



Your Assistance Needed

The Bellevue Police Department requests Bellevue Amateur Radio Club support for the following city events:

Friday, August 19: Arrows to Aerospace Bike Race from 14:30 to 20:00.

Saturday, August 20: Arrows to Aerospace Parade from 07:00 to 12:00.

Saturday, November 5: Veterans Day Parade from 07:00 to 12:00.

As in past years, support is requested to staff street closing locations for each event. More detailed information will be made available as the event dates get closer. I will provide radio cross communications between BPD and BARC. I will also be the primary contact for each event.

On behalf of BPD, thank you for BARC's continuing support of our city events.

Please contact me if you have any questions.

George Bellairs, KB0ZZT
Official Observer, Nebraska Section
Bellevue Police Dept Viper 2
E-Mail: kb0zzt@usa.net
Voice & Text: 402-677-2330

Young Ham Wins First-Place Science Fair Trophy with Mag Loop Antenna Entry

(from ARRL)

A 10-year-old ARRL member from Snoqualmie, Washington, took first place in his grade and division for a magnetic loop antenna project he entered

into the Washington State Science and Engineering Fair (WSSEF). Dragan Tuip, KG7OQT, was among the more than 700 presenters at the fair, held April 1-2 in Bremerton. A 5th grade student at Yellow Wood Academy in Mercer Island, his project, "Modular HF Mag Loop Antenna," stemmed from his desire for a compact antenna to use in his room with his HF transceiver — a flea market bargain. According to his dad, Martin Tuip, KG7HAX, Dragan built the antenna himself and successfully tested by making JT65 contacts with Japan and Georgia. The 59th annual WSSEF marked Dragan's science fair debut.



"When they called my name during the award ceremony, I was stunned! I was amazed!" he told ARRL. "I learned that not everything is always the best, and some things still have room for improvement. I had several people already ask me if they could buy the antenna." One of his goals is to earn DXCC before

About BARC and Spark Gap

Spark Gap is the newsletter of the Bellevue Amateur Radio Club (BARC). BARC was established in 1959 and is devoted to amateur radio in the Bellevue, Nebraska, area. The latest *Spark Gap* is normally available around the first of the month. If the latest issue is not on the club's website, try **woktlycos.tripod.com/ham_radi/** For additional club information try **https://sites.google.com/site/wd0bfobararc/**

Many technical antenna items are taken from *A.R.R.L. Antenna Book*, ARRL, 1964

The club's **website** is **http://www.bellevuearc.org**. Refer to the website for membership and other information. BARC maintains a **repeater**, WØWYV, on 147.39 MHz, carrier squelch with a 131.8-Hz CTCSS output tone (no tone required for input).

The board of directors meets on the second Thursday of the month at 7:30 p.m. at the Village Inn in the Twin Creek Plaza (on the service road north of Hwy 370 between 36th and 42nd streets). All members are welcome to attend. The general **membership meeting** is held on the third Thursday of the month at 7:30 p.m. in the Masonic Lodge dining Hall, 1908 Franklin ST, Bellevue, NE (1 block north of NE Highway 370). Look for funny-looking antennas on the cars in the parking lot and come in the south door (not well marked). The December meeting is a dinner meeting, time and place to be decided.

Breakfast and Lunch Events

date/time	location	address
Mon & Wed, 11:30 a.m.	Wendy's	610 Galvin RD S, Bellevue
Sunday, 9:00 a.m.	HyVee	Shadow Lake shopping center, 72nd & NE Hwy 370
Sunday, 10:00 a.m.	Burger King	4109 Twin Creek DR, Bellevue

Use of the WØWYV Callsign

Authorization is obtained by contacting any committee member (WDØBFO) by e-mail, letter, phone, or two-way radio and providing event description and planned dates of use and bands you will operate on. Acknowledgment of this authorization will be an copy of the club license for you to operate with for your time of use (keep it on file in case you want to use it again). After the event, logs must be turned in within 30 days. The club log is in AC-Log and it will take a number of import file formats (contact WDØBFO if you require more information). If it is an ongoing activity then logs must be turned in by the last day of each month, and at that time just include a note stating continued use of the club call is necessary. The reason for all this is to control the call usage so no 2 individuals are using it on the same band same day. It can be used by different people on same day provided not same band.

