

The Bolt

The Official Publication of the Ford Amateur Radio League

President's Note: June, 2008

Welcome to the June edition of the Ford Amateur Radio League newsletter. In this newsletter, we will concentrate on the upcoming Field Day Event. Please mark your calendars for the last weekend of June for our Field Day event. We will be setting up at 9am on Saturday, and the contest runs through 2pm on Sunday. We will join the Livonia Amateur Radio Club at the Livonia Firehouse on Plymouth Rd, just west of Newburgh Rd. Please join us for as much time as you are able to! Note for Ford employees: our 1 week of 4th of July vacation starts on the Monday following Field Day, so we have no excuse not to participate. (hi hi) I am planning on having our Field Day event published on the Ford Employee Recreation Association flyer and our website this month. We very well may have several new visitors, both hams and not yet hams, so please be ready to greet guests and show them what we do and how we do it. New for this year, we are looking to have our computers networked using a version of the same software we used last year. This will give us the opportunity to see how we are doing in total, and swap the stations around CW to Voice to Data as we desire to. The network runs wirelessly using WiFi, so we will not be tripping over any extra cables.

Hamvention; I succeeded in joining the men and women of the ARROW club in Ann Arbor for Dayton Hamvention bus last month. I was up before 3am, and was on the bus by 4:20am for the trip down. I did get a bit of a nap on the way down, but was awake long enough to win a door (bus) prize of an MFJ 24 hr LCD clock. That represents my first won door prize in 22 years of attending Dayton. The bus did get us to the Hamvention by 8:10am, with the flea market open but the inside still closed. The ARROW group set up a club table in the flea market, so we had a procession from the bus to the club spot for the set up. I brought along a pair of Isotron antennas to sell at the swap, so I took my place at the booth during the afternoon. The Isotron antennas had plenty of passersby stopping for a look, and a few had questions. Many have never seen them, I guess. I had presented them to the club as part of my "Stealth Antenna" presentation a few years ago. Finally, someone who had a really restricted location for antennas got interested enough in buying the antennas before they blew away in the strong wind we had on Saturday. (It was entertaining to see them catch a breeze and slide across the table) I hope he has at least as much enjoyment out of them as I did when I lived in the Condo. Since I no longer had to worry about selling the antennas, I ventured off and purchased a new 2m/70cm handitalkie radio and a few other assorted goodies. We were back on the bus at 5pm and were back in Ann Arbor a bit after 8pm. This was a very long day, but I did not have to drive. I may take the bus again in a future year, as it worked out well. My wife appreciated me being home on Sunday so we could participate in a spiritual event later that day.

I have a correction to make and two congratulations to give. My correction is that Shunsuke, whom I mentioned in last month's newsletter, has the call KD8BWD, not BWT. Congratulations to him for advancing to his General class license last month. Congratulations as well to Chuck Reti, WV8A, for joining our club at the May meeting.

73,
Dave
N8HKU
FARL Club President

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2008 Calendar of Events

- June**
- 1 Chelsea Swap, Chelsea, MI - for info contact www.wd8iel.net
 - 7 IRA Good Old Days Hamfest, Grand Rapids, MI <http://www.w8hvg.org>
 - 8 GCARC Swap-in-the-Park, Garden City, MI www.gcarc.net
 - 12 **FARL Club Meeting, EMDO, 7 PM** (Field Day Preparations)
 - 14 Midland Hamfest, Midland, MI <http://www.qsl.net/w8kea>
 - 15 Monroe Hamfest, Monroe, MI <http://www.mcrca.org>
 - 28-29 Field Day Operations, Livonia Fire Dept.
 - 28 NMARES Tailgate Swap, Elmira, MI <http://www.nmares.net>
- July** *No Club Meeting*
- August** *No Club Meeting*
- September**
- 11 **FARL Club Meeting, EMDO, 7 PM**
 - 14 Adrian ARC Swap, Adrian, MI <http://www.W8TQE.com>
 - 20 PEAC Bike Ride, Hines Park
- October**
- 9 **FARL Club Meeting, EMDO, 7 PM**
 - 12 Michigan State Convention, Kalamazoo, MI
<http://www.kalamazoohamfest.com>
- November**
- 13 **FARL Club Meeting, EMDO, 7 PM**
- December**
- 7 L'Anse Creuse Swap, Mt. Clemens, MI www.n8lc.org
 - 11 **FARL Club Meeting, EMDO, 7 PM** (FARL Christmas Party)
 - TBD Speaking With Santa, Mott Children Hospital

FARL MEETING MINUTES, MAY 8, 2008

Minutes recorded by Roger Reini, Recording Secretary

CALL TO ORDER: meeting was called to order at 7:02 PM by president Dave, N8HKU. There were 10 members and 1 guest (who subsequently became a member).

