

GETTING OUT



Most experienced amateurs realize the best radio equipment is useless without a good antenna to get the signal out.

That principle also applies to other things, such as our radio club.

It is with the efforts of all members that a club functions. The members are the important "radiators" in making the club a useful addition to any community. While some members tend to lay back, others put their full faith and effort into organization, running club activities, conducting examination sessions, preparing and installing 80 foot antenna towers, participating in contests for the club, editing a newsletter, writing for a newsletter, teaching classes, participating in emergency communications services, serving as club officers, setting up public displays, running picnics, and a whole bunch of other activities, Can you help with some of these activities?

We are proud of the articles written for this issue of *Telstar*. **Don Niles, K2PMC**; and **Ken Pokigo, KC2AYK** both have contributed. It is an example of how members help produce a vibrant radio club.

This year, consider your contribution to club activity. To paraphrase John Kennedy's famous quote, "Ask not what your club can do for you, but what you can do for your club."



CLUB OFFICERS

President	Ken Pokigo, KC2AYK
Vice President	John Leitten, KA2RFT
Secretary	Mettieirene Wagner, KD2DFQ
Financial Sec'y	Judy Levan, N2TEZ
Treasurer	John Czuba, W2IV
Director (1 yr.)	Conrad Barrick, KC2WRV
Director (2 yr.)	Jon Hall, KC2QKB

Clubhouse Chair	Pat Groom, KC2VWG
Telstar Editor	Tom Dean, KA2NXY
Webmaster	(vacant — can you help??)

WE GOOFED

In the last issue, the cover showed a photo of seven people. However, the list under the picture had 8 names. **Chris Mastri, N2RLY**—Branch Relations (in the space where the Christmas tree appears) is NOT really a club officer. "

If you see something that is not correct, let us know at:

wb2elw@verizon.net

BLUE AND UNDERLINED

When you see something in TELSTAR in blue letters and underlined, that means it is an Internet link. Hold the "Control" key and click on the link to open.

Try it! → [sample link](#) (control + click)

"PROGRAM A BAOFENG" BY JOHN HASSELBACK

For this month's meeting on February 6th, the featured speaker will be **John Hasselback, WA2DRG**.

John will describe and demonstrate the **CHIRP** software that can be used to program *Baofeng* UV-5R portable radios. The software is available free, from the Internet.

If you are one of the several winners of a *Baofeng* portable during the past year or so, or if you bought one on your own,, this presentation is for you!

Feel free to bring your radio to the meeting, and get it programmed during the presentation!

STARS MEETINGS

- ★ STARS meetings are usually at 7:00 PM on the first Thursday of each month, at the Hamburg Memorial Youth Center, 200 Prospect Avenue (near Hawkins Avenue) in Hamburg.
- ★ The February meeting will be February 6th, at 7:00 PM, at the Hamburg Memorial Youth Center.
- ★ All are welcome,
- ★ The STARS board usually meets at 7:00 PM on the fourth Thursday of each month at the Nike Base Radio Clubhouse, just west of the Hamburg Town Arena, 2982 Lakeview Road, Hamburg.
- ★ The February board meeting will take place on February 27th, at the Nike Base Radio Clubhouse.
- ★ All members are welcome.

CLUB NETS

Saturdays	10:00 AM	3.925 MHz +/- QRM
Sundays	9:30 AM	28.380 MHz
Sundays	10:30 AM	147.09 MHz (repeater)
4th Saturdays	9:00 AM	Tim Hortons Cafe 342 Buffalo St, Hamburg

FROM YOUR PRESIDENT...



Fellow STARS members;

Happy New Year to all! It was a very good year in 2013 for our club. We accomplished some items that set us up for further motion in 2014. Welcome new year! We are starting out our new year with a new tower and antennas at our WB2ELW club station at the Nike base. This is a far cry from where we were last year at this time. Our deformed tower was on the ground, buried in snow. It seemed like we never would get the tower installed. Now we have a huge HF beam antenna with functional rotor. We also have a dual band 2m/440 vertical 100 feet in the air. The **STARS** club is on the move and we don't plan on stopping this year.