Thank you all for your cooperation.

-WDØBFO

Send **correspondence** to BARC, 7518 Chandler Hills DR, Bellevue, NE 68147-2108. Submit **articles** in **.txt** or **.rtf** format to **w0kt@yahoo.com**.

he turns 11. He eventually hopes to market the antenna.

The magnetic loop design he entered into the science fair consists of a 10-foot circumference loop of LMR-400 coaxial cable with a 2-foot circumference loop of solid copper and a variable capacitor for tuning housed in a central enclosure. He reports the antenna is usable on 40, 30, 20, 17 and 15 meters with a low SWR. The antenna can handle up to about 10 W for 100 percent duty cycle modes, and up to 15 W PEP for SSB.

The need for an indoor antenna arose after his mom let it be known that she didn't want any new holes drilled in the house nor any more visible antennas. "He tried a few of the HamSticks that I have lying

around, but they were simply too big to fit," his father said. Dragan had seen some mag loop-style antennas in articles his dad had been reading and asked if something like that might fit in his room.

"I told him that that size would work, and off he went to scavenge the house for parts to build a prototype," Martin Tuip said. "We had to order a capacitor for the prototype, and he built further upon that." Dragan did all the calculations for the wire lengths involved, he said.

"He ran propagation tests using WSPR with my G5RV as reference, and the mag loop was about 80 percent as effective at a fraction of the size," Martin Tuip said. "The outer loop has to be less than 0.10 l

on the lowest design band, while the inner loop has to be 0.20 the size of the main loop.

The WSSEF awards more than \$1.8 million in scholarships as well as special awards meeting a sponsor's specific criteria. WSSEF is an all-volunteer non-profit organization dedicated to promoting science, technology, engineering and math across the state year-round. Dragan has been licensed since he was 8 and obtained his General ticket a year later. He presented on Amateur Radio at last year's Northwest Overland Expo, a large international gathering for remote expedition travel enthusiasts.

Poser

Why do dc-dc converters cause so much RF interference on shortwave bands even though their frequency is generally below 500 kHz?

The answer appears in "Poser Answer" on page 6.

Birthdays and Licenses Needing Renewal

no May birthdays reported

CALL SIGN	First	B_MONTH	B_DAY
LICENSE RENEWAL			
N0WQK	Mark	May	2
W0KT	Rick	May	1
K0GQK	Robert	Conley	6 / 18 / 2016

73, Tom, WDØBFO

DX News and Views

DX Views

Hello fellow DXers.

I had back surgery late last month which kept me off the air just long enough to miss the Heard Island contact. I do hope you got them. The positive (if there could be a positive to surgery) is that it gave me three weeks of home time off work to qso the rest of the world.

Here are some of the DX to look for coming up. Good luck. Look for my calls in the Dx spotting clusters in the spotted by list?

73 WB2UFO, Larry

DX News

HONDURAS, HR. Gerard, F2JD, is QRV as HR5/F2JD from Copan until July 13. Activity is on the HF bands using CW, SSB, and RTTY. QSL direct to F6AJA.



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OGASAWARA, JD1. Koji, JI1LET, will be QRV as JD1BOI from Chichijima Island, IOTA AS-031, from April 26 to May 6. Activity will be on 80 to 6 meters using CW, SSB, and RTTY. QSL to home call.

ALAND ISLANDS, OH0. Hans, PA0VHA, will be QRV as OH0/PA0VHA from April 25 to May 6. Activity will be on the HF bands. QSL to home call.



TURKEY, TA. A number of operators will be QRV as TC2016EXPO and TX2016ANT from April 23 to October 30 during EXPO 2016 hosted in Antalya. QSL both calls via TA4ED.

NORFOLK ISLAND, VK9N. Doug, VK4ADC, will be QRV as VK9NU from April 23 to May 2. Activity will be on 80 to 6 meters using SSB. QSL to home call.