MINUTES: The minutes from the April meeting were approved as read.

TREASURER: Bill, WA8HEA, gave the treasurer's report. The major expenditure this month was for the phone line for the repeater; major income came from dues payments and the FERA winter rebate. The deposit that was questioned last month has not been removed from the club account.

DUES: They were due in April. Anyone wishing to pay them, see the treasurer, Bill, WA8HEA.

BOARD: There was an application for membership submitted by Chuck Reti, WV8A, who was attending as a guest this evening. He is currently working for TSO Broadcast Services as a contractor and so would be eligible for Associate Membership. He spoke briefly about his experiences and interests (CW, HF mobile). Rusty, N8RGI, moved that

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his application be accepted; Roger, KD8CSE, seconded. The motion passed, and Chuck was accepted as an associate member.

REPEATER: Murray, KE8UM, reported that the 220 MHz repeater and all repeater links are back in service. The problem with the 220 repeater was a loose wire on the PL board that kept it from responding to the PL tone; the problem with the links was faulty programming of the 2 meter controller. Backup power is functioning, although only for the 2 meter repeater. Estimated battery life when running on emergency power is 2 hours (duty-cycle dependent, of course), and this at a reduced output of 20 watts. There was some talk of expanding the emergency power capabilities, such as by using solar panels. Anything's possible given sufficient money, Murray said. Generators would also work, although transporting them by stairs to the top of the Hyatt would be difficult (in a power outage, the elevators would not be working).

INTRODUCTIONS: For the benefit of new member Chuck, the attendees introduced themselves. Officers also stated their positions.

CLASSES: Bill, N8OZV, is holding a new round of Technician classes at the Centennial Library on Sunday afternoons from 1 to 3. When the time comes for testing for the licenses, additional VE's will be needed, for Bill will be unable to serve as one since one of his daughters will be taking the test. Murray, KE8UM, promised to help find additional VE's. There may be a General class later in the summer if there's sufficient interest.

NEWSLETTER: Are there any volunteers to compile the June newsletter?

DAYTON HAMVENTION: Dave asked how many members were planning on attending Hamvention at least one day. At least 6 confirmed their attendance. Many will be attending all 3 days; some will take the Arrow bus from Ann Arbor. One (Roger, KD8CSE) said he would attend the 4 Days In May event put on by QRP-ARCI. Murray, KE8UM, said he planned to attend Contest University. If anyone wants to keep in touch via radio, the plan is to use the Tin Lizzy output frequency (145.27) as simplex, still with the 100 Hz PL tone. Note that there is a repeater on this frequency some 20 miles north of Dayton, but it's not always reliably received there.

CALENDAR: June will be devoted to Field Day preparations; there will be no meetings in July or August. Presentation topics are needed for the balance of the year.

FIELD DAY: Preparation discussions have begun with LARC (Livonia ARC), said Bill, WA8HEA. The plan is to operate as 2A again (2 transmitters, emergency power) with possibly operating a GOTA (Get On The Air) station. GOTA operators must be newly licensed (since last Field Day) or be considered inactive. Having a mentor or coach at the station gives bonus points. In order to count, each GOTA operator must log at least 20 contacts; any fewer, and none of them count. Several transmitters will be available from both LARC and FARL stock. 2 sets of bandpass filters are available, but a third set would be needed for the GOTA station. Also, an FM VHF rig capable of full duplex operation would really be appreciated for working satellites. With Dayton coming up, the club needs should be in mind when we're down there. Logging software: plans are to use N3FJP's Field Day software, the network-ready version. Bill, N8OZV, moved that Bill, WA8HEA, be authorized to spend up to \$20 to obtain up to 2 registered copies of the software; the motion was approved.

