



The Wave Bender

June 2011



PRESIDENT'S QST

June is here, boy how the time flies, half the year is almost over. Field Day is rapidly approaching. We need to know how many are coming, what you are bringing so we know how much food to buy. There will be a pre FD set up on June 18 at the FD site. Check with Maureen, KD8NXS so we don't end up with 10 pots of beans.

After FD, we have the Club's big event, the Tour of the Valley that is coming on July 9. We need to have as many members as we can come to work the event. If you have a portable radio with a mag-mount you might be in one of the chase cars. More information at the meeting on the 21. Also on July 19, this is the meeting night, is the Club picnic. Maureen, KD8NXS is handling this event. Should be a lot of FUN. We might have a short T-Hunt or ??

With the weather that has been happening, we need to keep our eyes to the sky. We may be called upon to help if or when anything happens. Do you have your HH charged and ready? Do you have a grab-and-go-bag ready? If you have questions about what you need to have, just ask me and I will help you get ready.

Continued page 4

FROM THE FIELD DAY DESK

May 18, 2011

Hi Everyone,

I hope that everyone has had their share of rain this year. I think the sun will be shining soon with the end of May coming up.

Speaking of the end of May, that means that Field Day is a little less than one month away. Your officers have been planning this event since the 2010 Field Day. So to start off, we will be having a dry run at noon, Saturday, June 18 to make sure we have all the equipment needed for the following weekend; to make sure all the antenna parts are there and the antennas and the radios we plan to use are working; and to stake claim to our camping spot for Field Day weekend.

The Western Reserve Amateur Radio club is inviting everyone to Field Day. That includes all our members, their families and friends. If you have a camping trailer or you have a tent, we have a lot of space for you, with a porta-potty available that weekend. It will be held in the same place it was held last year - in Canfield, 8905 Columbiana Canfield Rd. (SR46).

The Ham Radio Hobby is what you make of it for yourself and for the good of others. On June 24 around noon, we will start to set up our camping trailers. That does not mean that you must be there on Friday at noon. This year Field Day weekend is June 24-25-26. Sue and I will be there hoping to see all our club members and their families Field Day weekend.

**73 to All,
Sue KD8CGW and Steve KC8SOY
330-774-6346**



Officer's Meeting: June 19, 7:00P.M.

At the Avnet's, 2050 E. South Range Rd. New Springfield (330-549-3051)

Regular Meeting: June 21, 7:00 P.M.

Davidson's, in Cornersburgh

Program: Robert Webster KD8OXJ - Weather or Not! will be his topic.

2011 Officers

President: Al Avnet AB8AA ab8aa@arrl.net

VP: Roy Haren KD8IJF harens@juno.com

Secretary: Jane Avnet K8JAA k8jaa@arrl.net

Treasurer: John Fabry KC8SPF

jonnyjukebox@sbcglobal.net

Trustees: Ted Filmer KD8IJE efilmer@aol.com

Russ Williams KD8LDY

russellwhoknew69@aol.com

Steve Fabry KC8SOY kc8soy@yahoo.com

Social: Maureen Stein KD8NXS

mstein@zoominternet.net



**July 9
Plan to
Volunteer**

ROBERT WEBSTER - JUNE 21 SPEAKER



Weather or Not - Hot, cold, bright sun, or cloudy we always have weather. We will look at the basics that drive our weather and make it happen, sometimes in a very big way. Knowing some of the "nuts and bolts" of weather can be helpful and make it all a bit more understandable and even fun. If you're interested in learning a bit more about "fronts" (weather has no backs), pressure, how water plays a part in our weather, and how weather gets "really big" at times come join us at our meeting this month.

73, Robert KD8OXJ

ARRL IN ACTION: WHAT HAVE WE BEEN UP TO LATELY?

Compiled by ARRL News Editor S. Khrystyne Keane, K1SFA This feature is a concise monthly update of some of the things ARRL is doing on behalf of its members. This installment -- which covers the month of April -- looks at the latest with the FCC and ReconRobotics, sponsoring the Frequency Measuring Test, readying the OSCAR 1 satellite to take to the air again, reports from the Official Observer Desk and more.