BURKINA FASO, XT. Operators JA3IVU and JH3AEF will be QRV as XT2IVU and XT2AEF,

respectively, from April 28 to May 4. Activity will be on 80 to 6 meters using CW, SSB, and various digital modes. QSL to home calls.



9Q0/9Q1, DEM. REP. OF THE CONGO. YL Elvira, IV3FSG, will be active from two different locations in the Democratic Republic of the Congo signing 9Q0HQ/1 between April 22 and 30, and as 9Q0HQ between May 1 and 22. Activity will be on 80-10 meters using SSB, RTTY and PSK31 using 100 watts into a dipole antenna. QSL via IK3GES.

PJ7, ST. MAARTEN. Laurent, FM5BH, will be active as PJ7BH from Sint Maarten between May 1-8th. Activity will be on the HF bands but mainly on CW. QSL via his home callsign, direct or OQRS.

V3, BELIZE. Operators Andre/DL1AS, Martin/DM4IM and Erwin/DK4BX will be active as V31DL, V31IM and V31BX, respectively, from Belize between April 20 and May 20. They will also use the Belize Amateur Radio Club's (BARC) contest callsign V3V. Activity will be on 160-6 meters. QSL V3V via V31BZ. QSL all others via their home callsigns or LoTW.

9H, MALTA. Mek, SQ3RX, will be on a short holiday and active as 9H3SQ from Marsalforn, Gozo Island (EU-023) between May 13 and 19. Activity will be on 40-10 meters (possibly 80m) using CW and SSB. The equipment consists of a Kenwood TS-480SAT w/100 watts into an Inverted V on a fiberglass 10m pole. QSL via SQ3RX, direct or via the Bureau. Uploads to

LoTW and ClubLog (OQRS) after the operation (possibly during).



UP50, KAZAKHSTAN (special event). Members of the UN8LWZ Radio Club in Kostanai are now using the special callsign UP50LWZ to celebrate their club's 50th anniversary until May 7th. QSL via RW6HS direct only.

ZD7, ST. HELENA. Bill, G0VDE, will be active as ZD7VDE from St. Helena Island between May 22 and June 6. Bill mentions that he is "planning to go to St. Helena on the first commercial flights, which is expected to be on May 22.... (The only problem is that the new airport is not yet certified - this is expected to be in mid-April. If this does not happen in time I will have to delay my visit)." Activity will be on 40-10 meters using SSB, with some digital modes (RTTY and PSK31) and maybe just a little CW. Bill states, "I am staying in self-catering accommodation a couple of miles from Jamestown, on a plateau above the town with a good take-off to the W, N and E. The radios I am planning to take are FT-991 and TS-2000, with a vertical antenna and a variety of wires, dipoles and fiberglass supports." QSL via ClubLog's OQRS. For more details and updates, see: <http://www.sthelenadx.com/index.php>

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BARC Member Doings

If you participated in a ham-radio-related activity during the past month, drop a line to W0KT. This is your monthly opportunity to promote your favored activities or for a moment of fame.

144 MHz Spring Sprint

This short 2 meter contest was held during the evening of April 11. Conditions were average, but I worked only two stations, one in Beatrice, NE, on SSB, and one in St. Louis, MO, on CW.
--W0KT

Lincoln Hamfest

This event was held April 23. Many BARCers were in attendance.



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Ray, N5SEZ received the Nebraska Ham of the Year award from the ARRL at the Lincoln hamfest. Good job, Ray!



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Elmer/Mentor Day

This event was held in Washington Park on April 24.