LINUX AND HAM RADIO: after a short break, Bill, N8OZV, gave a presentation on Linux and Amateur Radio. One of his major points was that Linux should be perfect for the amateur radio community – perfect in its open-source philosophy, its embrace of many

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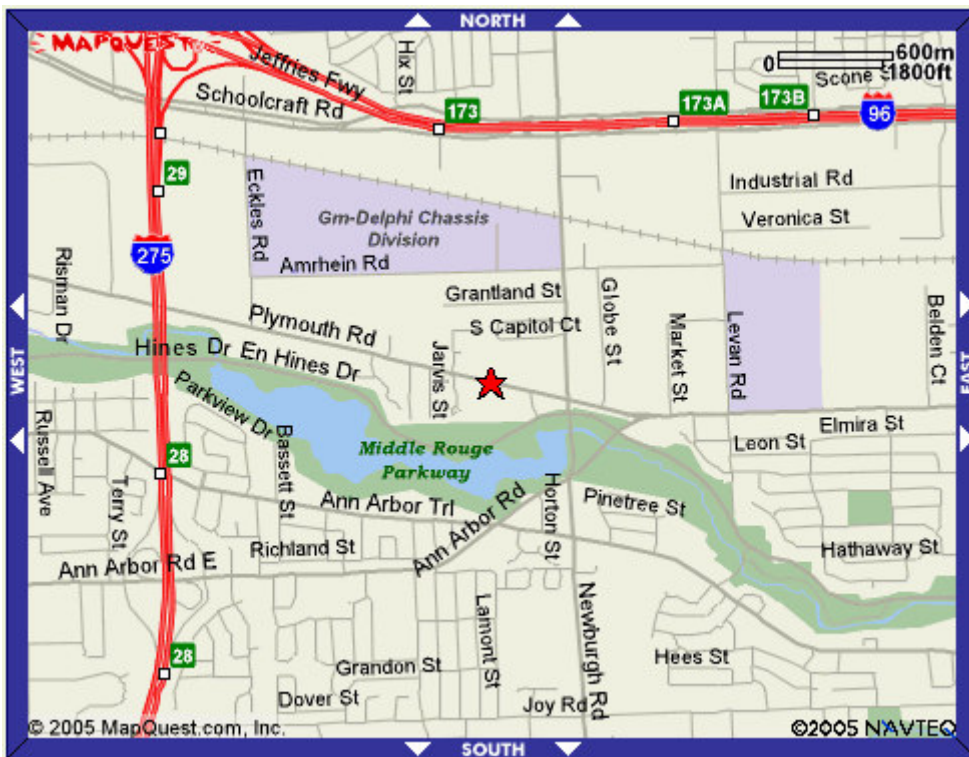
options for control, etc. It's certainly not perfect in operating, but this should be seen as a challenge in line with the challenges of operating our radios. With Linux, you'll REALLY get to understand how your computer hardware works. Why isn't it more broadly used? Inertia, most likely; the attitude seems to be "stay with the devil you know (Windows)".

The presentation will be available on the club website.

ADJOURN: Meeting adjourned at 8:58 PM.

Field Day June 28-29, 2008

It's almost time for Field Day again and the excitement is building. We will be combining forces with the Livonia Amateur Radio Club and using the training tower and property behind the Livonia Fire Station at 37876 Plymouth Rd. for our operations. The station is located north off Plymouth Rd. and west of Newburgh Rd. (see the map below).



The plan is to operate 2A (2 transmitters using emergency power) with a Get-On-The-Air (GOTA) station. We may change to 3A if we find there more non-GOTA qualified hams who want to get some operating time. There will be lots of great equipment to operate this year and there will be plenty of operating opportunities with 3 stations on the air.

Setup will start at 9 AM on Saturday morning and we can use all the help we can get from members of both clubs. We will be using a Carolina Windom, a G5RV and a vertical antenna and we need to set up 4 shelters for operating stations and our PR table. We usually break for lunch around noon then begin operating at 2 PM. We will run 24 hrs straight using SSB, CW, and PSK modes on HF and will have VHF/UHF equipment on site for satellite operations. Teardown will

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start 2 PM on Sunday and we can use some extra help then as well. We are usually packed and gone by about 4 PM.

