

# MRAC Hamateur Chatter

The Milwaukee Radio Amateurs Club

March 2015 Volume 23, Issue 3

One of the World's Oldest Continuously Active Radio Amateur Clubs—since 1917

## Presidents' Letter

It's been a busy last few weeks for the radio clubs, so we'll recap everything that's been happening. But first, a reminder that we have moved this month's meeting up a week to **Thursday, March 19**. We did this to accommodate the schedule of our guest speaker Chris Wilson, who is the national sales manager for Yaesu. Chris has been very involved with the growth of Yaesu's System Fusion. MRAC and MADOG partnered together on the Yaesu beta test program of the Fusion repeater, and this has sparked new interest in digital radio here in the Milwaukee area. It's exciting to see that we've gained new members because of our willingness to experiment with the new technology. This will be a great meeting to attend to get more information about the Yaesu System Fusion and get all of your questions answered.

If you cannot be at the meeting on March 19, Chris Wilson will be at AES Superfest on March 21, so you can be sure to ask more questions of him then.

February was a very busy month for the club. We held our annual Simplex Contest on February 8, and it was excited to hear so many new callsigns.

In all, that means we did our job getting the word out about the contest, so thank you to all who participated.

This year, we tried to add the DStar and Fusion digital modes to the contest. I assumed that adding the digital modes would be easy. However, since I was operating the club station, I was trying to hand out contacts on both digital modes, and I did run out of antennas (and hands) to operate. Fusion proved to be the most popular of the digital modes. There was also much more activity on 220 MHz year. I think that had to do with the Black Diamond group, since they recently put up a 220 MHz repeater. In all, it was a fun contest, and you can check out some photos on our Facebook page: <https://www.facebook.com/MRAC.W9RH>

Valentine's Day was busy with our annual Midwinter Swapfest out at the Channel 10 Auction Studios in Brookfield. We had a great turnout, and some cool door prizes. Thanks again to all who came out, found some deals, won a door prize, and grabbed stuff off the Free table.

Finally, with the money raised from Swapfest, we were able to host our annual February Potluck Dinner (aka FOOD Meeting). Chef Al KC9IJJ did another great job making a turkey dinner for us to enjoy. I personally want to thank everyone who pitched in by bringing a dish to pass. There was



### MRAC Officers:

#### Terms Expiring in 2016

- President – Dave, KA9WXN
- V-President– Dan, N9ASA
- Secretary – MBH, KC9CMT
- Treasurer – MBH, KC9CMT
- Director – Mark, KB9RQZ

#### Terms Expiring in 2015

- Director – Al, KC9IJJ
- Director – Hal, KB9OZN

The Club Phone Number is: (414) 332-MRAC or

(414) 332- 6 7 2 2

Visit our website at:

[www.w9rh.org](http://www.w9rh.org)

Mail correspondence to:

**M. R. A. C.**

**PO Box 26233  
Milwaukee, WI**

**53226-0233**

One suggestion from the meeting was that we should have more meeting nights where we just hang out and socialize. We will definitely look into more opportunities to do this at future meetings.

See you all on March 19 for our next meeting, and on March 21 for AES Superfest.

*'73 Dave, KA9WXN*



The following people provided prizes  
for our hamfest in 2015:

## Amateur Electronic Supply

[www.aesham.com](http://www.aesham.com)

AES Milwaukee  
5710 W Good Hope Rd  
Milwaukee, WI 53223  
800-558-0411

## ARRL

"The National Association  
of Amateur Radio"

[www.arrl.org](http://www.arrl.org)

## RF Adapter Guy

Connectors, adapters, anten-  
nas, etc.

[www.adapterguy.com](http://www.adapterguy.com)

## N3FJP Software

Amateur Radio Logging Soft-  
ware

<http://www.n3fjp.com/>

As well as The Milwaukee Radio Amateurs' Club Inc.

And The Milwaukee Area Amateur Radio Society

Board of directors meeting called to order at 6:55 pm by Dave Shank, KA9WXN club president.

Director's present: Michael KC9CMT, Dave KA9WXN, Dan, N9ASA. Mark, KB9RQZ, Hal, KB9OZN, Al, KC9IJJ.

Absent: None

The Board of Director's minutes were accepted as published in the February Chatter by a motion forwarded by Michael, KC9CMT seconded by Dan, N9ASA. The Treasurers report and 2015 annual budget was presented by Michael, KC9CMT. A motion was made by Al, KC9IJJ to accept the Treasurers report as read; Hal, KB9OZN, seconded the motion. The motion was passed by unanimous vote. The budget predicts an surplus in 2015 of \$2.44. The February balance ended with \$19,644.52 in our Club accounts. We make \$8.62 a month in CD interest. The annual budget was accepted by the Board of Directors as presented. A motion was made by Mark, KB9RQZ, and seconded by Dan N9ASA. The motion was passed by unanimous vote. The Board of Director's accepted a motion by Dan, N9ASA, and seconded by Mark, KB9RQZ to purchase a \$4000 CD at WaterStone Bank. The motion was passed by unanimous vote. Mark, KB9RQZ made a motion and Dave, KA9WXN seconded the motion to open an bank account for the purposes of PayPal wire transfers. The motion was voted on and accepted by all members. We will be sending the ARRL Spectrum Defense Fund \$200 early in 2015. The Church will be getting a donation of \$100 for allowing us to use their facility during the 2014 calendar year. The MRAC swapfest was a great success. Preliminary estimates show a net gain of \$1,121.99. Accounts payable needs to send out payments for swapfest expenses the week of February 25<sup>th</sup>. The donation to Lutheran Redeemer church and payment to the State of Wisconsin for an incorporation fee will be paid by March 2<sup>nd</sup>, 2015.

Dave asked about locking in a swapfest date for 2016, possibly **February 13<sup>th</sup>, 2016**. Dave will advise at the March Board meeting. Approx. 225 people attended the swapfest this year, Dave, KA9WXN asked if we would approve having three different ticket colors for 2016. The club would need advanced tickets by November 2016. Yellow—comp. Tickets, Green at door, other colors to be determined. We will continue to use the Google spreadsheet for the 2016 swapfest. We will be contacting the Makers group to buy tables for the 2016 swapfest along with American Science & Surplus. We also will be printing approx. 1000 fliers for distribution between now and February 2016. A motion was made by Mark, KB9RQZ and seconded by Dan, N9ASA to send a goodwill amount of \$25 to the Ozaukee Historical Society. This motion was passed by unanimous vote by the Board.

**Meeting programs:** The February meeting will be a food gathering again in 2015. The March meeting this year will be one week earlier, on **March 19<sup>th</sup>, 2015**. **AES SuperFest** will be that weekend, beginning March 21<sup>st</sup>. We will be having someone from Yaesu give a presentation on the Fusion repeater system they have developed. The April 2015 meeting will be a wrap-up of the great balloon launch, besides being the club election meeting. The club secretary will be sending out election literature sometime in the middle of March. The MRAC/MAARS joint picnic will be on **August 8<sup>th</sup>, 2015** at Greenfield park, picnic area number 2, a permit has already been issued for the picnic.

The club meeting in June is before field day this year. Work will be done on updating the functionality of the Yahoo group by Dave, WB9BWP.

**Simplex Contest:** Contest logs are beginning to be submitted to the club PO box. The FM contest seemed to be a great success other than the Digital element that was problematic. Al, KC9IJJ ran a off-the-cuff net on the digital repeater for the contest. Mark, AB9CD will be doing the scoring for this years contest.

**Field Day:** The MARC field day effort will be at Konkel park in Greenfield in 2015. Dave, KA9WXN has received a permit that secures our spot at Konkel Park in June of 2015. Dave will be asking the membership for station captains to help coordinate activities during field day. The Gateway Technical group will be joining us again this year. The board would like to have a working committee on the field day effort this year. Invites will be sent out to various individuals to work stations.

### Special Project Committees & Committee reports:

**Repeater Report:** The Yaesu Fusion repeater that Yaesu gave the club a great deal on, is on back order. The cost of this repeater was a real bargain at \$300. Dave, WB9BWP is the repeater trustee and a control operator. The club would like more than one repeater control operator. A club repeater control operator should be a extra class operator to have the kind of privileges that are necessary to operate field day to its fullest extent. We need to ask for volunteers at the membership meeting. The State official Observer sent a email to Pancho about the clubs' 2 meter net preamble. He wants the wording to be changed to comply will FCC part 97. Pancho has changed the opening preamble to comply with his ruling.