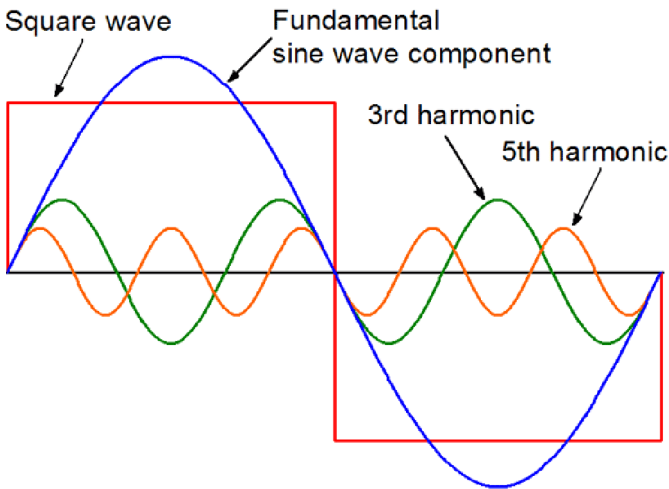
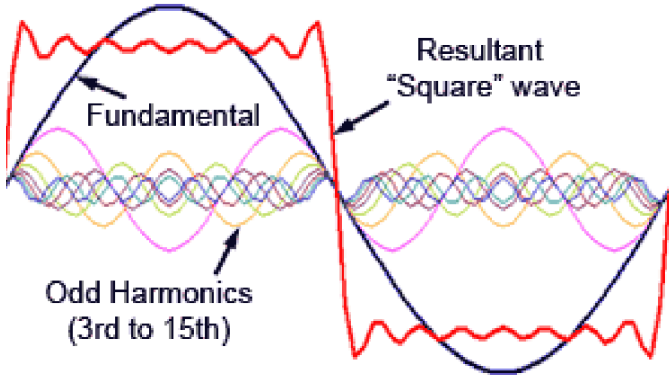


Poser Answer

Why do dc-dc converts cause so much RF interference on shortwave bands even though their frequency is generally below 500 kHz?

Non-ham electrical engineers try to get the most from the components they use. They generally don't have shortwave receivers at home, so the idea of interference due to unintentional radiation doesn't occur to them. The FCC has fairly strict Part 15 requirements for conducted radiation (through the power plug) but isn't as clear on unintentional radiated emissions. The filters which designers are required to include, work well for conducted radiation but not for RF emission.

BTW, all the radiation we're talking about is generated as a result of the waveform present in the active circuits of the power supply. Square waves and other pulses have a high harmonic content so that, say, a 100-kHz oscillator has components at 200 kHz, 300 kHz, etc.



Ham Events

If you have an event that you want to have listed, be sure to send an e-mail to the *Spark Gap*. Editor-recommended events are highlighted.

Ham Events

event type	start date	event description
hamfest	May 1	DeKalb Hamfest Sandwich, IL, Kishwaukee Amateur Radio Club - www.karc-club.org
education	May 5	license testing, LARC, Lincoln - k0kkv.org
special event	May 7	1869 Transcontinental Rail Road Golden Spike Commemorative, W7G, Ogden, UT. Ogden Amateur Radio Club - w7g.org
special event	May 7	Titan Missile Museum Special Event, WE7GV, Sahuarita, AZ. Green Valley Amateur Radio Club - gvarc.us
contest	May 7	10-10 International Spring Contest - www.ten-ten.org/index.php
contest	May 7	7th Call Area QSO Party - ws7n.net/7QP
contest	May 7	Indiana QSO Party - www.hdxcc.org/inqp/rules.html
contest	May 7	Delaware QSO Party - www.fsarc.org/qsoparty/rules.htm
contest	May 7	New England QSO Party - www.neqp.org/rules.html
board mtg	May 12	BARC board meeting - www.bellevuearc.org
education	May 14	license testing, BARC - www.bellevuearc.org
hamfest	May 14	Iowa State Convention (3900 Club Hamboree 2016), Boone, IA, 3900 Club - 3900club.com (See insert in this issue.)
special event	May 14	Jamestown Landing Day Special Event, K4RC, Williamsburg, VA. Williamsburg Area Amateur Radio Club - www.k4rc.net
contest	May 14	Arkansas QSO Party - www.arkqsoparty.com/#!/rules/c205y
contest	May 14	50 MHz Spring Sprint - sites.google.com/site/springvhfprints
club mtg	May 19	BARC general meeting - www.bellevuearc.org
special event	May 21	Joplin Tornado Memorial , W0IN, Joplin, MO. Joplin Amateur Radio Club - joplin-arc.org
special event	May 23	Indianapolis 500 (100th Running!), W9IMS, Indianapolis, IN. Indianapolis Motor Speedway Amateur Radio Club - www.qrz.com/db/w9ims
special event	May 30	100th Anniversary of Red Cross in Iowa, W0YL, Ames, IA. Story County Amateur Radio Club - www.w0yl.com
education	May 31	license testing - www.aksarbenarc.org/main/index.php/testing
education	Jun 2	license testing, LARC, Lincoln - k0kkv.org
hamfest	Jun 5	Starved Rock Radio Club/Princeton Illinois Hamfest, Princeton, IL - www.w9mks.org
board mtg	Jun 9	BARC board meeting - www.bellevuearc.org
special event	Jun 9	Judy Garland Birthday Days/Wizard of Oz, W0Z, Grand Rapids, MN. Northern Lakes Amateur Radio Club - www.northernlakesamateurradioclub.org
special event	Jun 10	80th Anniversary of Arkansas Statehood, K5A, Springdale, AR. ARKAN - The Amateur Radio Klub of the Arkansas Northwest - www.qrz.com/db/k5db
contest	Jun 11	ARRL June VHF Contest - www.arrl.org
hamfest	Jun 11	SWIARA Swap Meet, Creston, IA - www.swiara.com
club mtg	Jun 16	BARC general meeting - www.bellevuearc.org
hamfest	Jun 18	The Greater Midwest Radio Show, Hastings, NE - greatermidwestradio.org