In order to keep things progressing the way we want, the Board of Directors spent time to develop a list of **STARS** goals and objectives for 2014. We have a vision for the club and there are several projects that will need to be completed to keep us on track. In a brainstorming session, the BOD created a list of several items altogether and then highlighted what we believe are the "must haves". This was presented at our December meeting and discussed with the membership. We then decided that some items would be grouped as projects and future individual work parties could be scheduled to achieve those goals. Some items would really be tasks that are necessary to set us up for future projects. Regardless of we call them, they are all efforts that are needed to keep our club moving forward to provide some of the best amateur radio capabilities in the area. Here is the list we all came up with grouped by major priorities:

Group 1:

- ✦ Clean clubhouse & complete clubhouse remodeling, including a clubhouse Internet connection
- ✦ Setup public WiFi at Nike Base Clubhouse
- ✦ Major fundraiser for 2014 (ex. Chinese Auction)

Group 2:

- ✦ New **STARS** website
- ✦ **STARS** article placed in *QST*
- ✦ Monthly learning programs

Extra Credit:

- ✦ Install 2m/440 beams
- ✦ **STARS** shirts
- ✦ Repeater at the clubhouse
- ✦ Other cool stuff



In addition to support from the Board of Directors, we look to the general membership for help completing these projects. Part of the fun of being in a club is working together on things that are mutually interesting. If you want to get involved in any of these projects this year, please talk to one of our club Directors and we will be glad to provide a role for you to play in helping our club achieve our **STARS** 2014 goals and objectives.

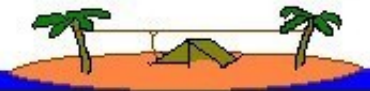
Your Pres.
Ken, KC2AYK



UP with antennas



by Don - K2PMC



Now that you all have a knowledge of impedance matching and antenna resistance and reactance, let's take a more down to earth look at antennas and how and why they work (or don't) the way they do.

A fundamental form of antenna is a wire whose length is half the transmitting wavelength. It's the unit from which many more complex forms of antennas are constructed and is known as a "dipole antenna". To calculate the length of a halfwave dipole antenna in feet:

$$\text{Length (ft)} = 468 / f(\text{Mhz})$$

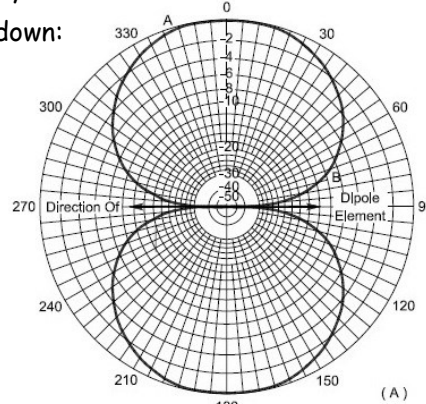
Example: A half-wave antenna for 3545 kHz (3.54 MHz) is $468/3.54 = 132$ feet. This is an 80 meter dipole. Does this mean that if your antenna is not exactly 132 feet it won't work? No, it does not. The formula for a half wave is a tool to give you an idea of the approximate antenna length for 80 meters. What if your antenna is 122 feet? What kind of reactance would it exhibit? Did you say Capacitive Reactance? If so, you're right. Does that kill your antenna? It does not, but you will have to deal with it in some way.

So now you know how to make a dipole antenna. Let's take that 80 meter dipole and analyze it.

At this point let me add a disclaimer. Antenna purists will tell you that your surroundings are going to affect your antenna's performance. And, they are right! However, after you have a good grasp of antenna theory you can delve into the myriad of extenuating factors affecting performance. To talk about them at this stage would cause your eyes to glass over and you would quickly lose interest. But, I digress...

When you put up an antenna you want to know what kind of radiation pattern it is going to generate, because this is going to dictate the points on the compass where your signal will be the strongest. A dipole antenna generates a figure 8 pattern on its fundamental

frequency. Here's what it looks like from the top looking down:



In the example above the dipole is oriented East (90°) and West (270°). This means your strongest signal will be transmitted to the North and the South. This is true for any dipole antenna, from HF, VHF, UHF, etc., with no exceptions.