The Field Day rules for operating and scoring are pretty much the same as last year (<http://www.arrl.org/contests/forms/>) with a few notable exceptions:

- The GOTA station operators who operated last year are not eligible for scoring at the GOTA station this year. Extra points are awarded if the GOTA station has a mentor present at all times to help new operators.
- Only 1 FM satellite contact will count for the bonus points.
- The bonus points for "other" operating modes have been eliminated and replaced by bonus points for a hands-on educational activity.

We will have copies of the 2008 Field Day rules, and our operating plan, available at the June 11th meeting, so please plan on attending to discuss our Field Day operations. A copy of the Field Day plan will be put on our website for those who cannot attend or call in on the conference line.

Field Day is the biggest single event the Tin Lizzy Club participates in each year, and we need your help to make it a success. We need help transporting equipment, setting up and tearing down antennas, operating stations and shelters, operating for some part of the 24hr contest, cooking, logging, talking to visitors and Elmering new hams. It is a great time to get in some operating time, try out some different equipment and just socialize with friends. Please contact Bill Brezina (WA8HEA) at 313-563-2905 or Dave Treharne (N8HKU) at 734-476-1666 for additional information or to volunteer to help.

==>SOLAR UPDATE

SB PROP ARL ARLP023
ARLP023 Propagation de K7RA

This week we saw only one sunspot, numbered 997, and only on Memorial Day, May 26. Alas, this was another sunspot left over from fading Cycle 23, and the appearance was very brief. One day it weakly emerged, and it quickly faded from view. The previous five days were spotless; spots appeared on the five days prior to that, and previous to those spotted days were ten days of no spots.

If our Sun shows no more sunspots today and tomorrow, May 30-31, we will see a 3-month average of daily sunspot numbers centered on April just above the values for every 3-month average since the minimum, centered on October 2007. The values through April are 3, 6.9, 8.1, 8.5, 8.4, 8.4, and 8.9. Because this is a three month average, we won't know the value centered on May until the end of June.

If these numbers suggest Cycle 24 is stalled, we can compare with the previous minimum.

Using the same scheme, the 3-month averages of daily sunspot numbers centered on September 1996 through March 1997 (which includes all the sunspot data from August through the following April) were 8.7, 10.2, 14.2, 16.4, 11.7, 11.3, and 16.4.

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Those are slightly higher values 11 years ago compared with the current numbers, but notice the six months following the minimum also seemed to flatten out. And while the last bottom had slightly higher average sunspot numbers, it had one longer period of no spots.

If we rank periods of spotless days back to the mid-nineteenth century, the period between Cycles 22 and 23 had the tenth-ranked spotless days period, the 42 days from September 13 through October 24, 1996. Now between Cycles 23 and 24 we have observed two stretches of spotless days of at least three weeks, a fifty-third ranked 22 days in September, and the twenty-ninth ranked 28 days in October and November of last year.

The three longest spotless periods since the mid-nineteenth century were 92 days leading up to Cycle 15 in 1913, 69 days prior to Cycle 14 in 1901, and 54 days before Cycle 12 in 1879. You can peruse the 72 longest periods of zero sunspots lasting 20 days or more, all ranked from longest to shortest at the site, <http://tinyurl.com/6b4d6s>.

FARL Club Meetings

The Ford Amateur Radio Club meets the 2nd Thursday of each month, except for Christmas and the summer months (July & August). The meetings are held at 7 PM at the Ford Engine Manufacturing & Development Offices (EMDO) building. EMDO (located at 17000 Southfield Rd, Allen Park, MI) is south of I-94 on the east side of Southfield just north of the Allen Park Municipal offices. Park in the front of the building and come into the main lobby at the side. Knock on the inside door on the right if no one is standing there to let you in.

Conference call capability: All FARL club meetings are available via a conference call. Dial in at 7pm to 313-633-2320. When prompted, enter passcode 19153130#.

Meeting agendas start with club business items followed by a short break. Presentations on selected ham radio topics of interest are given after the break. Anyone wishing to present a topic please contact any FARL Board member.