+ On the Air: Space Weather Prediction Center to Discontinue Broadcasts on WWV and WWVH Beginning Tuesday, September 6, the Space Weather Prediction Center (SWPC) will cease broadcasting its geophysical alert message on WWV and WWVH. These messages inform listeners of the solar flux, the mid-latitude A and K indices and space weather storms, both current and predicted. Currently, the message is heard on minute 18 from WWV and minute 45 from WWVH. The information will still be available on the SWPC website. If you care to comment on this, or if you have any ques-

CLASSES STARTING
TECHNICIAN CLASS
SEPTEMBER 14 - TESTING OCTOBER 19
7 - 9:00+ P.M.

EXTRA CLASS
OCTOBER 26 - TESTING DECEMBER 21
7 - 9:30+ P.M.

MAHONING COUNTY EMA
700 INDUSTRIAL RD.
YOUNGSTOWN
330-549-3051

Join us for the WRARC
Friday night Net
9:00 P.M. on 145.270, PL -110.9
This is a directed net, with all interested
members taking a turn
at Net Control
Contact Steve KC8SOY to take your turn
330-774-6346

May 27 Ted KD8IJE
June 3 AL AB8AA
June 10 Darrin N8DMC
June 17 Russ KD8LDY
June 24 Field Day
July 1 Jane K8JAA
July 8 Tour of the valley
July 15 Dave KC8WY
July 22 Russ KD8LDY
July 29 ROBERT KD8OXJ

COLUMBIANA COUNTY DIGITAL NET
8:30 pm - 9:30 pm
145.510 MHZ SIMPLEX Wednesdays

First Wednesday of the Month
the Mahoning County
ARES/RACES/Skywarn training net
is held on the W8QLYrepeater
146.745 (-) at 8:30P.M.

THIS WEEK IN TECHNOLOGY
ANNOUNCES THE LAUNCH OF
"HAM NATION"
A WEEKLY HD VIDEO WEBCAST
ABOUT HAM RADIO FEATURING
INTERESTING GUESTS.
HOSTED BY BOB HEIL, K9EID.
THEY WILL COVER MANY FASCINATING ASPECTS OF
AMATEUR RADIO EACH WEEK.

SET YOUR BROWSER TO TWIT.TV LIVE
ON LEO LAPORTE'S TWIT NETWORK
TUESDAY EVENINGS AT 8:00 PM CDT (CENTRAL)

JOIN US FOR THE INITIAL EPISODE
WITH SPECIAL GUESTS
JOE WALSH, WB6ACU
AND
DAVE JENNINGS WJ6W

FCC SEEKS TO RAISE THE FEE FOR VANITY CALL SIGNS


ARRL Bulletin 13 ARLB013
 From ARRL Headquarters
 Newington CT May 5, 2011
 To all radio amateurs



The FCC released a Notice of Proposed rulemaking and Order (NPRM) on May 3, seeking to raise the fee for Amateur Radio vanity call signs. Currently, a vanity call sign costs \$13.30 and is good for 10 years.

The new fee, if the FCC plan goes through, will go up to \$14.20 for 10 years, an increase of 90 cents. The FCC is authorized by the Communications Act of 1934 (as amended) to collect vanity call sign fees to recover the costs associated with that program.

The vanity call sign regulatory fee is payable not only when applying for a new vanity call sign, but also upon renewing a vanity call sign for a new term. Instructions on how to comment on this NPRM are available on the FCC Web site at, <http://www.fcc.gov/cgb/consumerfacts/howtocomment.html>.



John Myers KD8MQ
kd8mq@arrl.net father
 lost his battle with cancer
 Friday, May 20.
 John is the president of the
 Alliance Amateur Radio Club
 and the editor of their
 newsletter, the Zero Beat.

Member Leon Loveland N8GLK's mom,
Iva Mae, 91, passed away at 3 a.m.
Saturday, May 28, 2011, at
Shepherd of the Valley Nursing
Center in Boardman.

Please join me and Al in expressing our feelings of sadness at their loss.

