keeping that same powerful signal from doubling-back into the microwatt sensitive receiver front-end. Of course, the duplexer's tuned circuits aren't the whole story. By separating the transmitter and receiver frequencies by some nominal amount, the design requirements — and cost — of the duplexer are greatly reduced. Enter the *offset* or *shift*.

Small Change

The receiver and transmitter in a repeater are fixed-frequency devices. Unlike your rig at home, which can tune to thousands of individual frequencies, a repeater's transmitter and receiver must be locked to a particular frequency — or more accurately, a *frequency pair*. A frequency pair refers to two frequencies separated by a fixed amount — the *offset* or *shift*. Each V/UHF band has a standard shift. On 2 meters, the offset is 600 kHz; so for any 2 meter repeater, the transmit frequency is shifted from the receive frequency by 600 kHz. It's customary to refer to a repeater by its transmit frequency — *your* receive frequency. For example, the W1AW 2 meter repeater transmits on 145.450 MHz. The repeater's receive frequency — *your* transmit frequency — will be 600 kHz away.

"Hold on," you say, "doesn't that leave us with two different repeater transmit frequencies, 144.850 and 146.050 MHz?"

Yes, it would, which brings us to shift's little brothers, "+" and "-", which define the direction the offset has for a particular repeater. Remember, the shift is often the same amount on a given band, but the di-

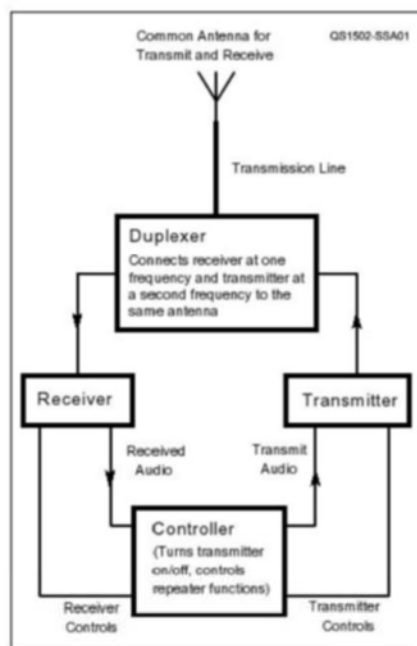


Figure 1 — This is a block diagram of the essential components of a repeater. Most practical repeaters are more complicated than this, but all will have these basic components.

rection of that shift, up or down, is specific to a particular repeater. For the WIAW repeater, it is designed for a “-” offset, so the repeater’s receiver frequency — your transmit frequency — will be at 144.850 MHz. If it had a “+” offset, the receiver frequency would be at 146.050 MHz.

If you go through a list of the 2 meter repeaters in your area, you’ll see + and - symbols scattered all over. These shift directions aren’t random. They usually follow the pattern shown in Figure 2. For each band where repeaters are used, certain segments are defined for repeater outputs (transmit frequency, T) and inputs (receive frequency, R). Where the repeater’s transmit frequency is and what other repeaters are on adjacent frequencies determines a particular repeater’s offset.

Keeping Things Organized

So you see, each repeater needs a frequency pair in order to operate. To keep things organized, frequency coordinating committees have been formed throughout the country to assign frequency pairs to new repeaters. These local committees operate under the umbrella organization the National Frequency Coordinators Council (nfc.us).

These frequency coordinating groups aren’t legal bodies, but operate under the “self-regulation” aspect of ham radio. Note that there are uncoordinated repeaters in operation, but the vast majority of repeaters are coordinated, especially in urban areas where there can be dozens of repeaters competing for band space.

Even with this coordination, there can be unintentional interference between repeaters in neighboring areas. Propagation conditions can create an “opening” that will carry a signal far beyond the local area. It’s possible to have two repeaters, operating on the same frequency pair in two different but nearby cities. Under normal conditions they are outside each other’s range and both operate without interfering with the other. Then a really hot opening comes along and the two are stepping all over each other. To solve this problem, *tone encoding* (sometimes referred to as *PL*, a Motorola trademark) was introduced.