**New Business:** There have been discussions with the Menominee Falls library people about our ability to remain in our present location for the clubs Board of Directors' meetings during 2015. Dave, KA9WXN proposed to the board that the Club have a booth at the Maker's Fair to take place in the fall of 2015. Booth space in the structure at state fair park is \$150. For that price we would get a 10 x 10 booth space. It would be easy enough to set up an antenna outside the facility, for a special event station. The LeFrog group was mentioned as a possible partner in this venture. The clubs' anniversary is in 2017. We need to start planning event stations for the entire year. Dave, KA9WXN will attempt to generate interest among the membership in forming a committee to handle planning.

**Swapfest Committee:** The Swapfest was on February 14<sup>th</sup>, 2015 this year. The club would like to promote the 10-10 international radio club. Dan or Dave are going to contact American Science and Surplus about having a table at the MRAC swapfest in 2016. Tickets were printed and advanced table sales and ticket orders were mailed the last week on January. The suggestion was made to take photos for the MRAC Facebook Page of swapfest activities. Dave DeFebo will be submitting photos for the HamChatter newsletter.

**Special Projects:** The club needs someone to take over the FM simplex contest for February of 2016. What swapfests' will the club be manning tables at during 2015? Ham radio is on the rise numbers wise, with more retirees and younger people entering the hobby, due to the influx of cheap Chinese HT Radios for sale. The club really needs PR and recruitment. Dan, N9ASA will be heading up a digital radio promotion committee effective, February 2015. The club is hosting some other radio club websites using our web page host, at a very small cost to us that will be recovered sometime in the future. Joe, N9UX has postulated about doing another balloon launch in 2016, and what hardware will be needed for APRS tracking. On April 27<sup>th</sup>, Joe, N9UX has targeted this weekend for another balloon launch. This is also the weekend of the National Balloon organization launch event. Work needs to start on the 100<sup>th</sup> anniversary celebration that falls in 2017. Dave, KA9WXN was contacted by a teacher from a school in Kenosha that would like to have a class on amateur radio in their school curriculum. The school administration is involved with the project. Our club president has offered to help the school with organization and perhaps equipment specifications. Mark, KB9RQZ has offered to suggest reading material for the school project.

Clubs throughout the country need to use the spectrum that they have been given. The 220mhz band is not used very often in the Milwaukee area. A Club calendar is a project that the Board of Directors' would like to pursue. We would like to organize meeting programs far enough in the future that a calendar of programs can be produced. [www.Bldinfourms.net](http://www.Bldinfourms.net) is the Atlantic division directors' site that shares content for club newsletters.

A motion was made to adjourn the meeting at 8:38 pm by Dave, KA9WXN seconded by Mark, KB9RQZ. Meeting adjourned at 8:41 pm. The room was returned to an organized condition as it was when the room was opened.

## The Experimenters' Bench

### Reverse-Current Circuitry Protection

Battery reversal can be fatal to portable equipment. However, numerous circuits can protect against the backward installation of batteries and other overcurrent-causing conditions. Battery-operated equipment is prone to the consequences of batteries installed backward, accidental short circuits, and other types of careless use. The effects of a reversed battery are critical.

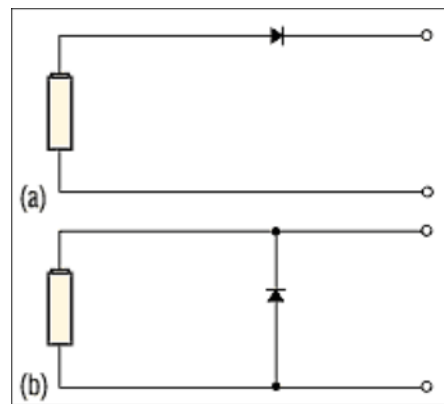
Unfortunately, it is difficult to guard against this situation. To make equipment resistant to batteries installed backward, you must design either a mechanical block to the reverse installation or an electrical safeguard that prevents ill effects when the reverse installation occurs. Mechanical protection can be a one-way connector that accepts the battery only when oriented with the correct polarity. For example, 9V radio batteries have mechanically dissimilar terminals, although a user fumbling with the mechanical connection can still momentarily make the reverse electrical connection. On the other hand, you can configure connectors for rechargeable battery packs so that momentary reverse connections are impossible unless the user modifies the connector.

The greatest challenge, however, is in applications powered by one or more single-cell batteries such as AA-alkaline, NiCad, and nickel-metal-hydride types. In general, these batteries offer no mechanical means for preventing the reversal of one or more cells. For these systems, a designer must ensure that any flow of reverse current is low enough to avoid damaging the circuit or the battery. A variety of circuits can provide this assurance.

### Diodes Provide the Simplest Protection

The simplest form of battery-reversal protection is a diode in series with the positive supply line (**Figure 1a**). The diode allows current from a correctly installed battery to flow to the load and blocks current flow to a backward-installed battery. This solution has two major drawbacks: The diode must handle the full load current, and its forward voltage drop shortens the equipment's operating time. (The regulator output is one diode drop below the battery voltage, so the regulator drops out prematurely.)

If the application calls for an alkaline or other type of battery with relatively high output impedance, you can guard against reverse installations using a parallel (shunt) diode. The circuit in **Figure 1b** is simple but far from ideal. This approach protects the load yet draws high current from the shorted battery. As before, the diode must be able to handle the high current.



**Figure 1.** The simplest protection against reversed-battery current is a series (a) or shunt (b) diode.

As an improved battery-reversal measure, you can add a pnp transistor as a high-side switch between the battery and the load (**Figure 2a**).

When you install the battery correctly, the

current-limiting resistor in the base lead forward-biases the base-emitter junction. A backward-installed battery reverse-biases the transistor, and no current can flow. This arrangement is better than the series diode, because the saturated pnp transistor offers a lower voltage drop than most diodes and thereby improves operating efficiency by lowering the power dissipation.

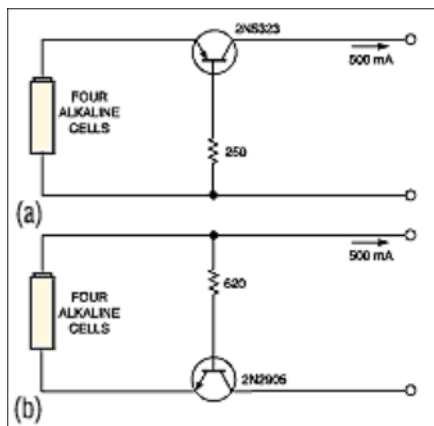
### Check for Drawbacks

The lower voltage drop of pnp transistors also extends operating time, because it allows the battery voltage to discharge to a lower level. These transistors offer low cost and a low saturation voltage, but they also have drawbacks. For instance, base current dissipates part of the battery's useful energy as  $V_{IN} \times I_B$ , and the beta (approximately 50 maximum) of most power pnp transistors demands substantial base current for a given load current.

You must design for a base current that is adequate for the combination of maximum load and minimum  $V_{IN}$ . This fixes the value of base current and then causes lower efficiency at lighter loads, unless you provide sophisticated circuitry to modulate the base current as a function of load current.



These criteria also apply to the use of an npn switch between the load and the battery return (**Figure 2b**) but with one major difference: Power npn transistors' much higher betas lower their base-current loss for a given load current.



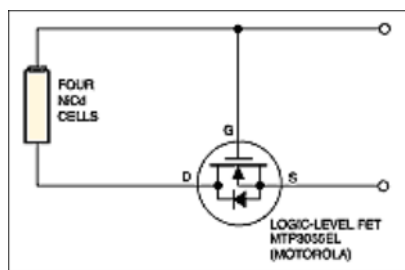
**Figure 2.** Because its forward drop is lower, a high-side pnp transistor (a) offers better reverse-current protection than does a diode. Better yet is a low-side npn transistor (b) whose higher beta means a lower base current and lower power loss.