THE ARRL HAM AID FUND NEEDS YOUR HELP TO SUPPORT RADIO COMMUNICATIONS IN ALABAMA



05/03/2011 - The ARRL's Ham Aid Fund has been tapped to aid Amateur Radio operations in Alabama, following the wake of destructive killer tornadoes that ravaged the state last week. According to ARRL Chief Development Officer Mary Hobart, K1MMH, hams in Alabama have requested radios and antennas, since cell tower sites and repeaters have been damaged and are not yet back up. "The ARRL has already shipped five cases to the state, full of 2 meter, 440 MHz and HF radios, as well as two cases of handheld transceivers with batteries," she said. "We anticipate the demand for equipment may continue over Alabama and possibly from neighboring states."

Hobart said that she knows that not every ham can be in Alabama to help out, but every ham can support the effort -- by contributing to the ARRL's Ham Aid Fund: "First created in response to Hurricane Katrina in 2005, the Ham Aid Fund has enabled ARRL to provide vital communication equipment to devastated areas along the Gulf Coast. Now the fund is purchasing equipment to meet the needs of hams in Alabama, as well as our served agencies such as the Southern Baptist Men's Kitchen and the American Red Cross."

How can you help? Hobart said that the best way is to make a contribution of \$25, \$10 or \$5 -- or whatever you can afford. The ARRL will use your contribution to respond to the calls for assistance from Amateur Radio operators where repeaters, antennas and radios have been damaged or destroyed. "And this event may be just the beginning," she explained. "As hurricane season is on the horizon, we need to be prepared for those situations when all else fails. The easiest way to make your donation is on the ARRL website. Use the simple form and designate your contribution to the ARRL Ham Aid Fund. We'll put your gift to work right away in the affected area. On behalf of the ham community in Alabama, thank you!"

NOTICE:
 Darrin N8DMC is a Public Notary and will offer FREE notary services to our members. He can be reached at N8DMC@ARRL.NET

CONTACT WRARC ELMERS WITH YOUR QUESTIONS

Avnet, Allan AB8AA	Antennas, radio setup, mobile, grounding, classes, anything	ab8aa@arrl.net
Beatty, Dave KC8WY	anything	kc8wy@zoominternet.net
Fabry, Steve KC8SOY	Yaesu FT8900, FT8800, Mobile	kc8soy@yahoo.com
Haren, Roy KD8IJF	???	harens@juno.com
Webster, Robert KD8OXJ	erecting antennas	rwebster@mail.com
Williams, Russ LD8LDY	Electrician, tele-data, Amateur Extra	russellwhoknew69@aol.com

PRESIDENT'S QST - CONTINUED FROM PAGE 1

There are members that can help you with questions and problems. All you have to do is ask. The only dumb question is the one you do not ask!

**'Till next month.
73 Allan, AB8AA**



FCC ISSUES CITATION TO ILLINOIS COMPANY FOR ILLEGAL MARKETING OF UNAUTHORIZED RADIO FREQUENCY DEVICES

06/02/2011

On June 2, the FCC issued a Citation to Gary L. Stanford -- doing business as Spark Gap CB Shop in Lincoln, Illinois -- for "marketing in the United States unauthorized radio frequency devices and external radio frequency power amplifiers." This is in violation of section 302(b) of the Communications Act, and Sections 2.803(a)(1) (marketing of radio frequency devices prior to equipment authorization) and 2.815(b) (external radio frequency power amplifiers) of the Commission's rules.

On November 1, 2010, an agent from the FCC's Enforcement Bureau office in Chicago visited the Spark Gap CB shop in Lincoln. According to the Citation, the agent asked the clerk if the store had any amplifiers for sale. The clerk showed the agent a display case with external radio frequency power amplifiers for sale from several different manufacturers. The clerk also suggested that the agent consider purchasing a 10 meter Amateur Radio that is modified to operate on frequencies in the 11 meter Citizen's Band. The clerk also showed the agent a 10 meter Amateur Radio that was on display and operating on a Citizen's Band frequency.

The FCC advised that Spark Gap should take immediate steps to ensure that it does not import, advertise or sell such devices. If, after receipt of the Citation, Spark Gap CB violates the Communications Act or the Rules by continuing to sell these unauthorized devices, the FCC may impose monetary forfeitures of up to \$16,000 for each such violation or each day of a continuing violation, and up to \$112,500 for any single act or failure to act. In addition, violations of the Communications Act or the Rules can result in seizure of equipment through in rem forfeiture actions, as well as criminal sanctions, including imprisonment.