How do we get your 122' antenna to act like a 132' antenna (because we need to cancel out that Capacitive Reactance)? What if we attached 5 feet of wire to each end and let them hang down? Would that work? You bet it would! Your antenna doesn't care which way the wire is pointing, it just needs a certain amount of wire to cancel out that Capacitive Reactance. Okay, then let's put 42 feet of wire 50 feet high and add 45 feet hanging down from each end. We have our 132 feet and the antenna will work, right? Well, sort of. Without getting into it you have now introduced a problem with the Resistive Component of your antenna and Capacitive Reactance rears its ugly head again. Why did that happen? Ground proximity is the culprit and it has changed the antenna from horizontal to vertical polarity. So much for that. Oh, one last thing, if you could get that contraption matched properly, it would exhibit a circular radiation pattern. Also, there would be the effect of a 50% power loss. Yeah, your 100 watts now looks like 50 when compared to the other antenna. Now that I've got your interest, I'll leave you hanging until next month.

TECHNICIAN CLASS

A class for those interested in earning their amateur technician license will begin on Saturday, February 8th, from 8 AM to 11:30 AM, at the Kiwanis Hall, 50 Legion Drive, West Seneca.

Costs: \$20 for text, \$15 for examination.

RENEWALS OVERDUE

Membership renewals for **STARS** were due on January 1st. If you have not yet done this, you may be dropped from the roster and mailing list.

Renewal applications are on the last page of the November, December, and January issues of *Telstar*.

STARS NAME BADGES

Each **STARS** member receives a name badge, to be worn at all **STARS** activities. Each year, a new expiration sticker is issued to renewing members.

If you did not get such a sticker, or have other issues with your existing badge, contact [Judy Levan, N2TEZ](#).

CLOSINGS ON WIVB-TV

Members can see if scheduled **STARS** events, such as meetings and classes, are cancelled by weather.

Watch the bottom line on channel 4 for closings, or check their website at: www.wivb.com/closings/.

WE NEED TO SUCK!

With carpeting of the Clubhouse imminent, we are in need of an upright vacuum cleaner.

If you can donate one to the club, please contact [Jon Hall, KC2QKB](#).

SONY TV AVAILABLE

A surplus 24 inch Sony Trinitron CRT television is available. It can be seen at the Nike Base Clubhouse.

If interested, bring a sealed bid (one per person) to the February 6th meeting. (Minimum bid: \$1)

TECH+ TO GENERAL

When the FCC did away with Morse Code requirements, the "Tech Plus" license was eliminated. Until then, technicians and generals took the same written exam. Only the ability to copy code at 13 WPM separated them.

In the process, Part 97 code was written to give tech plus licensees prior to March 1987 credit for element 3, the same element now required for general.

This provision was recently used by a **STARS** member to upgrade (without examination) to general.

Congratulations to **William Siska, N2GAO** on earning his general ticket!

EXTRA BOOKS

A Gordon West amateur extra text, and an ARRL amateur extra text are offered for sale for \$15 each.

If interested, contact [Pat Groom, KC2VWG](#).

HOSPITALITY CHAIR

STARS is seeking a member willing to be the hospitality chairman. Duties include arranging the coffee and goodies at the monthly membership meetings.

If you are willing to step up and get close to the "goodies", let President [Ken Pokigo, KC2AYK](#) know.

Let's Get Technical!

Effects of PIM on Radio Amateurs

By: Ken Pokigo, KC2AYK

First of all you may be asking, "what in the world is PIM"? PIM stands for passive inter-modulation. We won't have a lot of time to get into extreme detail on this but I hope to present some basic facts about PIM, its difference from other types of inter-modulation, and how it may create problems for amateur radio operators.

As a radio amateur I'm sure you're familiar with the term "inter-modulation" or "inter-modulation distortion". If you recall, inter-modulation distortion (IMD), has to do with effects of nonlinearity on RF signals. The inter-modulation between two frequency components will create additional signals at frequencies that are not just at harmonics (whole multiples), but also at the sum and difference of the original frequencies and at multiples of those sum and difference frequencies.

Inter-modulation is not desirable in radio systems. It creates unwanted spurious emissions, often in the form of sidebands which can wreak havoc by stealing bandwidth and creating adjacent channel interference. Typically we are aware of IMD when we look at RF frequency conversion and amplifier circuits all with active electronic components involved. In fact we look for "linearity" specifications of amplifiers to compare their performance capabilities. Generally speaking the more "linearity", the better the amplifier. The fact is a perfectly linear system cannot produce IMD. So we only worry about IMD being generated by "non-linear" circuits or devices. When we apply (2) signals at different frequencies through a non-linear amplifier device, we get more than we bargained for on the output side. We get the amplified carriers plus generate extra signals that could be in the same frequency band we are listening to. Even though many IMD frequencies are created, we pay most attention to the 3rd order IMD since it is the strongest in amplitude. If this is at an acceptably low level we know that the others will be too since they will only be less. As you can see in figure 1, there are IMD frequencies being generated above and below the frequencies that transmitting.