## Replace Bipolar Transistors with MOSFETs

For a given load current, the low resistance of a fully enhanced MOSFET drops much less voltage than that of an equivalent bipolar transistor. The result is lower power dissipation, which enables the MOSFET to handle much higher load currents than are possible with a bipolar transistor of the same size. This advantage has led to the manufacture of n- and p-channel, logic-level MOSFETs for operation at 5V and 3V and even lower supply voltages. NMOS FETs include the Motorola MTP-3055EL, the Harris RFD14N05L, and the Siliconix Si9410DY. Examples of PMOS FETs are the Siliconix Si9433DY and Si9434DY and the National Semiconductor NDS9435.

Pay careful attention to a MOSFET's orientation in the circuit. MOSFETs have an intrinsic body diode that conducts current under forward-bias conditions. This current flows from the drain to the source for a PMOS FET and from the source to the drain for an NMOS FET. Whether using an NMOS or a PMOS FET as a low- or high-side switch, orient the device's body diode in the direction of normal current flow.

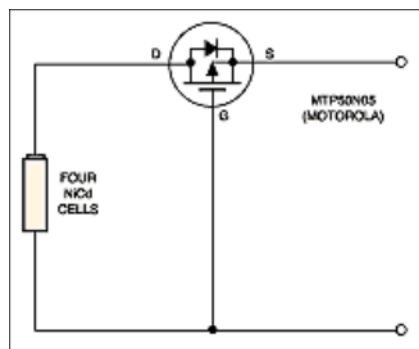
Then, a reversed battery reverse-biases the diode and blocks the flow of current. NMOS FETs are more attractive than PMOS FETs for high-current applications, because NMOS FETs offer lower on-resistance than PMOS counterparts of the same size. Because you must pull the gate voltage of an NMOS FET above the source for full enhancement, an NMOS FET belongs in the battery return path (Figure 3). Thus, if you install the battery correctly, battery voltages higher than 10V (5V for logic-level MOSFETs) fully turn on the MOSFET. Reversing the battery pulls the gate terminal low and turns off the MOSFET.



**Figure 4.** To provide reverse-current protection without disrupting ground-return currents, add a high-side NMOS FET driven by a charge-pump IC. In Figure 4, IC1 accepts battery voltages of 3.5V to 16.5V and regulates the

battery's output to (VBATT+10V). This circuit allows stand-alone, enhancement-mode, NMOS FETs to operate from battery voltages as low as 3.5V. Because the charge pump runs on the battery voltage and thus also needs protection from battery reversal, the circuit connects a diode between the battery's positive terminal and the IC's VCC terminal. PMOS FETs operate on the high side and require no extra circuitry for gate drive. However, the PMOS switch is generally twice as expensive and has nearly three times the on-resistance as an NMOS device of comparable power-handling capability operating with a similar drain-to-source voltage. You can enhance currently available PMOS transistors with 5V or even 3V of gate drive.

If your circuit's battery voltage is at least 10V, you can connect the gate of the PMOS FET directly to the battery return (**Figure 5**). As before, you must connect the transistor backward (with respect to normal practice) to orient its body diode in the direction of normal current flow. This connection applies the battery voltage between the gate and the drain, but the voltage between the gate and the source controls the channel resistance. The body diode, however, produces a source voltage one diode drop below the drain when you first apply VBATT. The result is a hard gate-source voltage equal to  $-(VBATT - V_{DIODE})$  that quickly enhances the FET, bringing the VDS drop to a desired minimum.

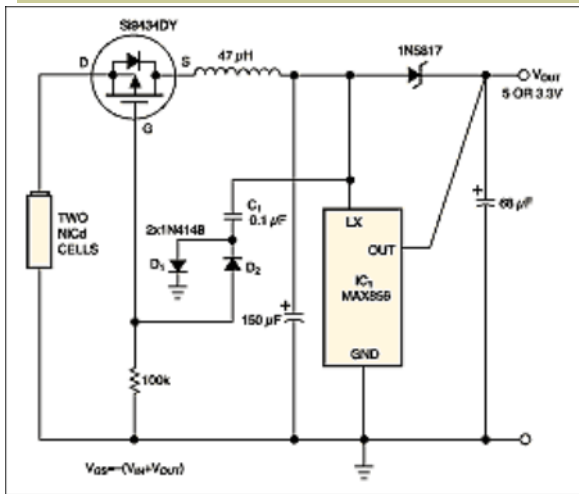


**Figure 5.** This high-side PMOS FET switch offers simple reverse-current protection in exchange for higher on-resistance and cost.

### The Challenge of Low-Battery Voltages

For battery voltages lower than 10V but higher than 2.7V, you can use a low-voltage PMOS FET, such as the Siliconix Si9433DY or Si9435DY.

Providing battery-reversal protection for battery voltages lower than 2.7V, on the other hand, can be a challenge. One solution is to use a bipolar transistor, which entails base-current losses. Another is the use of a low-threshold PMOS FET with a charge pump for driving the gate voltage below ground (**Figure 6**). This circuit can operate with 5V or 3.3V output voltages. Although specified for two-cell operation, the circuit typically starts with input voltages as low as 1.5V.

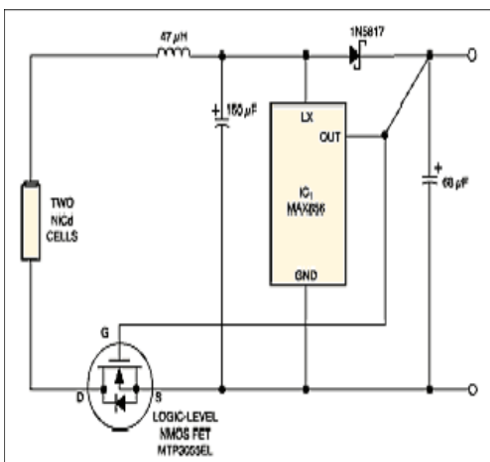


**Figure 6.** Using a high-side PMOS FET switch with low battery voltage requires a charge pump (D1, D2, and C1) to drive the gate voltage below ground. One or two battery cells don't neces-

sarily produce enough gate-source voltage to fully turn on the FET. However, the switching node of IC1's step-up DC/DC converter drives a simple charge pump, comprising C1, D1, and D2, that generates more than enough drive for that purpose. For  $V_{IN} = 2V$ , the gate drive is approximately  $-(V_{IN} + V_{OUT}) = -7V$ .

A battery reversal makes the CMOS DC/DC converter resemble a forward-biased diode; the converter turns off the switch by hauling the gate voltage at least one diode drop above the source. The 100-kilohm pulldown resistor discharges the gate capacitance within 140msec yet loads the charge pump lightly and offers no interference with enhancing the MOSFET. Again, the circuit connects the MOSFET backward to prevent the FET's body diode from being forward-biased during a battery reversal.

You can also use an NMOS low-side switch for protection by using the DC/DC converter output to boost the gate voltage (**Figure 7**). When regulating normally, the converter (IC1) pulls the MOSFET's gate above its source. If you install the battery backward, the load resistance discharges the output-filter capacitor, which turns off the MOSFET by holding the gate and the source at the same potential.



**Figure 7.** The output of IC1's boost converter drives this low-side NMOS FET switch. On the other hand, if the load is light and you first install the battery correctly and then quickly reverse it, the output capacitor's charge holds the MOSFET on and allows reverse cur-

rent to flow through the regulator. For the components shown, this condition persists for about 100msec while the capacitor discharges through the regulator. The MOSFET then turns off and blocks current flow thereafter.

## Weather Hazard Awareness

### 2015 Tornado and Severe Weather Awareness Week

Governor Walker has proclaimed April 13-17, 2015 as Tornado and Severe Weather Awareness Week in Wisconsin. On April 16, 2015, a statewide tornado drill is planned. The National Weather Service will issue mock tornado watches and warnings. If actual severe weather occurs anywhere in the state on April 16, the tornado drill will be postponed until Friday, April 17 with the watch/warnings issued at the same time. Below are the scheduled times for the mock watches/warnings.

1:00 pm - Mock **tornado watch** for all of Wisconsin

1:10-1:15 pm - **National Weather Service Green Bay issues mock tornado warning** for Brown, Calumet, Door, Florence, Forest, Kewaunee, Langlade, Lincoln, Manitowoc, Marathon, Marinette, Menominee, Oconto, Oneida, Outagamie, Portage, Shawano, Vilas, Waupaca, Waushara, Winnebago and Wood Counties.