Spark Gap CB may respond to the Citation by July 2 either through a personal interview at the FCC office in Park Ridge, Illinois, or a written statement. Any written statement should specify what actions Spark Gap CB Shop has taken to ensure that it does not violate the Rules governing the marketing of radio frequency devices in the future.

ORIGIN OF HAM SPEAK

Origin Of HI HI

"hi hi" is the Morse equivalent of a laugh as in Morse it sounds like someone chuckling ("hehheh-hehheh hehheh"). That is ditditditdit dit dit --- or dot dot dot dot dot dot. You really have to listen to it sent in Morse to appreciate its laugh like sound. It is most commonly used in CW (Morse Code), but has carried over to voice as well. Many CW expressions have carried over to voice -- such as 73 (Best Regards) and 88 (love and Kisses), etc. The origin probably dates back before radio to the telegraph days. And since Hams used Morse long before voice became practical-- the sound of the Morse characters HI HI was used to resemble a laugh sound. In some sense it is equivalent of a smiley. It's onomatopoeic -- that is the naming of a thing or action by a vocal imitation of the sound associated with it (as buzz, hiss) The definitive answer might be found in the "Dodge's The Telegraph Instructor Manual" circa 1850 to 1900. However, I have never been able to find a copy of this document. Wish I could as it would help to see the transitions from telegraph to radio usage. So that is my best guess -- based on what old time telegraphers have told me.

Ed Note: Another use of HI HI is sending a greeting to a fellow Ham when vehicles pass -- four short horn beeps followed by two short horn beeps. Since many Hams have Ham License plates -- a fellow Ham is easily spotted as well as the seeing the mobile antennas.

ORIGIN OF JURY-RIG

jury-rig is based on one word "jury" which is a nautical sense meaning 'makeshift; temporary' and one word "rig" referring to a ship's sails and masts. The first known example of this "jury" is the compound jury-mast, 'a temporary mast put up to replace one that has been broken or lost', attested since the early seventeenth century. A jury-rig, then, is 'a temporary or makeshift rigging', and the verb is used figuratively in the sense 'to assemble or arrange hastily in a makeshift manner'. The origin of this word "jury" is not certain, but some scholars identify it with iuwere, a late Middle English word meaning 'help; aid', borrowed from the Old French ajurie.

I wondered why the baseball was getting bigger. Then it hit me.

Police were called to a day care where a three-year-old was resisting a rest.

NN8B SHACK CLEANING

items for sale if you see anything you want email me at nn8b.oh@gmail.com or nn8b@arrl.net. - all items subject to prior sale; act fast

- 1. Ten Tec Corsair II 100 watt hf rig and power supply. Rig has all filters. Rig is 9 band with 4 optional filters with manual. Great receiver. (Used filters sell for \$60 to \$75 each) \$550.00
 - 2. Ten Tec external VFO for Corsair II allows listening to 2-freqs on same band and working split w/manual. \$175.00
 - 3. Ten Tec Model 238 1500 watt tuner - needs a new elastic cord with manual. \$275.00
- 3a. Corsair II station of items 1,2, & 3 no boxes available. \$900.00**

- 4. Ten Tec Model 540 radio 5 band/100 watt all solid state with cw filter.This is a great classic rig. The first non-hybrid all solid state 100 watt rig \$150.00

- 5. Ten Tec Model 262m power supply for 540 has a mod to add voltage on meter with a switch. \$50.00

- 6. Ten Tec Model 242 remote VFO for 540 allows listening to 2 freqs on same band several lights not working on the mode selection switch \$100.00

- 7. Ten Tec Model 240, 160 meter converter for the 540 \$75.00

- 8. Ten Tec Model 244 digital readout for the 540 \$75.00

8a. 540 station of items 7,8,9,10, & 11 no boxes \$350.00

- 9. Ten Tec "Ultramatic" keyer Model KR50 matches the 540 station; no box. \$50.00