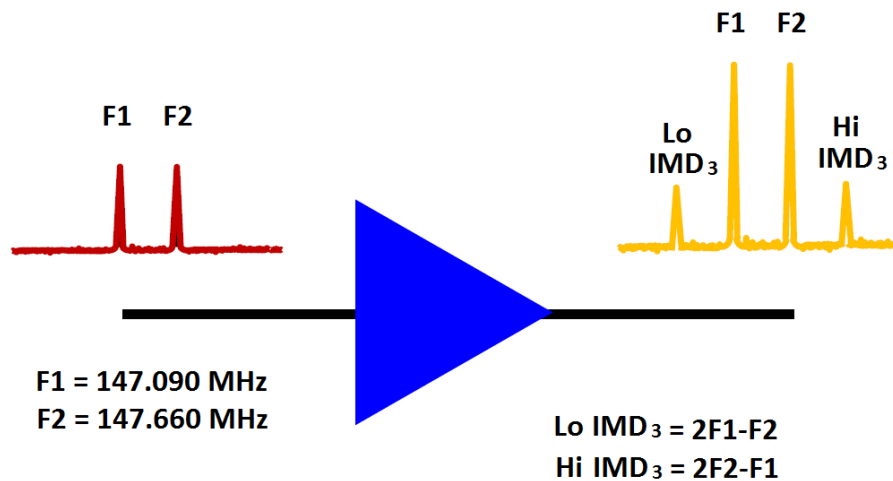


Figure 1

For example, let's say you're listening on 146.520 MHz. The WB2ELW repeater is transmitting on 147.090 MHz while someone else nearby is transmitting on 147.660 MHz. This other amateur has a poor system and is generating interference on the frequency you are listening to because 147.090 MHz will mix with his transmission and generate an inter-mod frequency on 146.520 MHz. There you have it, the very simplified description of "inter-modulation" signal products.

Here's the simple math:

$$\text{Lo IMD} = 2(147.090) - 147.660$$

$$\text{Lo IMD} = 146.520$$

$$\text{Hi IMD} = 2(147.660) - 147.090$$

$$\text{Hi IMD} = 148.230$$

(Continued on page 7)

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Effects of PIM on Radio Amateurs

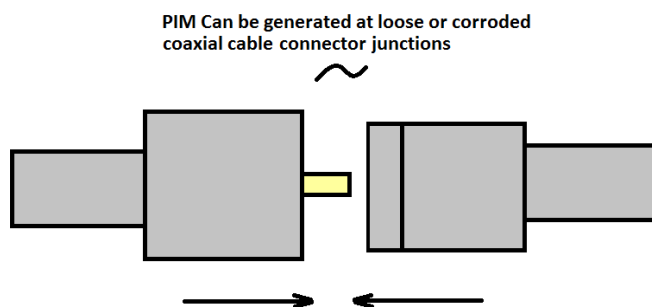
If the signal level of these spurious IMD frequencies is high enough it can interfere with a receiver tuned to one of them.

What about PIM?

You may ask, why would I be generating interfering IMD when I'm only transmitting on one frequency at a time. Good question! As an amateur you usually won't. But radio sites that have multiple transmitters can generate IMD or nearby high power stations can get together with your signal without you even knowing its happening. You may be asking, how can this be if I'm not running the other signal thru my radio system?

If you're asking this question, then great! Now we can begin to discuss and help you understand about a different type of inter-modulation - PIM.

Just like with non-linear RF active devices and circuits, passive devices can generate IMD. Passive inter-modulation or PIM is a form of IMD that occurs in passive components such as antennas, cables, connectors, or duplexers with two or more high-power input signals. It is caused by a non-linear mixing of two or more frequencies at signal path junctions and in ferrous materials. Physical features and materials can cause passive components to become mixers, modulators and frequency multipliers. Examples of such features are loose metal to metal contacts, use of ferromagnetic materials, contamination, surface oxidation, insufficiently thick metal plating or contact between dissimilar metals.