1:20-1:25 pm - **National Weather Service Milwaukee issues mock tornado warning** for Columbia, Dane, Dodge, Fond du Lac, Green, Green Lake, Iowa, Jefferson, Kenosha, Lafayette, Marquette, Milwaukee, Ozaukee, Racine, Rock, Sauk, Sheboygan, Walworth, Washington and Waukesha Counties.

1:30-1:35 pm - **National Weather Service La Crosse issues mock tornado warning** for Adams, Buffalo, Clark, Crawford, Grant, Jackson, Juneau, LaCrosse, Monroe, Richland, Taylor, Trempealeau and Vernon Counties.

1:40-1:45 pm - **National Weather Service Minneapolis/Chanhassen issues mock tornado warning** for Barron, Chippewa, Dunn, Eau Claire, Pepin, Pierce, Polk, Rusk and St. Croix Counties.

1:50-1:55 pm - **National Weather Service Duluth issues mock tornado warning** for Ashland, Bayfield, Burnett, Douglas, Iron, Price, Sawyer and Washburn Counties.

2:00 pm - **END OF MOCK TORNADO WATCH/WARNING DRILL**

### Basic SLC definition:

Scary-looking clouds are cloud fragments or precipitation that briefly resemble funnel clouds or tornadoes. Most scary-looking clouds located at the bottom of storm clouds. Due to hills and trees blocking your field of view, they may even appear to touch the ground. These kinds of clouds look **scary** to some people who might call them in as funnel clouds, or even tornadoes, to the 911 Dispatchers of the local Sheriff Department. This results in false funnel cloud or false tornado reports being relayed to the National Weather Service. In other cases where the scary-looking clouds are located at higher levels above the ground, the clouds are scary because they are dark or have an unusual shape or color. On occasions, even precipitation cores or rain shafts extending from cloud base down to the ground may be scary to some

people,, depending on the colors or darkness of the rain and/or nearby clouds and sky.

Combining all of these possibilities, scary-looking clouds imply to some people that bad storms or funnel clouds or tornadoes must be right around the corner. So these people call 911 Dispatchers or the NWS.

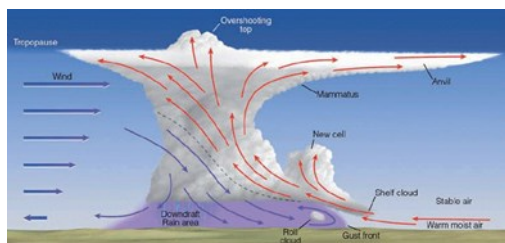
Below is an excellent example of a Scary-Looking Cloud (hint - it wasn't rotating and there was no damage).



## Science behind SLCs:

1. Most false tornado and false funnel cloud reports are associated with shelf clouds. They are a low, horizontal wedge-shaped arcus cloud, associated with

a **thunderstorm** gust front (or occasionally with a cold front, even in the absence of thunderstorms). You can view many shelf cloud pictures on the 9 pages of photographs. Unlike the roll cloud, the shelf cloud is attached to the base of the parent cloud above it (usually a thunderstorm). Rising cloud motion often can be seen in the leading (outer) part of the shelf cloud, while the underside often appears turbulent, boiling, and wind-torn. Below is an image showing shelf cloud location relative to other features.



2. Usually there is no persistent rotation on a vertical axis within shelf clouds or within individual cloud fragments that extend down-

ward from the shelf cloud, therefore cloud fragments are just another scary-looking cloud. Shelf clouds often resemble snow plows, big waves, or tsunamis, and can be very scary-looking since they are usually low-hanging. Sometimes they may found only a couple hundred feet above the ground. Scary-looking clouds are the result of abundant moisture in the atmosphere and sufficient rising motion in the column of air between the ground and the predominate cloud base. Invisible water vapor quickly condenses into a visible cloud fragment which is subsequently raised up to the shelf cloud.

There are two other phenomena that might resemble tornadoes or funnel clouds, but are not:

A) dark rain shafts, or narrow columns of heavy rain, and B) the white color of a hail shaft, a column of hail extending from the ground to the cloud base, may generate a light-dark contrast with surrounding rain, resulting in what might appear to be a funnel cloud or a tornado to the untrained eye.

3. Cloud fragments within the shelf cloud are rising into the thunderstorm base - this rising motion is referred to as an "updraft" in lines of storms. Shelf clouds can extend horizontally for many miles in length and are your visual indication that the downdraft portion of the thunderstorm

line is approaching (behind the shelf cloud, relative to the storm motion). In lines of thunderstorms the updraft is on the forward side and the downdraft is on the backside of the line. The downdraft consists of three things: gusty winds, rain, and possibly hail.

Tornadoes rarely develop under or near the shelf cloud because of the lack of persistent, organized, rotation on a vertical axis on the front side of the line of storms. However, the strongest of downdrafts are called "downbursts" which can produce hurricane-force, straight-line winds of 75 mph to over 100 mph at ground-level, torrential rains, and near-zero visibilities. The resultant damage can resemble damage associated with tornadoes!

4. Generally, if the shelf cloud and storm are rapidly moving toward you then the gusty winds in the downdraft tend to be stronger. The shelf cloud develops in response to the rain-cooled air associated with the downdraft under-cutting and rapidly lifting up lighter, warm, moist air found ahead of the line of storms. In Jerry's picture below, the scary-looking, funnel-shaped cloud was not rotating. Therefore it wasn't a true tornado. Actual tornadoes and funnel clouds rotate! If the scary-looking cloud you are looking at is not persistently rotating on a vertical axis, it's not a funnel cloud or a tornado, even if it looks like it's touching the ground or almost touching the ground!

5. Below are a couple pictures of non-rotating, scary-looking cloud fragments taken in Marathon County by Paul Nellis. Looks scary, doesn't it? The funnel-shaped appendage on the left is just **scud** associated with cool, moist, outflow air seen in the background (rain shaft). Just to the right of the center of the picture on the left you can see some smaller, disconnected scud fragments that are also low-hanging. A close up of these smaller, non-rotating fragments is found in the picture on the right. These smaller fragments might look scary to some people and they may call the 911 dispatcher to report a tornado or funnel cloud. Hopefully, you will not be that person! **Keep your emotions in check - take a deep breath and relax!**



6. So, will you be fooled by scary-looking clouds? Trained severe weather spotters understand that they have to look at the SLC feature to determine if it is actually rotating itself. They have to take a deep breath, relax, and observe for a minute or two. The name of the game is to be 100% accurate - and not be the 1st person to call or radio in the report. Of course, if they are the 1st person to call or radio in a true funnel cloud or true tornado, then more power to them! Trained severe weather spotters have been told that if they can't figure out what they are looking at, then they **shouldn't** report!



Below is another good example of a scary-looking cloud, taken by John Romadka in Dane County. What thought enters your mind when you first see such a cloud feature. Are you thinking funnel cloud or a tornado? The SLC that Jerry was looking at wasn't rotating, therefore it wasn't a funnel cloud or a tornado. It sure is scary - isn't it?



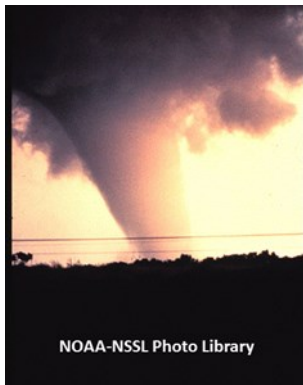
### Tornado definition:

To set the record straight, **a tornado is defined as a violently rotating column of air, extending from the cloud base to the ground.** There may

or may not be a visible condensation funnel within the tornado, nor does the condensation funnel have to "touch the ground" in order to have a tornado. In the absence of a condensation funnel, your only clue that you have a tornado is the observance of a ground-based, dirt/debris spray/swirl rotating with cloud-base rotation above.