- 10. Icom IC-O2AT 2-meter HT with extra battery in near mint condition, seldom used. (New lower price) \$50.00

- 11. Heathkit HW-9 QRP rig with WARC band kit installed in near mint condition, needs tuned up; hard to find rig \$250.00

- 12. Heathkit HM-9, 5 or 50-watt meter \$50.00

- 13. Heathkit HFT-9 Antenna Tuner \$50.00

13a. Both 12 & 13 above are near mint

- 14. Heathkit SP-99 speaker has a switch added on the front. \$25.00

(Great price; if you know anything about the HW-9 you know what I mean)

- 15. Heathkit Model SA-5010 Umatic Memory Keyer in excellent condition; no box \$50.00

- 16. Logikey Model k3 memory keyer, new in box, great for contesting \$75.00

- 17. LOGIKEY CMOS III Memory Keyer kit in sturdy aluminum box \$40.00

17a HW-9 Station of items 14,15,16, & 17. \$300.00

- 18. Diamond SX-200 SWR and power meter 1.8 to 200 mhz - 200 watts excellent condition in box \$75.00

- 19. Diawa CN-410 SWR and power meter 3.5 to 150 mhz; 15/150 Watts Cross Needle Meter in excellent condition in box \$60.00

- 20. Vectronics Model Vc300d Manual Antenna Tuner, excellent condition, no box 00 watt with cross needle meter and peak reading led display \$100.00

- 21. Ldg at-100pro autotuner in excellent condition with manual, no box or cables \$125.00

- 22. Aea pk232mbx firmware v 7.122 with manuals and one cable and wall P.S., No box. In excellent condition \$75.00

- 23. Timewave PK232DSP DSP firmware 1.0.1 and Hi-lo Firmware V7.2; one cable and wall P.S. no manuals or box. In very good condition with small scratches on top cover. \$200.00
(New cost is \$519.95 at universal radio)
- 24. Icom ic-f21gm gmrs/frs hand held radio with BP-222N NI-CD battery and BP-208N Battery case for 6 alkaline batteries. Includes desk charger and wall P.S. Manual available online, no box. \$50.00

- 25. Timewave ANC-4 Noise Canceler with manual and supplied accessories. \$125.00

- 26. Icom vx-5 3 band ht with extra (new) battery and new desk charger with box and manual. VX-5 is silver and has 6 and 2 meters and UHF; with box \$150.00

- 27. Icom IC228A 2M radio; 25 watts; No mic, manual or pwr cable but it does have a box. \$40.00

- 28. Timewave DSP 9+ Audio Filter with manual \$60.00

- 29. Kenwood TM-241 50-watt 2-meter FM radio, with manual, battery recently changed. \$75.00

Telegraph keys for sale all are in the condition I received them in. I have not cleaned any of them, I'll let that up to you if you want them cleaned. Shipping is extra, if you want the key, talk to me and we'll work it out. Pics on request.

- 1. 1921 Vibroplex Original. This key has a lot of character. The Japaned base has some chips and is crazed and the pinstripe is nearly worn away. The plating is missing in a few places and is thin in many other places. The key is fully functional and is the first Model to have the current style nameplate with the bug on it. It is serial number 84260. \$90.00 shipped Pics on request.

- 2. Vibroplex Champion. Grey base. Serial Number 183242 which makes it a 1953 Model. The Champion is the less expensive version of the Lightning Bug. The action is the same. In good condition \$70.00 shipped Pics on request.

- 3. Vibroplex original. Black base. Serial Number 144636 which makes it a 1945 Model, possibly made during wartime. This key is in good condition and I am using it now. With red finger pieces \$90.00 shipped Pics on request.

- 4. J-37 military straight key, no base. It is a low profile key and is in good condition \$27.00 shipped Pics on request.

- 6. Signal electric brass key. No shorting bar and no bug lip. This one is in pretty nice condition. Does not appear to have seen much use \$27.00 shipped . Pics on request.

- 7. Signal electric brass key. No shorting bar and no bug lip. This one is in good condition, looks like it was cleaned at some time because there is some polish residue on it. The knob has a blemish on it, but is completely usable. The plating on the arm is not perfect.\$22.00 shipped Pics on request.