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Ham Events

event type	start date	event description
hamfest	Jun 19	Six Meter Club of Chicago's 59th Annual Hamfest Wheaton, IL, Six Meter Club of Chicago, Antique Radio Club of Illinois, Classic Radio Net Hamboree - K9ONA.com
contest	Jun 25	ARRL Field Day - www.arrl.org
special event	Jul 2	Colonial Williamsburg Special Event, K4RC, Williamsburg, VA. Williamsburg Area Amateur Radio Club - www.k4rc.net
education	Jul 7	license testing, LARC, Lincoln - k0kkv.org
board mtg	Jul 14	BARC board meeting - www.bellevuearc.org
hamfest	Jul 16	WAARCI Hamfest Warrensburg, MO, Warrensburg Area Amateur Radio Club - waarci.org/hamfest
hamfest	Jul 16	W0MG Swap Meet, Waterloo, IA - www.w0mg.net/presentations/SwapMeet2016.pdf
hamfest	Jul 17	Zero Beaters Hamfest, Washington, MO - zerobeaters.org
club mtg	Jul 21	BARC general meeting - www.bellevuearc.org
special event	Jul 22	W0DBQ, Dubuque, IA. Great River Amateur Radio Club, operating directly from the original Field of Dreams site in Dyersville, Iowa - w0dbq.com
special event	Jul 23	NPS 100th Anniversary at Crater Lake, W7C, Crater Lake, OR. Oregon Tualatin Valley Amateur Radio Club - www.otvarc.org
education	Jul 26	license testing - www.aksarbenarc.org/main/index.php/testing
education	Aug 4	license testing, LARC, Lincoln - k0kkv.org
hamfest	Aug 7	Hamfesters 81st Annual Hamfest Peotone, IL, Hamfesters Radio Club (W9AA) - ham-ham.org
hamfest	Aug 7	Cedar Valley ARC Hamfest Cedar Rapids, IA, Cedar Valley Amateur Radio Club - www.W0GQ.org
board mtg	Aug 11	BARC board meeting - www.bellevuearc.org
education	Aug 13	license testing, BARC - www.bellevuearc.org
club mtg	Aug 18	BARC general meeting - www.bellevuearc.org
hamfest	Aug 21	Salina Hamfest / State Convention, Salina, KS - www.w0cy.org
hamfest	Aug 27	JOPLIN HAMFEST, Joplin, MO - joplinhamfest.org
education	Sep 1	license testing, LARC, Lincoln - k0kkv.org
board mtg	Sep 8	BARC board meeting - www.bellevuearc.org
contest	Sep 10	ARRL September VHF Contest - www.arrl.org
club mtg	Sep 15	BARC general meeting - www.bellevuearc.org
hamfest	Sep 17	Peoria Superfest Peoria, IL, Peoria Area Amateur Radio Club - www.w9uvi.org
education	Sep 27	license testing - www.aksarbenarc.org/main/index.php/testing
education	Oct 6	license testing, LARC, Lincoln - k0kkv.org
board mtg	Oct 13	BARC board meeting - www.bellevuearc.org
hamfest	Oct 15	SouthSide ARC Hamfest, Belton, MO - www.southsidehamfest.com
special event	Oct 16	Local Boy Scouts speak with astronauts aboard ISS at Boy Scout jamboree in Mahoney State Park, NE.
club mtg	Oct 20	BARC general meeting - www.bellevuearc.org
hamfest	Oct 29	Halloween Hamfest Kirkwood, MO, St. Louis ARC - www.halloweenhamfest.org
education	Nov 3	license testing, LARC, Lincoln - k0kkv.org
contest	Nov 5	ARRL Sweepstakes Contest CW - www.arrl.org