Emergency Links: NIST Identifies ‘Sweet Spot’ for Radios in Tunnels

As part of a project to improve wireless communications for emergency responders, researchers at the National Institute of Standards and Technology (NIST) have confirmed that underground tunnels—generally a difficult setting for radios—can have a frequency “sweet spot” at which signals may travel several times farther than at other frequencies. The finding, which uses extensive new data to confirm models developed in the 1970s, may point to strategies for enhancing rescue communications in subways and mines.

The optimal frequency depends on the dimensions of the tunnel. For a typical subway-sized tunnel, the sweet spot is found in the frequency range 400 megahertz (MHz) to 1 gigahertz (GHz). This

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effect is described in one of two new NIST publications.* The reports are part of a NIST series contributing to the first comprehensive public data collection on radio transmissions in large buildings and structures. Historically, companies have designed radios based on proprietary tests. The NIST data will support the development of open standards for design of optimal systems, especially for emergency responders.

NIST researchers were surprised by how much farther signals at the optimal frequency traveled in above-ground building corridors, as well as underground. Tunnels can channel radio signals in the right frequency range because they act like giant waveguides, the pipelike channels that confine and direct microwaves on integrated circuit wafers, and in antenna feed systems and optical fibers. The channel shape reduces the losses caused when signals are absorbed or scattered by structural features. The waveguide effect depends on a tunnel's width, height, surface material and roughness, and the flatness of the floor as well as the signal frequency. NIST authors found good agreement between their measured data and theoretical models, leading to the conclusion that the waveguide effect plays a significant role in radio transmissions in tunnels.

Lead author Kate Remley notes that the results may help design wireless systems that improve control of, for example, search and rescue robots in subways. Some handheld radios used by emergency responders for voice communications already operate within the optimal range for a typical subway, between around 400 MHz and 800 MHz. To provide the broadband data transfer capability desired for search and rescue with video (a bandwidth of at least 1 MHz), a regulatory change would be needed, Remley says.

The tunnel studies were performed in 2007 at Black Diamond Mines Regional Park near Antioch, Calif., an old complex used in the early 1900s to extract pure sand for glass production.

The second new NIST report** describes mapping of radio signals in 12 large building structures including an apartment complex, a hotel, office buildings, a sports stadium and a shopping mall.

The research is supported in part by the U.S. Department of Justice and the Department of Homeland Security. Both reports will be available on NIST's Metrology for Wireless Systems Web page.

* K. A. Remley, G. Koepke, C. L. Holloway, C. Grosvenor, D.G. Camell, J. Ladbury, R.T. Johnk, D. Novotny, W.F. Young, G. Hough, M.D. McKinley, Y. Becquet and J. Korsnes. "Measurements to Support Modulated-Signal Radio Transmissions for the Public-Safety Sector". NIST Technical Note 1546, April, 2008.

** C. L. Holloway, W.F. Young, G. H. Koepke, K. A. Remley, D. G. Camell and Y. Becquet. "Attenuation of Radio Wave Signals Into Twelve Large Building Structures". NIST Technical Note 1545.

Courtesy of KB6NU, Dan <http://kb6nu.com/>

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2008-2009 Club Officers

Please contact any of the officers for information regarding the Ford Amateur Radio League, or go to the club website at www.geocities.com/capecanaveral/hall/2183/ for current events and activities.

| | | | |
|-----------------------|---------------|--------|--------------|
| President | Dave Treharne | N8HKU | 734-476-1666 |
| Vice President | Pat Quinn | WD8JDZ | 734-729-1993 |
| Treasurer | Bill Brezina | WA8HEA | 313-563-2905 |
| Secretary | Roger Reini | KD8CSE | 734-728-1509 |
| Repeater Chair | Murray Scott | KE8UM | 248-743-1704 |
| K8UTT Trustee | Dave Treharne | N8HKU | 734-476-1666 |
| Activity Chair | Bill Boyke | N8OZV | 313-805-8877 |

Reminder: Club Membership Dues: \$15 to FARL if not already paid. See your address tag to confirm status
Next Club Meeting: Thursday, June 12th @ 7pm
Presentation: Field Day Preparations

The Ford Amateur Radio League
PO Box 2711
Dearborn, MI 48123