- 8. Signal electric brass key. No shorting bar and no bug lip. This key is in fair condition. The arm is rusty and the key needs cleaned to look nice. De-rusting the arm is not a problem. The knob is worn as though the key has seen plenty of use.-----\$22.00 shipped Pics on request.

- 9. Reeve brass key. This manufacturer is not seen very often and may be somewhat rare, it says "Reeve Electric Co. Brooklyn, NY" on the base with "Reeve" stamped in the arm. It is a Bunnell "Triumph" style key and is in very good condition. The knob has a minor chip on the edge. This key would polish up very nicely.-----\$40.00 shipped

Note: if anyone knows more about the reeve key, please let me know. Pics on request.Email me at nn8b@arrl.net

You cannot build character and courage by taking away people's initiative and independence. Abraham Lincoln

FROM THE ARRL WEB SITE -



OSCAR I and Amateur Radio Satellites: Celebrating 50 Years
Amateur Radio - 05/11/2011

1961. It was the middle of the Cold War. John F. Kennedy is inaugurated as the 35th President of the United States. The Bay of Pigs invasion fails in Cuba. The Beatles perform for the first time at the Cavern Club in Liverpool. Freedom Riders are arrested in Jackson, Mississippi for "disturbing the peace" after disembarking from their bus. Construction of the Berlin Wall begins. Roger Maris of the New York Yankees hits his 61st home run in the last game of the season, beating the 34 year old record held by Babe Ruth. Barbie gets a boyfriend when Mattel introduces the Ken doll.

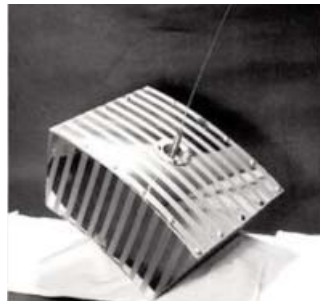
Just four years earlier, the Soviet Union had launched Sputnik I, the first human-made object to orbit the Earth, ushering in the Space Age. For the next 30 years, the Cold War rivalry between the US and the former Soviet Union focused on attaining firsts in space exploration. These were seen as necessary for national security and symbolic of technological and ideological superiority. The "space race" involved pioneering efforts to launch artificial satellites, sub-orbital and orbital human spaceflight around the Earth, as well as piloted voyages to the Moon.

1961. Mercury-Redstone 2 launches into space carrying Ham the Chimp. Soviet cosmonaut Yuri Gagarin becomes the first human in space. Alan Shepard becomes the first American in space aboard Mercury-Redstone 3. Gus Grissom, piloting the Mercury-Redstone 4 capsule Liberty Bell 7, becomes the second American to go into space. OSCAR I -- Orbiting Satellite Carrying Amateur Radio -- the very first Amateur Radio satellite, is launched into space.

Barely four months after the successful launch of Sputnik I, the United States launches the unmanned Explorer I on January 31, 1958. At about that same time, a group of hams on the West Coast - Lance Ginner, K6GSJ; Chuck Smallhouse, W6MGZ; Ed Beck, K6ZX; Al Diem; Chuck Townes, K6LFH (SK), and Nick Marshall, W6OLO (SK) -- begin toying with the idea of launching an Amateur Radio satellite into orbit and organized themselves into Project OSCAR. After a series of high level exchanges among Project OSCAR members, the ARRL and the US Air Force, a launch opportunity on a Thor DM-21 Agena-B rocket from Vandenberg Air Force Base in California was secured for the very first Amateur Radio satellite: OSCAR I. It was successfully launched into a low Earth orbit on the morning of December 12, 1961 -- four years after the launch of Sputnik I. The satellite was also the world's first non-government bird.

In 1961, more than 570 amateurs in 28 coun-

tries forwarded observations to the Project OSCAR data reduction center. Unfortunately, OSCAR I lasted only 22 days in orbit before its batteries gave out. Transmitting "HI HI" in Morse code on 145 MHz, OSCAR I ran on only 140 mW on battery power. The word "HI" was chosen over any particular call sign, since it was -- and still is -- is internationally recognized as a friendly greeting among radio amateurs.