When we install our systems it is important to make sure we use good quality cables, connectors and antennas and that we follow good installation practices. Anywhere in our radio system where there is a connection point can be a generator of PIM. Cheap connectors may sound good when you are opening your wallet to pay but they may have poor plating or oxidize quicker and become a PIM generator. Splices in cables, loose connection points or joining dissimilar metal connectors may also be places to look for PIM generators. PIM is sometimes called "the rust bolt effect" which is probably now self explanatory for you. It's also sometimes called the "diode effect" because sometimes near by conductors can pick up strong RF and rectify it due to corrosion of the conductor.

Here is a list of things to keep in mind during you installation to avoid generating PIM or where to hunt down the origination of PIM interference:

- Avoid use of ferrous material where unnecessary
- Use a minimal number of contact junctions
- Make sure contact junctions are precise and maintain good contact under pressure
- Avoid use of dissimilar metals in direct contact
- Use plated surfaces on metals to avoid oxidation
- Look at anything nearby that can be a conductor, ex wire fence, other antennas, guttering etc.
- Look for badly fitted connectors, poorly fitted PL259s
- Ferrite cores can also be overloaded, becoming non-linear

Bottom line, PIM in the transmission path degrades quality of the radio communication system. It is sometimes hard to hunt down. If your installation is poor you can generate inter-modulation that affects your Amateur station or even worse, unknowingly mess up a fellow Amateur's QSO.

EXAM SITES

02/01/2014 [Jamestown](#)

Sponsor: CARS
 Location: Prendergast Library
 509 Cherry Street 2nd fl conf rm
 Time: 2:00 PM (Walk-ins allowed)

02/01/2014 [North Tonawanda](#)

Sponsor: ARA of the Tonawandas
 Location: North Tonawanda Fire Headquarters
 495 Zimmerman Street - Training Rm.
 Time: 9:30 AM (**Registration preferred**)

02/12/2014 [Niagara Falls](#)

Sponsor: Niagara Radio Club, Inc.
 Location: Venture Forthe, Inc.
 3900 Packard Road
 Time: 6:30 PM (Walk-ins allowed)

02/15/2014 [Erie PA](#)

Sponsor: Wattsburg Wireless Association
 Location: Greene Twnshp Mun Bldg Rm 114
 9333 Tate Road
 (use district justice entrance)
 Time: 9:00 AM (Walk-ins allowed)

02/15/2014 [Rochester](#)

Sponsor: Rochester ARA
 Location: RIT Gleason Engineering Bldg Rm 3139
 1 Lomb Memorial Drive
 Time: 10:00 AM (Walk-ins allowed)

02/15/2014 [Bath](#)

Sponsor: Civil Defense Center
 Location: Route 54
 Time: 3:30 PM (Walk-ins allowed)

02/19/2014 [Lyons](#)

Sponsor: Drumlins ARC
 Location: Wayne Co Office of Emergency Mgmt
 7336 State Route 31
 Time: 7:00 PM (Walk-ins allowed)

02/23/2014 [Geneseo](#)

Sponsor: Genesee Valley ARA
 Location: Livingston County Government Center
 2 Court Street Rm 205
 Time: 5:30 PM (Walk-ins allowed)

(control-click on City for more info)

TESTING NEEDS

- Legal photo ID (a driver's license is excellent!)
- Current license and/or CSCE documents, if any, and a non-returnable photocopy of each
- Federal Registration Number (FRN); if none, then Social Security Number (SSN)
- \$15 in cash, check or money order
- Two #2 pencils with erasers, and a pen

[\(more info\)](#)

VE SESSION RESULTS

STARS conducted examinations on January 18th, resulting in four upgrades and one new amateur.

David Accardi	KC2HFQ	Extra
Mark Fitzgerald	KD2FLQ	Technician
John Hasselback	WA2DRG	Extra
John Leitten	KA2RFT	Extra
William Siska	N2GAO	General

VEs included, Mark Wolf, W2MAW; Jim Starr, N2TFA; Linda Jablonski, KC2YMM; Ed Jablonski, KC2YMN; Tomm Dean, KA2NXY; John Czuba, W2IV; and Jay Clark, KF2JY.