Ham Events

event type	start date	event description
board mtg	Nov 10	BARC board meeting - www.bellevuearc.org
education	Nov 12	license testing, BARC - www.bellevuearc.org
hamfest	Nov 12	Raytown ARC Hamfest Kansas City, MO, Raytown Amateur Radio Club - K0GQ.com
club mtg	Nov 17	BARC general meeting - www.bellevuearc.org
contest	Nov 19	ARRL Sweepstakes Contest phone - www.arrl.org
education	Nov 29	license testing - www.aksarbenarc.org/main/index.php/testing
education	Dec 1	license testing, LARC, Lincoln - k0kkv.org
club mtg	Dec 1	BARC annual meeting & Christmas party
contest	Dec 2	ARRL 160 Meter Contest - www.arrl.org
contest	Dec 17	ARRL 10 Meter Contest - www.arrl.org

April Program

There was no program.

If you want to volunteer or suggest a program, contact Wayne, KE6DZD.

May Program

The May program will be on a topic of interest to radio amateurs. If you want to volunteer or suggest a program, contact Wayne, KE6DZD.

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Hamboree 2016

Iowa State Convention

**Location: Boone County Fair Grounds, Community Building, Boone IA
1601 Industrial Park Road, Boone IA.**

When: May 14, 2016 Doors open to public @ 8 AM to 1 PM

Doors open for Vendor setup 3-9PM Friday & 7AM Saturday

Doors open for pre reg attendees Saturday at 07:30

Admittance \$5 and includes 1 raffle ticket

Table Reservation Form & Pre Registration

(for planning purposes pre-registration shuts off 5/7/16)

Name: _____ Amateur Call: _____
Street: _____ City: _____ State: _____ Zip: _____
Phone: _____ Email: _____

1-2 Tables \$10 3-5 \$7 and > 5 Tables \$5 Pre Registered. Tables \$15 at the door . Power required: Yes / No (If not marked 'No' will be assumed) Number of Tables: _____ Total Due: _____

Pre registered admission \$5 There will be a separate table for your admittance. You will get your wrist strap and raffle ticket at the door. Additional raffle tickets will be available at the Hamboree

Please make checks payable to: 3900 Club Hamboree
Mail to: 3900 Club Hamboree 2016
C/O Tom Huber WDØBFO
7518 Chandler Hills Dr.
Bellevue, NE 68147-2108

There will be a DXCC card checker from 8-10 on Saturday.
Forums and drawings throughout the day with the grand prize prior to closing. There will be a Schedule of events board in registration area

Limited outdoor tailgate area also available.

ARRL Sponsored VE Exams

Contact INFO
Clay Conard W0FS
w0fzo@cox.net
515-838-2285

More info on club website:
www.3900club.com or
wd0bfo.org

**Grand Prize: \$150
Gift Certificate**
Check website for more details
Commercial Vendors:
D&L Antenna
Radio City

Talk in on 146.850
(no tone required)

There will be food & fellowship available too.



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