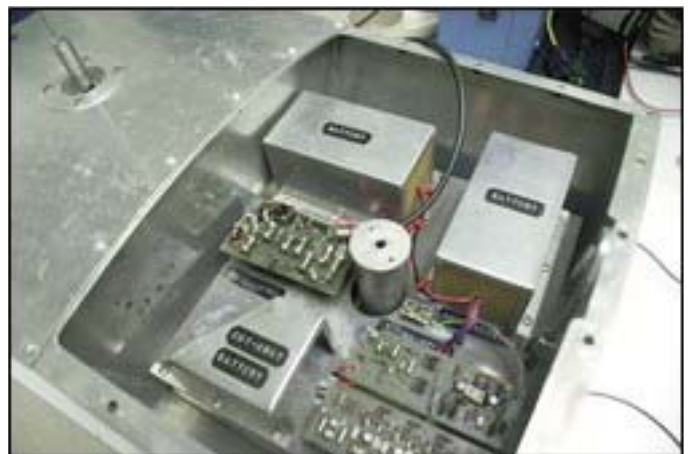


Launched into space Dec 12, 1962, OSCAR I was the first Amateur Radio Satellite - and the first non-government bird to go in to space

The satellite was built, quite literally, in the basements and garages of the Project OSCAR team. It was the first satellite to be ejected as a secondary payload from a primary launch vehicle and then enter a separate orbit. This was accomplished using a very high technology and thermally balanced ejection system: a \$1.15 spring from

Sears. The total out-of-pocket cost (not including material donations) of OSCAR I: only \$68.

OSCAR I was a 10 pound, 12"x12" package constructed mostly of magnesium, used for both its strength and because of weight requirements. The satellite was located near the tail-end of the rocket, near the engines. The satellite was tested and designed to handle nearly 50 Gs of force, the type of shock that might be encountered during launch and separation phases. The final version of OSCAR was gold-plated and had black metallic strips across its case to regulate its internal temperature. Explosive squibs and compression springs helped propel OSCAR I away from the rocket. Spring switches on the satellite released the antenna and applied power to the transmitter/keying circuits.



The inner workings of the newly functional OSCAR I satellite at ARRL Headquarters. This bird will be on display at the ARRL EXPO at Dayton Hamvention, transmitting "HI HI" just as it did from space 50 years ago.

A keyer and timer were used to generate the "HI." The speed at which "HI" was sent was based upon the internal temperature of the satellite. Two thermistors located within the craft

Continued page 7

OSCAR I - CONTINUED FROM PAGE 6

controlled the timer, and it's the temperature variations the thermistors sensed that determined the CW speed. Three 18 V batteries were placed in parallel to power the transmitter, timer and keyer. The entire unit was filled with a foam-like material to keep the internal boards immobile. Since there was no solar-cell charging system available at the time, the original designed/expected operating time for the batteries was approximately 28 days.

Fast forward 50 years to 2011. An estimated 2 billion people watch the wedding of Prince William, Duke of Cambridge and Catherine Middleton at Westminster Abbey in London. Osama bin Laden, the founder and leader of the militant Islamist group Al-Qaeda, is killed during an American military operation in Pakistan. Southern Sudan holds a referendum on independence. Egyptian President Hosni Mubarak resigns after widespread protests calling for his resignation. A 9.1-magnitude earthquake and subsequent tsunami hit the east of Japan, killing more than 14,000 and leaving another 11,000 missing. Amateur Radio celebrates the 50th anniversary of the OSCAR I launch.



ARRL Lab Test Engineer Bob Allison WB1GGM, holds a newly functional OSCAR I. The satellite is shown with its cover open to the left, making the bird appear twice as large as it actually is.

Fifty years is a long time -- and an important milestone, thought ARRL Lab Test Engineer Bob Allison, WB1GCM. And then he had a lightbulb moment: Why not take the back-up OSCAR I on display at ARRL Headquarters and make it work again? So W1AW Station Manager Joe Carcia, NJ1Q and Allison began tinkering with the satellite, one of three made by Project OSCAR. One of the satellites went up into space in 1961, one is on display at the Smithsonian Air and Space Museum in Washington, DC and the other was until recently sitting in a display case on the first floor of the HQ building in Newington.