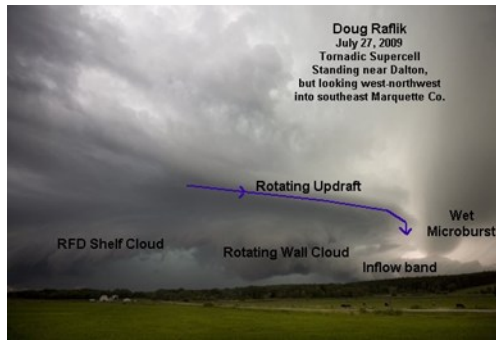
**\*\*\*Keep in mind** - tornado does not equal funnel cloud. These are two different animals within the severe weather world! Don't interchange these terms!

Pictures of two different tornadoes are shown below: the one on the left has a classic "stovepipe-funnel" shape, but the one on the right is nearly invisible, save for the rotating dirt/debris spray-swirl at ground level and cloud base rotation (rotation not discernable in a static image.).



The picture below is labeled with the names of different features typically associated with supercell thunderstorms. This is a picture of a tornadic storm. Just prior to the picture a tornado moved through southeastern Marquette County into southwest Green Lake County on July 27, 2009. There is no visible tornado in this picture. Usually, but not always, a tornado will develop underneath or very close to a rotating wall cloud. In this picture you cannot see the tornado since it is nearly invisible (you are too far away and trees are blocking your view of the ground level. To the left of the rotating wall cloud is a shelf cloud associated with the Rear Flank Downdraft (RFD) that is coming around the rotating wall cloud.

Sometimes, individual, scary-looking, cloud fragments on the bottom of a shelf cloud are called-in as funnel clouds. In the picture below - the very low, horizontal, inflow cloud band to the right of the rotating wall cloud indicates strong in-flow into the base of the storm from the right. In-flow cloud bands can be very close to the ground and also look scary.



### Funnel Cloud definition:

A funnel cloud is defined as a funnel-shaped cloud that is rotating, but is not in contact with the ground. In other words, nothing is going on at the ground level in a

true funnel cloud situation. Trained severe weather spotters know that they either have a funnel cloud or a tornado.

There is no such thing as a funnel cloud on the ground, nor is there such a thing as a tornado aloft. By the same token, tornadoes don't "touch-down", they spin up. You either have a funnel cloud or a tornado with respect to relaying severe weather reports back to the NWS. In other words - the funnel cloud isn't the tornado if you understand the drift of this discussion. A tornado may or may not have an associated condensation funnel (what you see with your eyes). That's right - you can have a tornado with no visible condensation funnel - the tornado can develop before the condensation funnel (most people still refer to the condensation funnel as the funnel cloud)!

Below is a funnel cloud picture. The funnel-shaped cloud feature was rotating, but there was no contact with the ground - no damage was observed.



# Welcome



# After a Tornado

## [Injuries](#)

## [General Safety Precautions](#)

## [Inspecting the Damage](#)

## [Safety During Clean Up](#)

## [Children's Needs](#)

Injury may result from the direct impact of a tornado, or it may occur afterward when people walk among debris and enter damaged buildings. A study of injuries after a tornado in Marion, Illinois, showed that 50 percent of the tornado-related injuries were suffered during rescue attempts, cleanup, and other post-tornado activities. Nearly a third of the injuries resulted from stepping on nails. Other common causes of injury included falling objects and heavy, rolling objects. Because tornadoes often damage power lines, gas lines, or electrical systems, there is a risk of fire, electrocution, or an explosion. Protecting yourself and your family requires promptly treating any injuries suffered during the storm and using extreme care to avoid further hazards.

## Injuries



Check for injuries. Do not attempt to move seriously injured people unless they are in immediate danger of further injury. Get medical assistance immediately. If someone has stopped

breathing, begin CPR if you are trained to do so. Stop a bleeding injury by applying direct pressure to the wound. Clean out all open wounds and cuts with soap and clean water. Apply an antibiotic ointment. Contact a doctor to find out whether more treatment is needed (such as a tetanus shot). If a wound gets red, swells, or drains, seek immediate medical attention. Have any puncture wound evaluated by a physician. If you are trapped, try to attract attention to your location.

## General Safety Precautions

Here are some safety precautions that could help you avoid injury after a tornado:

- Continue to monitor your battery-powered radio or television for emergency information.
- Be careful when entering any structure that has been damaged.
- Wear sturdy shoes or boots, long sleeves, and gloves when handling or walking on or near debris.
- Be aware of hazards from exposed nails and broken glass.
- Do not touch downed power lines or objects in contact with downed lines. Report electrical hazards to the police and the utility company.
- Use battery-powered lanterns, if possible, rather than candles to light homes without electrical power. If you use candles, make sure they are in safe holders away from curtains, paper, wood, or other flammable items. Never leave a candle burning when you are out of the room.
- Never use generators, pressure washers, grills, camp stoves, or other gasoline, propane, natural gas, or charcoal-burning devices inside your home, basement, garage, or camper—or even outside near an open window, door, or vent. Carbon monoxide (CO)—an odorless, colorless gas that can cause sudden illness and death if you breathe it—from these sources can build up in your home, garage, or camper and poison the people and animals inside. Seek prompt medical attention if you suspect CO poisoning and are feeling dizzy, light-headed, or nauseated.
- Hang up displaced telephone receivers that may have been knocked off by the tornado, but stay off the telephone, except to report an emergency.
- Cooperate fully with public safety officials.
- Respond to requests for volunteer assistance by police, fire fighters, emergency management, and relief organizations, but do not go into damaged areas unless assistance has been requested. Your presence could hamper relief efforts, and you could endanger yourself.

## Inspecting the Damage

- After a tornado, be aware of possible structural, electrical, or gas-leak hazards in your home. Contact your local city or county building inspectors for information on structural safety codes and standards. They may also offer suggestions on finding a qualified contractor to do work for you.
- In general, if you suspect any damage to your home, shut off electrical power, natural gas, and propane tanks to avoid fire, electrocution, or explosions.
- If it is dark when you are inspecting your home, use a flashlight rather than a candle or torch to avoid the risk of fire or explosion in a damaged home.
- If you see frayed wiring or sparks, or if there is an odor of something burning, you should immediately shut off the electrical system at the main circuit breaker if you have not done so already.
- If you smell gas or suspect a leak, turn off the main gas valve and leave the house immediately. Notify the gas company, the police or fire departments, or State Fire Marshal's office, and do not turn on the lights, light matches, smoke, or do anything that could cause a spark. Do not return to your house until you are told it is safe to do so.

## Safety During Clean Up

- Wear sturdy shoes or boots, long sleeves, and gloves.
- Learn proper safety procedures and operating instructions before operating any gas-powered or electric-powered saws or tools.
- Clean up spilled medicines, drugs, flammable liquids, and other potentially hazardous materials.

## Children's Needs

After a tornado, children may be afraid the storm will come back again and they will be injured or left alone. Children may even interpret disasters as punishment for real or imagined misdeeds. Explain that a tornado is a natural event.

Children will be less likely to experience prolonged fear or anxiety if they know what to expect after a tornado. Here are some suggestions:

- Talk about your own experiences with severe storms, or read aloud a book about tornadoes.
- Encourage your child to express feelings of fear. Listen carefully and show understanding.
- Offer reassurance. Tell your child that the situation is not permanent, and provide physical reassurance through time spent together and displays of affection.
- Include your child in clean-up activities. It is comforting to children to watch the household begin to return to normal and to have a job to do.

**NOTE:** Symptoms of anxiety may not appear for weeks or even months after a tornado; they can affect people of any age. If anxiety disrupts daily activities for any member of your family, seek professional assistance through a school counselor, community religious organization, your physician, or a licensed professional. Counselors are listed under Mental Health Services in the yellow pages of your telephone directory.

## Early Radio: Military Communications

### Haunting Promises

Robert C. Reed & Vicki L. Andrews

U.S. Army, 5th Special Forces Group, Detachment B-43, Chi Lang Seven Mountains of the Delta, Vietnam – 25th February 1971. The mission of this 5th Special Forces Detachment was to train Cambodian battalions for redeployment in their home country.

Sergeants William Beall and John Duboise had the routine evening patrol. They took the 3rd Cambodian Battalion out to set up the night ambush as part of a combat [training exercise](#). Beall and Duboise, along with their interpreter Puk, found a likely area facing a rice paddy dike, tree lines on both sides, and overlooking a cow path.

They set up a typical field of fire for a line ambush – the main body spread along the dike and the rear guard on the opposite side of the rice paddy.