CONTEST CALENDAR



Start and Finish

Contest Title

Sponsor's Website

Feb 1, 0000Z - Feb 1, 2359Z	Triathlon DX Contest	www.competitions-dx.com
Feb 1, 0000Z - Feb 2, 2400Z	EPC WW PSK Contest	http://www.epcwwdx.srars.org/index.php/contest-rules.htm
Feb 1, 0000Z - Feb 2, 2400Z	Vermont QSO Party	www.ranv.org
Feb 1, 0001Z - Feb 2, 2359Z	Ten-Ten Winter Phone QSO Party	www.ten-ten.org
Feb 1, 1200Z - Feb 2, 1159Z	Black Sea Cup International	http://bscc.ucoz.ru/index/0-21
Feb 1, 1200Z - Feb 2, 1200Z	F9AA Cup, CW	www.site.urb.asso.fr/urchaut-6/om-6/131-trophee-f9aa.html
Feb 1, 1400Z - Feb 1, 2400Z	FYBO Winter QRP Field Day	www.azscqrpions.com
Feb 1, 1400Z - Feb 1, 2359Z	Minnesota QSO Party	www.w0aa.org/index.php/home
Feb 1, 1600Z - Feb 1, 1900Z	Straight Key Party	www.agcw.de
Feb 1, 1600Z - Feb 2, 0400Z	British Columbia QSO Party	www.orcadxcc.org/bcqp_rules.html
Feb 1, 1700Z - Feb 2, 2359Z	Delaware QSO Party	www.fsarc.org
Feb 1, 1800Z - Feb 2, 1759Z	XE Int'l RTTY Contest	www.rtty.fmre.mx
Feb 2, 0000Z - Feb 2, 0359Z	North American Sprint	www.ncjweb.com
Feb 3, 1600Z - See website	OK1WC Memorial Contest	www.memorial-ok1wc.cz
Feb 3, 2000Z - Feb 3, 2130Z	RSGB 80m Club Championship, SSB	www.rsgbcc.org/hf/rules/2014/r80mcc.shtml
Feb 4, 0200Z - Feb 4, 0400Z	ARS Spartan Sprint	www.arsgrp.blogspot.com
Feb 7, 0230Z - Feb 7, 0300Z	NS Weekly Sprint	www.ncccsprint.com
Feb 7, 1400Z - Feb 9, 0200Z	YL-OM Contest	www.ylrl.org
Feb 8, 0000Z - Feb 9, 2359Z	YLISSB QSO Party	www.ylssystem.org
Feb 8, 0000Z - Feb 9, 2400Z	CQ WW RTTY WPX	www.cqwxrtty.com
Feb 8, 0000Z - Feb 9, 2400Z	Worldwide EME Contest	www.dubus.org
Feb 8, 1000Z - Feb 9, 1000Z	SARL Field Day Contest	www.sarl.org.za/
Feb 8, 1100Z - Feb 8, 1300Z	Asia-Pacific Sprint	www.jsfc.org/apsprint/aprule.txt
Feb 8, 1200Z - Feb 9, 1200Z	Dutch PACC Contest	www.dutchpacc.com
Feb 8, 1200Z - Feb 9, 1200Z	KCJ Topband Contest	www.kcj-cw.com/contest/14_topstest_rules_e.pdf
Feb 8, 1200Z - Feb 9, 2359Z	Straight Key Weekend Sprintathon	www.skccgroup.com
Feb 8, 1500Z - Feb 9, 1500Z	OMISS QSO Party	www.omiss.info
Feb 8, 1600Z - Feb 9, 0400Z	New Hampshire QSO Party	www.w1wqm.org
Feb 8, 1700Z - Feb 8, 2100Z	FISTS CW Winter Sprint	www.fists.org/operating.html#sprints
Feb 8, 2100Z - Feb 9, 0100Z	RSGB - First 1.8 MHz Contest	www.rsgbcc.org
Feb 8, 2300Z - Feb 9, 2300Z	AM QSO Party	www.antiquewireless.org
Feb 9, 1400Z - Feb 10, 0800Z	Classic Exchange	www.classicexchange.org
Feb 9, 1900Z - Feb 9, 2130Z	Milwaukee FM Simplex Contest	www.w9rh.org
Feb 10, 1300Z - Feb 14, 2359Z	School Club Roundup	www.arrl.org/school-club-roundup
Feb 12, 0130Z - Feb 12, 0330Z	NAQCC Monthly QRP Sprint	http://naqcc.info
Feb 12, 1300Z - See website	CWops Monthly Mini-CWT Test	www.cwops.org/onair.html
Feb 14, 0230Z - Feb 14, 0300Z	NCCC Sprint Ladder	www.ncccsprint.com/rules.html
Feb 14, 2100Z - Feb 15, 2100Z	Russian WW PSK Contest	www.qrz.ru/contest/detail/384.html
Feb 15, 0000Z - Feb 16, 2359Z	ARRL Int'l CW DX Contest	www.arrl.org/contests
Feb 15, 0100Z - Feb 15, 0700Z	PODXS 070 Club Valentine Sprint	www.podxs070.com
Feb 15, 2000Z - Feb 15, 2200Z	Feld-Hell Bingo Sprint	www.feldhellclub.org
Feb 16, 1700Z - Feb 16, 2100Z	Maine 2m FM Simplex Challenge	www.qsl.net/ws1sm/contest.html
Feb 17, 0200Z - Feb 17, 0400Z	Run For the Bacon	www.fqgrp.org
Feb 19, 1900Z - Feb 19, 2030Z	Semi-Automatic Key Evening	www.agcw.de
Feb 21, 0230Z - Feb 21, 0300Z	NCCC Sprint Ladder	www.ncccsprint.com/rules.html
Feb 21, 2200Z - Feb 23, 2200Z	CQ WW 160 Meter SSB	www.cq160.com
Feb 22, 0600Z - Feb 23, 1800Z	REF Contest	http://concours.ref-union.org/contest
Feb 22, 0800Z - Feb 22, 1000Z	SARL Youth Day Sprint	www.sarl.org.za
Feb 22, 1300Z - Feb 23, 1300Z	UBA Contest	www.uba.be/en/hf/contest-rules
Feb 22, 1800Z - Feb 23, 0600Z	North American QSO Party RTTY	www.ncjweb.com
Feb 23, 0900Z - Feb 23, 1700Z	High Speed Club CW Contest	www.highspeedclub.org/
Feb 23, 1500Z - Feb 24, 0059Z	North Carolina QSO Party	http://rars.org/ncqsoparty
Feb 24, 0100Z - Feb 24, 0259Z	CQC Winter QSO Party	www.cqc.org
Feb 26, 1300Z - see website	CWops Mini-CWT Test	http://www.cwops.org/cwt.html