"We really wanted to make this work again," Allison said. "So we looked in the February 1962 issue of QST that was dedicated to OSCAR I, the

first-ever Amateur Radio satellite to go into orbit. But the schematic we published didn't quite mesh up with what we were seeing when we opened up the satellite we had here at Headquarters."

According to Carcia and Allison, this could be that back in the days of the Cold War and the space race, the US military did not want the correct schematic falling into improper hands. "I tried for days, tracing components on the board and it just wasn't working," Carcia said. "So I called up Lance Ginner, K6GSJ, one of the original Project OSCAR people. He kind of laughed and said that he didn't think they would do that, but you never know."

After much trial and error, Carcia finally got OSCAR I to transmit a signal on 145 MHz, just as the original satellite did. Since specific technical literature on the satellite was unavailable, information taken from 1962 QST and CQ articles assisted in the reconstruction of the transmitter in the ARRL unit. Much care was given to salvage the original components, although time had taken its toll on most of the circuitry. As such, although the transmitter functions, the actual keying of the transmitter is performed using a PIC beacon keyer. Power is supplied using a standard wall-cube providing 12 V dc.

In honor of OSCAR I's 50th anniversary, the rebuilt satellite will be on display at the ARRL EXPO area at the Dayton Hamvention, May 20-22 at Hara Arena in Trotwood, Ohio. "We have hooked OSCAR I up to a dummy load running very low power, and as you walk by, you will hear it transmit "HI HI," just as it did 50 years ago," Allison said. "Since the transmission does not identify, you won't be able to pick it up on your handheld transceiver while at Hara. OSCAR I will be running as a Part 15 device."









"OSCAR I opened to door to the world of Amateur Radio satellite communications," Carcia explained. "Fifty years later, Amateur Radio operators continue to build and launch radio satellites that perform and function in ways the original designers could only imagine!" -- Thanks to AMSAT for some information



TESTING
WEDNESDAY, JUNE 15,
6:30 P.M. AT THE
EMA IN YOUNGSTOWN
AND
10:00A.M.
SATURDAY, JUNE 25
AND AT THE FIELD DAY SITE
8905 COLUMBIANA CANFIELD RD. (SR46)
CANFIELD, OH
FOR ANY CLASS LICENSE
CONTACT AL 330-549-3051

June 2011



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
May 29	May 30  Memorial Day	May 31	1 ARES Net 8:30 P.M. 146.745 COLUMBIANA COUNTY DIGITAL NET 8:30 pm - 9:30 pm 145.510 MHZ SIMPLEX	2	3 WRARC Net 9:00PM 145.270	4
5	6	7	8 COLUMBIANA COUNTY DIGITAL NET 8:30 pm - 9:30 pm 145.510 MHZ SIMPLEX	9 Happy Birthday K8JWA 	10 WRARC Net 9:00PM 145.270	11
12	13	14 Flag day & Eat 'N Park Boardman 8:30 A.M. Ham Breakfast 	15 WRARC Test Session EMA 6:30 P.M. Columbiana County Digital Net 8:30 pm - 9:30 pm 145.510 Mhz Simplex	16 Happy Birthday AB8AA 	17 WRARC Net 9:00PM 145.270	18 Anetnna Day @ Field Day site 8905 COLUMBIANA CANFIELD RD. (SR46) CANFIELD, OH 
19 WRARC Board Meeting 7:00P.M. Happy Fathers Day! 	20	21 WRARC Meeting 7:00P.M.	22 COLUMBIANA COUNTY DIGITAL NET 8:30 pm - 9:30 pm 145.510 MHZ SIMPLEX	23	24 WRARC Net 9:00PM 145.270 Setup for FIELD DAY	25 Test Session 10:00 A.M. FD Site 
26 	27	28 Eat'n Park Boardman 8:30 A.M. Ham Community Breakfast	20 COLUMBIANA COUNTY DIGITAL NET 8:30 pm - 9:30 pm 145.510 MHZ SIMPLEX	30	July 1 WRARC Net 9:00PM 145.270	2