There was only one glitch in the routine – the rear guard lost radio contact with the main body not long after they set up the ambush. This being the case, they were forced to walk back and forth across the rice paddy to use the main group's radio. It was just another ordinary night in the life of training the Cambodians in Vietnam.

The continual traffic back and forth across the paddy during the night became routine...so routine that when Sergeant Beall saw a group of soldiers coming up behind him he thought it was the usual cast of characters, that is, until he saw Puk's eyes widen in fear.

"Hey, what's wrong? What's going on?" he whispered to Puk. Puk replied incoherently and Beall turned to look for himself.

In one glance he saw that the "usual cast of characters" was actually a small column of Viet Cong clad in black pajamas, humping brown knapsacks and carrying AK-47s. He knew immediately that the crap was about to hit the proverbial fan.

The VC also realized that they had gotten caught "half stepping". Thinking they had walked into the kill zone of an ambush, they began to respond. The second line squatted down, forcing Beall to instinctively grab for his weapon. At the same time, Duboise, who had been drinking from his canteen, turned around to see what all the commotion was about. That was when the VC opened fire on full automatic and sprayed lead across Beall, Puk and Duboise.

Beall's body was shaking and jerking from the impact of the rounds hitting him. Duboise was down and critically wounded, while Puk lay dying to one side. The Cambodian soldiers laying in ambush facing the wrong direction were thrown into utter chaos with their leaders down and on one around to tell them what to do. In spite of the seriousness of his wounds, Sergeant Beall struggled to the radio and made a call for help.

The distress call was received by the duty NCO at the commo bunker. The camp was alerted and jerked into action, only to discover that there was no response to their appeal for air support. With nothing immediately available, the frustration wait began.

The wait was more than frustrating for Beall and Duboise lying wounded out in the rice paddy. Fortunately for them the VC had made good their escape during the confusion of the contact. As the two men lay there trying to keep each other going, they talked about the seriousness of their wounds and determined that ...."this was it – the end". Duboise wished for a final chance to say things to his mum that he had put off in the past, and Beall wished desperately for a radio reply from Chi Lang.

Finally, two Marine Huey gunships answered the urgent request for help. Fully loaded with their usual complement of weaponry, the two aircraft touched down at the SF base. In order to perform the rescue the rocket pods and mini-guns had to be removed to reduce the weight of the payload and to make room for the wounded soldiers.

The crew chief, not really comfortable with this disarmament, was relieved when the M60s were left on board. Captain Purdy and myself, Sergeant Robert Reed, were standing by. Captain Purdy had volunteered to go in on the extraction of Beall and Duboise to use his expertise to assess command and control problems on the ground. I, as a 91B4S, Medical Specialist, was going along to evaluate and treat the medical conditions of the wounded. Before we left the camp commander gave us a specific order, "Do NOT stay on the ground".

Back at the ambush site, the two wounded NCOs heard the crackle of the radio and realized that help was on the way. Their immediate thought was, "Well, at least our bodies will be extracted and sent back to the States". Fortunately, they were able to retrieve and secure their hand-held strobe lights and maneuvered them into position on their chests pointing skyward.

When we reached the site of the fire-fight the pilots were able to locate the flashing strobe lights to pinpoint the location of the wounded Americans. One of them turned to us and hollered, "Make the pick-up quick. Any sign of problems and we're out of here!"

We could see the flashing beacons blinking brightly in the clear, dark night, but they were accompanied by trails of red tracer rounds intermittently piercing the gloom. The distress call had indicated "urgency" but there had been no mention of a "hot" LZ.

The two converted gunships landed approximately 150 meters from the spot where Duboise and Beall lay wounded. I leaped out and sprinted across the paddy heading for Duboise while Purdy made his way over to Beall. My adrenaline was pumping madly through my veins as I dashed through the darkness. I was carrying a 40-pound medical pack, a CAR-15, and a fully loaded BAR belt and harness system. I dropped to my knees at the side of Sergeant Duboise and quickly assessed his medical situation. The prognosis was not good. Shot through and through the abdomen with multiple rounds, it was difficult to establish the entry and exit wounds. The only thing I was sure of was that there were a lot of them. I had another problem to worry about. Duboise was significantly heavier than I was. With the difference in weight and the extent of the wounds in his abdomen, the only way I could carry him back to the waiting helicopter was with a fireman's carry.

Halfway to the chopper, my burden became almost impossible to handle. The pain was agonizing, but I knew that Duboise was suffering even more. I began to fear that the skitish Marine pilots would take off without us, which spurred me to move even faster. The sporadic gunfire continued to send rounds our way. I could occasionally hear them snapping past my head. They were so close I could taste and smell the gunpowder down the back of my throat.

Twenty meters from the helicopter my body began to give way. My legs failed me, and I fell to my knees with Duboise and the medical pack wrapped up in my arms. As I lay there gasping, two Cambodian soldiers – actually boys of 11 and 12 – appeared and assisted my in putting Duboise into the waiting Huey.

Before the door was closed, the ship was airborne, following the chopper carrying Beall. Because of the chaos of the med-evac and the frenzy on the ground, and loss of leadership, Captain Purdy elected to remain as ground commander and attempt to gain some control over the whole confused situation.

Back in the air, the pilot gave permission for me to turn on a flashlight so that I could further assess the medical situation of Sergeant Duboise. A decision had to be made as to where to take the wounded soldiers. Should they be taken back to B-43 base camp or directly to the 3rd Evac Hospital. Duboise was so seriously wounded that I didn't think he would make it to the Evac Hospital without much needed fluids. They must have been lying out there for a while because they had both lost a lot of blood. I told him over the intercom that we were to go immediately to B-43.

The B-43 team was ready and waiting when we reached their location. They quickly unloaded the two wounded men onto stretchers and rushed them into the dispensary. Under the guidance our Master Sergeant, everyone pitched in and assisted with the effort to stop the bleeding and patch the wounds.

I yelled, "Start the IV's!" We had to get these in place as soon as we got the bleeding stopped. I established an IV "Push" on Duboise quickly, but the dispensary Sergeant was having problems with getting into a vein on Beall. He yelled, "I can't do this. Let's get him on a Dustoff to the hospital!"

Knowing his veins had probably collapsed while on the table, I screamed loudly, "Do a cut-down! You need to do a cut-down."

Staff Sergeant Peter Follini bellowed for a cut-down kit, but the master sergeant said that he had dismantled them earlier because he had considered them unnecessary. Follini quickly asked a Cambodian medic to go and find a scalpel. Pushing his way to the edge of the table, Follini proceeded to do the cut-down on Beall. After the procedure was complete, a catheter was threaded into the vein and fluids were "pushed". Thank God for Follini!

The Dustoff helicopters finally arrived to transport the wounded. We rolled them out to the waiting aircraft and began to load them on board. The pilot of the Medevac shouted over the noise of the engine, "We don't have a medic on board. Sergeant Reed, you've got to come along".

The ship took off a few seconds later for the 3rd Evac Hospital just north of Can To. I rode in the back, monitoring vitals, IV flow and morphine dosage as the two wounded men continued to fight for their lives.

When we set down at the 3rd Evac, Beall was rushed immediately into surgery after I gave a quick briefing on his medical aid and condition. The severity of the wounds to Duboise required that he be taken to the 45th Evac Hospital where they had a specialist in abdominal surgery.

Duboise's vitals started to slip during the hour and a half flight to the 45th. Going forward to the cockpit, I shouted to the pilot over the roar of the straining engines, "Can you kick this thing in the ass? We're losing him!"

The roar grew louder as I knelt down and began talking to Duboise. Leaning close to his ear and rubbing his head, I repeatedly promised, "You'll be okay. I won't let anything happen to you. You're going to make it..."

I attempted to follow Duboise through the doors of the operating room, but was pulled back at the last minute by several people. They thought I might have been wounded myself, but I assured them that I wasn't. I was just a sorry sight – weary, dirty and covered with dried blood and body fluids. Whatever the reason, I was too exhausted to argue. Seconds later I collapsed into a deep sleep in the nearby hangar and never saw Duboise again.