A Sonic Separator

Tone encoding is a system that was borrowed from the commercial sector. The most common system is the Continuous Tone Coded Squelch System (CTCSS).

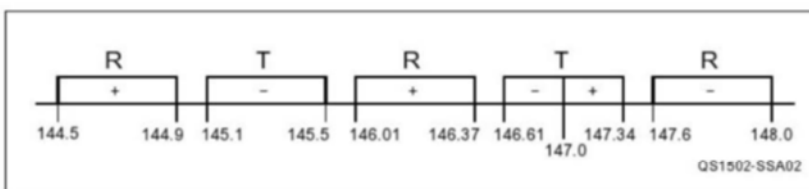


Figure 2 — This diagram shows a typical arrangement of offsets for the 2 meter band. These frequency segments and offsets vary regionally, so check the local repeater listings for your area before programming your radio.

CTCSS consists of 49 discrete tones ranging from 67 – 254.1 Hz. When a repeater is placed on the air, the owner sets the repeater’s controller to scan any signal received for its assigned tone. If the controller detects the correct tone, it activates the repeater’s transmitter and retransmits the received signal. If the controller receives a signal, but without the correct tone, the transmitter is not activated and the received signal is not retransmitted.

The tones used are referred to as “subaudible” tones, even though they are in the audible frequency range. They are called subaudible because the repeater’s receiver filters them out before passing the audio to the transmitter. The tones are not heard by the hams using the repeater.

A more recent development is the use of Digital-Coded Squelch (DCS). This is a system that modulates a subaudible tone with a 23-bit digital code. Just as with the CTCSS system, the digital code of the transmitter must match the code of the repeater for the repeater to “open.”

Communications Courtesy

Most repeaters are “open” repeaters, that is, they can be used by any ham within their operating area (there are some “closed” repeaters that can only be used by a limited group, but closed repeaters are not common). A consequence of this is that you can get a group of hams having a conversation on a repeater. This is called a *roundtable*. In a roundtable, each participant speaks, then passes the discussion to the next ham in the group. Such discussions can make it difficult for new stations to access the repeater. To allow a space for a new ham to join the group, most repeaters will transmit a short courtesy tone or beep a few seconds after the last station stopped transmitting. The time between the end of the last ham’s transmission and the beep is a courtesy period when a new station can jump into the discussion.

The courtesy tone system does have a drawback. If a large group is having a discussion or a net is using the repeater then, even with each station waiting for the beep, it’s possible for the repeater’s transmitter to be active for an extended period. To prevent this, repeaters have a transmit timer. This timer is required by FCC regulations to be a 3-minute timer. It starts when the *repeater’s transmitter* is first triggered. For this reason, whenever you participate in a roundtable or net on a repeater, it’s a good idea to let the repeater’s transmitter drop periodically to reset the transmit timer.

One final bit of courtesy that you will run into involves linked repeater systems. A linked system connects many different repeaters together to form a continuous system. When you “key up” one repeater in the system, an activation signal is passed to all the other repeaters, causing all the transmitters to be activated. The linked system I mentioned at the beginning of the article has a total of 15 repeaters on four bands connected into the system.

When using a linked system, remember that it takes a short time for all these links to be activated. When first keying your transmitter, wait a second or two before speaking to allow all the links to be activated. If you speak too quickly, all the links may not be established and the first word or two of your transmission (or your call) can be cut off.

I hope this discussion clarifies some of the finer points of analog FM repeaters for you. (Digital repeaters are quite a bit different and that’s fodder for a future article.) So turn on that rig and check out your local repeaters. Join in a discussion or check into a net and enjoy another of the many aspects of ham radio.

Steve Sant Andrea, AG1YK, is an assistant editor at QST. He can be reached at ag1yk@arri.org.



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

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