(Control + click to activate a link)



For more information on contests: <http://www.arrl.org/contest-calendar>

SPECIAL EVENT STATIONS

Full information at: <http://www.arrl.org/special-event-stations>

02/01/2014	Buddy Holly Memorial, 55th anniversary of the death of Buddy Holly.		
02/01/2014	In Loyal Memory of JY1 King Hussein of Jordan		
02/01/2014	Punxsutawney Area Amateur Radio Club. Commemorating Groudhog Day.		
02/05/2014	Washington Sportsmen Show		
02/08/2014	Celebrating the Birth and Birthplace of Thomas Edison		
02/08/2014	National Weatherman's Day Special Event Station		
02/08/2014	Valentine's Day Special Event		
02/12/2014	Remembering Tex Beneke		
02/14/2014	Green Valley Amateur Radio Club Valentine's Day Special Event		
02/15/2014	10th Annual "Freeze Your Keys"		
02/15/2014	Activating Mount Dora Lighthouse USA-1407 on the 140th Anniversary of the 1st Settlers to Mount Dora, Florida		
02/15/2014	Battle of Aberdeen		
02/15/2014	Freeze Your Acorns Off		
02/15/2014	George Washington Birthday Special Event		
02/18/2014	Anniversary of the Battle of Aberdeen		
02/21/2014	56th Annual Daytona 500 - Speedweeks 2104		
02/22/2014	69th Anniversary of the Battle for Iwo Jima		
02/22/2014	George Washington's Birthday		
02/22/2014	Rotarians on Amateur Radio End Polio Now		
02/26/2014	Snow Bird Field Day		

USEFUL INTERNET LINKS

(control + click to use link)

ARRL MAIN SITE:

<http://www.arrl.org/home>

ARRL ATLANTIC DIV.:

<http://www.atldiv.org>

CONTESTS:

<http://www.arrl.org/contest-calendar>

<http://www.hornucopia.com/contestcal/perpetualcal.php>

HAMFESTS:

<http://www.arrl.org/hamfests-and-conventions-calendar>

STARS REFLECTOR:

<http://groups.yahoo.com/group/STARS-WB2ELW/>

TELSTAR EDITOR:

wb2elw@verizon.net