Twenty-five years later those promises I had made to Duboise still haunted me. They quietly existed in the back of my mind, occasionally coming forward into my conscious thoughts. "What happened to Duboise? Was what I did out there the right thing? Did I make the right decision in that moment of crisis?" I never knew how to go about getting in contact with Duboise, if he survived his wounds. We hadn't been close buddies in Nam, just a couple of guys stationed together. One thing about time, though...time brings progress.

On 8th August 1996 my companion and cohabitant, Vicki Andrews, was viewing e-mail on her home computer when I asked her if there was any way to find people over the internet.

"Of course," she said...and that started my search. She contacted people using e-mail, news groups and the World Wide Web. She posted a message on a military bulletin board and then tried searching a database of U.S. telephone directories. That did it! She was able to locate nine people named John Duboise. I had some clues in my hand – addresses and telephone numbers. It was a start.

The second call I made was to the only John D. Duboise (I knew the middle initial was "D" from the military orders I had) on the list. I think my first statement was, "Are you the John Duboise who served in Special Forces and wounded at Chi Lang, B-43?" There was a long, silent pause. Then he said, "Yes." "Well, I'm Robert Reed and I carried you out that night!"

The silence was longer this time. There was a crack in both our voices as we tried to express our feelings at the same time. As the words tumbled out of my mouth, my emotions cut loose, welling up in my eyes. My heart was in my throat.

He was surprised and very emotionally touched by my call. He told me that he had also been haunted by my words and his memories of that night for over 25 years. In fact, he had just thought about this incident a week before my call. He had as much desire to learn about the person who rubbed his head and gave him comfort and assurance as I did to learn about his well-being.

We know that we have to meet in person sometime soon. Through Duboise I learned of Beall and told him that I would try to look for him up on the internet as well. We found the listing for Beall and I was able to locate him the next night on my third call.



The search process escalated and I was able to contact several more of the soldiers serving in SF Detachment B-43. Although in the early planning stages, we wanted to get together for a reunion.

## Author's note:

The preceding story was a collection of my memories and conversations with Sergeants Duboise, Beall and Follini. A big "thank you" goes to Sergeant Gary Wilkes for maintaining a journal about his experiences and providing me with the exact date of this incident. If you have personal knowledge of this incident and have not been contacted by me, please do so.



## ARRL Bulletin 12 ARLB012 From ARRL Headquarters Newington CT March 9, 2015 To all radio amateurs

SB QST ARL ARLB012  
**ARLB012 W1AW 2015 Spring/Summer Operating Schedule**

### Morning Schedule:

Time	Mode	Days
1300 UTC (9 AM ET)	CWs	Wed, Fri
1300 UTC (9 AM ET)	CWf	Tue, Thu

Daily Visitor Operating Hours:

1400 UTC to 1600 UTC - (10 AM to 12 PM ET)  
1700 UTC to 1945 UTC - (1 PM to 3:45 PM ET)

(Station closed 1600 to 1700 UTC (12 PM to 1 PM ET))

### Afternoon/Evening Schedule:

2000 UTC (4 PM ET)	CWf	Mon, Wed, Fri
2000 " "	CWs	Tue, Thu
2100 " (5 PM ET)	CWb	Daily
2200 " (6 PM ET)	DIGITAL	Daily
2300 " (7 PM ET)	CWs	Mon, Wed, Fri
2300 " "	CWf	Tue, Thu
0000 " (8 PM ET)	CWb	Daily
0100 " (9 PM ET)	DIGITAL	Daily
0145 " (9:45 PM ET)	VOICE	Daily
0200 " (10 PM ET)	CWf	Mon, Wed, Fri
0200 " "	CWs	Tue, Thu
0300 " (11 PM ET)	CWb	Daily

## Frequencies (MHz)

CW: 1.8025 3.5815 7.0475 14.0475 18.0975 21.0675  
28.0675 147.555  
DIGITAL: - 3.5975 7.095 14.095 18.1025 21.095 28.095  
147.555  
VOICE: 1.855 3.990 7.290 14.290 18.160 21.390  
28.590 147.555

Notes:

CWs = Morse Code practice (slow) = 5, 7.5, 10, 13 and 15  
WPM CWf = Morse Code practice (fast) = 35, 30, 25, 20, 15,  
13 and 10 WPM CWb = Morse Code Bulletins = 18 WPM

CW frequencies include code practices, Qualifying Runs and CW bulletins.

DIGITAL = BAUDOT (45.45 baud), BPSK31 and MFSK16 in a revolving schedule.

Code practice texts are from QST, and the source of each practice is given at the beginning of each practice and at the beginning of alternate speeds.

On Tuesdays and Fridays at 2230 UTC (6:30 PM ET), Keplerian Elements for active amateur satellites are sent on the regular digital frequencies.

A DX bulletin replaces or is added to the regular bulletins between 0000 UTC (8 PM ET) Thursdays and 0000 UTC (8 PM ET) Fridays.

Audio from W1AW's CW code practices, and CW/digital/phone bulletins is available using EchoLink via the W1AW Conference Server named "W1AWBDCT." The CW/digital/phone audio is sent in real-time and runs concurrently with W1AW's regular transmission schedule.

All users who connect to the conference server are muted. Please note that any questions or comments about this server should not be sent via the "Text" window in EchoLink. Please direct any questions or comments to [w1aw@arri.org](mailto:w1aw@arri.org).

In a communications emergency, monitor W1AW for special bulletins as follows: Voice on the hour, Digital at 15 minutes past the hour, and CW on the half hour.

FCC licensed amateurs may operate the station from 1400 UTC to 1600 UTC (10 AM to 12 PM ET), and then from 1700 UTC to 1945 UTC (1 PM to 3:45 PM ET) Monday through Friday. Be sure to bring your current FCC amateur license or a photocopy.

## Amateur Radio Storm Spotter Classes Coming Soon to a Location Near You

It is that time of year again where we start thinking of warmer weather and Springtime. Springtime also brings with it a chance for thunderstorms and severe weather. Severe weather storm spotter trainings have been scheduled across south-east Wisconsin with new classes being added each week. As amateur radio operators, we have had a unique ability to report severe weather events to the NWS using our communications equipment to quickly report hazardous weather events we see.

Spotter classes are for the new and seasoned amateur radio operator and can be found at [www.mke-skywarn.org/schedule.htm](http://www.mke-skywarn.org/schedule.htm).

In addition, the March MRC meeting topic will be on the repeater's Skywarn reporting procedures. Hope to see all of you at a class this year.

Gregg Schulz, W9AWX  
Training Coordinator  
Milwaukee Area Skywarn Association

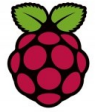
## Next Regular Meeting

The next meeting will be on Thursday, March 19th, at 7:00PM. We meet in the Fellowship Hall of Redemption Lutheran Church, 4057 N Mayfair Road. Use the south entrance. Access the MRAC Yahoo group for important details about the February Meeting.

### Meeting Schedule:

**April 30th, 2014 - 7 pm**

**Please do not call the church for information!**



## Club Nets

Please check in to our nets on Friday evenings.

Our ten meter SSB net is at **8:00 p.m. at 28.490 MHz USB**. Our two meter FM net follows at **9:00 p.m.** on our repeater at **145.390 MHz** with a minus offset and a **PL of 127.3 Hz**.

Visit our website at: [www.w9rh.org](http://www.w9rh.org)

**Or phone (414)-459-9741**

Name of Net, Frequency, Local Time	<u>Net Manager</u>
<b><u>Badger Weather Net (BWN)</u></b> 3984 kHz, 0500	<u>W9IXG</u>
<b><u>Badger Emergency Net (BEN)</u></b> 3985 kHz, 1200	<u>NX9K</u>
<b><u>Wisconsin Side Band Net (WSBN)</u></b> 3985 or 3982.5 kHz, 1700	<u>KB9KEG</u>
<b><u>Wisconsin Novice Net (WNN)</u></b> 3555 kHz, 1800	<u>KB9ROB</u>
<b><u>Wisconsin Slow Speed Net (WSSN)</u></b> 3555 kHz, Su, T, Th, F, 1830	<u>NIKSN</u>
<b><u>Wisconsin Intrastate Net - Early (WIN-E)</u></b> 3555 kHz, 1900	<u>WB9ICH</u>
<b><u>Wisconsin Intrastate Net - Late (WIN-L)</u></b> 3555 kHz, 2200	<u>W9RTP</u>
<b><u>ARES/RACES Net</u></b> 3967.0 kHz, 0800 Sunday	<u>WB9WKO</u>
* Net Control Operator needed. Contact Net Manager for information.	

Welcome!



We are Glad  
You are Here!

## Chatter Deadline

The **DEADLINE** for items to be published in the **Chatter** is the **15th of each month**. If you have anything (announcements, stories, articles, photos, projects) for the 'Chatter, please get it to me before then.

You may contact me or Submit articles and materials by e-mail at: [W9rhmrac@Gmail.com](mailto:W9rhmrac@Gmail.com)

or by Post to:

Michael B. Harris  
807 Nicholson RD  
South Milwaukee, WI 53172-1447

## VE Testing:

**March 28th, 9am—11:30am**

**April 25th, 9am—11:30am**

**No testing: June, August, or December**

**Location: Amateur Electronic Supply Time: 9:30 AM  
(Walk-ins allowed)**

**ALL testing takes place at: Amateur Electronic Supply 5720 W. Good Hope Rd. Milwaukee, WI 53223**

## Area Swapfests

**AES SuperFest March 20-22, Manufacturers Expo. Amateur Electronic Supply 5720 W. Good Hope Rd. Milwaukee, WI 53223**

**May 2nd, [ORC Spring Hamfest](#)**

**Location: [Cedarburg](#), WI Type: ARRL Hamfest**

**Sponsor: Ozaukee Radio Club**

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

## MRAC Working Committees

### 100th Anniversary:

- Dave—KA9WXN
- Dan—N9ASA

### Net Committee:

- Open

### Field Day

Dave—KA9WXN, Al—KC9IJJ

### FM Simplex Contest

- Joe - N9UX
- Mark - AB9CD

### Ticket drum and drawing

- Tom - N9UFJ

### Newsletter Editor

- Michael-KC9CMT

### Proofreader

- Pancho-KA9OFA

### Webmaster

- Dave, KA9WXN

### Refreshments

- Hal—KB9OZN



## Membership Information

The Hamateur Chatter is the newsletter of MRAC (Milwaukee Radio Amateurs' Club), a not for profit organization for the advancement of amateur radio and the maintenance of fraternalism and a high standard of conduct. MRAC Membership dues are \$17.00 per year and run on a calendar year starting January 1st. MRAC general membership meetings are normally held at 7:00PM the last Thursday of the month except for November when Thanksgiving falls on the last Thursday when the meeting moves forward 1 week to the 3rd Thursday and December, when the Christmas dinner takes the place of a regular meeting. Club Contact Information

Our website address <http://www.w9rh.org>

Telephone **(414)-459-9741**

Address correspondence to:

**MRAC, PO Box 26233, Milwaukee, WI 53226-0233**

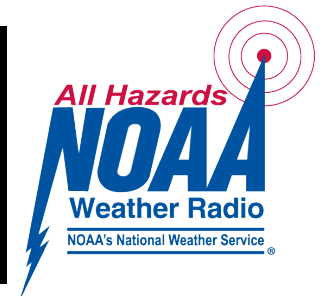
Email may be sent to: [w9rh@arrl.net](mailto:w9rh@arrl.net) . Our YAHOO newsgroup:

<http://groups.yahoo.com/group/MRAC-W9RH/>



## CLUB NETS:

- The Six Meter SSB net is Thursday at 8:00PM on 50.160 MHz USB
- Our Ten Meter SSB net is Friday at 8:00PM on 28.490 MHz  $\pm$  5 KHz USB.
- Our Two Meter FM net follows the Ten meter net at 9:00PM on our repeater at 145.390MHz - offset (PL 127.3)



**The MRAC HamChatter is a monthly publication of the Milwaukee Radio Amateurs' Club. Serving Amateur Radio in Southeastern Wisconsin & all of Milwaukee County**

**Club Call sign – W9RH**

**MRAC Website: <http://www.W9RH.org>**

**Editor: Michael B. Harris, Kc9cmt, [kc9cmt@Earthlink.net](mailto:kc9cmt@Earthlink.net)**



# AES Milwaukee Superfest 2015

## Saturday, March 21st

### 9am to 3pm

**Grand Prize: Kenwood TS-590SG**



#### Confirmed Exhibitors:

ARRL - Perfect time to join or renew your membership!, Cable X-Perts, Icom, Kenwood, Larsen Antenna, Polyphaser Radiowavz (Tentative), Timewave, Unified Microsystems, West Mountain Radio, Yaesu

#### Forums:

Public Service Communications - Matt Welch, W8DEC (Visiting from our Cleveland store and VERY active in Ohio public service communications)

Using smartphones and tablets with amateur radio equipment - West Mountain Radio

Wisconsin Association of Repeaters - Dave Schank, KA9WXN

Yaesu System Fusion - Chris Wilson, NOCSW

#### Confirmed Clubs:

SEWFARS, Sullivan Weather Amateur Radio Assoc., Milwaukee & Waukesha ARES, West Allis Amateur Radio Club, LeFrog & Ozaukee Radio Club, Milwaukee Repeater Club (MRC), Milwaukee Area Amateur Radio Associations (MAARS), Milwaukee Radio Amateur Club (MRAC), Milwaukee Area Digital Operators Group (MADOG), Wisconsin Amateur Radio Club

American Red Cross, Handi Hams, North Shore Radio Club (NSRC), Peoria Area Amateur Radio Club, Pink Hamsters

Washington County ARES, Wisconsin Amateur Radio Club, Navy Marine MARS

#### Prize Donors:

Alinco

Ham Radio Deluxe

Icom

**Kenwood - Grand Prize Donor**

Radio Oasis

Unified Microsystems

Yaesu





## Milwaukee Area Nets

Mon.8:00 PM 3.994 Tech Net

Mon.8:00 PM 146.865- ARRL Newsline

Mon.8:00 PM 146.445+ Emergency Net

Mon.8:00 PM 146.865- Walworth County ARES net

Mon. 8:00 PM 442.100+ Railroad net, also on EchoLink

Mon.8:45 PM 147.165- ARRL Audio News

Mon. 8:30 PM 442.875+ WARC net also on EchoLink 576754

Wed. 8:00 PM 147.270+ Racine County ARES net

Wed. 9:00 PM 145.130+MAARS SwapNet, Allstar FM-38

Thur. 8:00 PM 50.160, 6 Mtr SSB Net

Thur. 8:00 PM 443.800+ Tech Net

Thur. 9:00 PM 146.910+ Computer Net

Fri. 8:00 PM 28.490 MRAC W9RH 10 Mtr SSB Net

Fri. 9:00 PM 145.390+ W9RH 2 MTR. FM Net

Sat. 7:30 AM MW Classic Radio Net , Frequency—3885 AM

Sat. 8:00 PM 146.910+ YL's Pink HAMsters Net

**Mon. 8:30 PM 146.820 Waukesha ARES Net on the 1st, 3rd, and 5th Monday of each month.**

Mon. 9:00 PM 147.165- Milwaukee County ARES Net

Tue.9:00 AM 50.160 6. Mtr 2nd Shifter's Net

Tue. 9:00 PM 145.130+ MAARS Hand Shakers Net

Tue. 8:00 PM 7.035 A.F.A.R. (CW)

Wed. 8:00 PM 145.130+MAARS Amateur Radio Newsline

Wed. 8:00 PM 147.045+ West Allis ARC net

Sat. 9:00 PM 146.910+ Saturday Night Fun Net

Sun 8:00 AM, State ARES Net 3967/3977.5/145.470

Sun 8:30 AM 3.985 QCWA (Chapter 55) SSB net

Sun 9:00 AM 145.565+ X-Country Simplex Group

Sun 8:00 PM 146.910+ Information Net

Sun 8:00 PM 28.365 10/10 International Net (SSB)

Sun 9:00 PM 146.910+ Swap Net

Daily: Milwaukee — Rag Chew Net: 7:00 AM, 3850 SSB + Florida Net 7 am, 14.290 mhz.

2meter repeaters are offset by 600KHz - - 70 centimeter repeaters are offset by 5 MHz

SSB frequencies below 20 meters are LSB and for 20 Mtr and above are USB.



# ubuntu

Linux for Human Beings

Join The Tribe.