

THE PLATTSMOUTH AMATEUR RADIO CLUB

Communicator

July 2009

Field Day: June 27-28

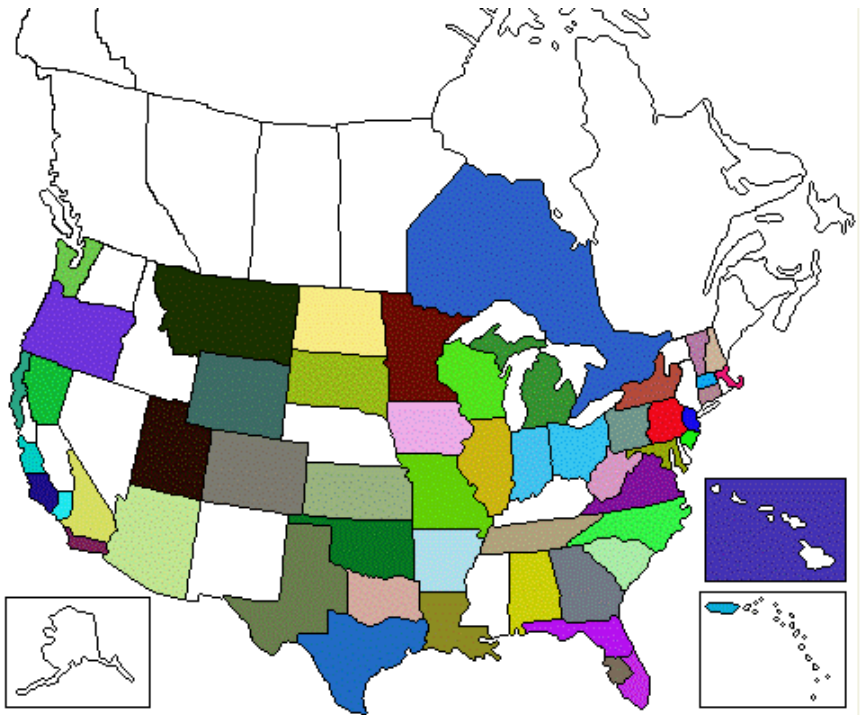
Young Memorial Park

Murray, NE

The Murray Village Board has again given us permission to operate Field day from Young Memorial Park. This site is a great location with a metal shelter, nearby restrooms and a very convenient (and tall) antenna support. Everyone is welcome to join us for Food, Fun, Friends and Radio too! That's a recipe for a good field day.

As the map shows, last year we made contacts in 40 states, including Hawaii, as well as Canada and Puerto Rico. We had a total of 231 contacts, 102 CW and 129 phone. 59 contacts were made with solar power.

We operated two transmitters, Beth ran CW on 20 meters and the other one was phone, mostly on 40, with a few on 15. Ray even made a few using his super-amazing tiny antenna. While we didn't rack up as many points as we usually do, take a look at the map above & notice that there aren't too many white spots.



One rather glaring white state, is Nebraska. We worked the country, but didn't rack up a single contact here at home? We might have to work on that. Perhaps the article in the October issue of Communicator on NVIS would be a good start.

Setup is scheduled to begin about 9 am on Saturday, followed by lunch, our monthly meeting and we may begin operating at 1 pm. **Remember no early morning meeting at Mom's this month.**

Meeting Calendar

Noon, June 27 at Field day

8am, July 25, 2009
at Mom's Café



PAID MEMBERSHIP

- AIØN..... Chuck Engberg* [E]
- K5LBS Jerry Gault [E]
- KBØFSI Pat McCollum [T]
- KBØOGO Roger Behrns* [E]
- KBØWIC Rich Harter [T]
- KBØQKI Duane Volz* [E]
- KBØZZT George Bellairs [T]
- KCØDTK Joan Bellairs [T]
- KCØHYD John Titsworth [T]
- KCØHYE Shirley Titsworth [T]
- KDØEMO Henry Schulle [T]
- KEØXQ Bill McCollum [E]
- KFØFO Jim Peterson [E]
- KGØHY Casey Smith [A]
- KGØKR Beth Engberg* [E]
- KIØPY Kevin Faris [E]
- NØAKA Thomas Schwartz [T]
- KDØFID Kellie Flores [T]
- NØLZH John Harrington [T]
- KCØDKY Byron Exley [T]

**Charter Members*

Meetings are 8am the last Saturday of most months at Mom's Café in Plattsmouth.

Tuesday night get-togethers at Plattsmouth Burger King at 7 PM



P.A.R.C. Officers

- President**
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- Vice President**
KCØHYD John Titsworth
- Secretary**
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Repeaters:

443.45⁺ is located in downtown Omaha

443.225⁺ is coming soon to Murray.

Check our new web site at:
www.PlattsmouthAmateurRadioClub.org
 Web site courtesy of Nebraska Community web sites and the sponsors of the Plattsmouth community web site:
www.plattsmouthnebraska.com

MINUTES of the MEETING

The minutes didn't make it for the newsletter. We'll have them next month.

Pictures from last year



PLATTSMOUTH ARC MEMBERSHIP REGISTRATION FORM					
Name		Call Sign		Class	
Address		City		State	Zip
E-Mail			Phone #		
Spouse Name			Call Sign		Class
Membership Type <input type="checkbox"/> Primary (\$15) <input type="checkbox"/> Spouse (\$5) <input type="checkbox"/> Student (\$5) <input type="checkbox"/> New Ham		● Additional donations are gratefully accepted. ● New Hams are free during the year they receive their first license. ● Please give this form and dues to the club treasurer or any club officer.		Donation for: <input type="checkbox"/> Repeater fund <input type="checkbox"/> Insurance <input type="checkbox"/> Other _____ <input type="checkbox"/> General	
Any additional e-mail or cell phone #s?		Amount: <input type="checkbox"/> I prefer my donation to be anonymous.			

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A sonic boom in the world of lasers

It was an idea born out of curiosity in the physics lab, but now a new type of 'laser' for generating ultra-high frequency sound waves instead of light has taken a major step towards becoming a unique and highly useful 21st century technology.

Scientists at The University of Nottingham, in collaboration with colleagues in the Ukraine, have produced a new type of acoustic laser device called a Saser. It's a sonic equivalent to the laser and produces an intense beam of uniform sound waves on a nano scale. The new device could have significant and useful applications in the worlds of computing, imaging, and even anti-terrorist security screening.

Where a 'laser', (Light Amplification by the Stimulated Emission of Radiation), uses packets of electromagnetic vibrations called 'photons', the 'Saser' uses sound waves composed of sonic vibrations called 'phonons'. In a laser, the photon beam is produced by stimulating electrons with an external power source so they release energy when they collide with other photons in a highly reflective optical cavity. This produces a coherent and controllable shining beam of laser light in which all the photons have the same frequency and rate of oscillation. From supermarket scanners to DVD players, surgery, manufacturing and the defence industry, the application of laser technology is widespread.

The Saser mimics this technology but using sound, to produce a sonic beam of 'phonons' which travels, not through an optical cavity like a laser, but through a tiny manmade structure called a 'superlattice'. This is made out of around 50 super-thin sheets of two alternating semiconductor materials, Gallium Arsenide and Aluminium Arsenide, each layer just a few atoms thick. When stimulated by a power source (a light beam), the phonons multiply, bouncing back and forth between the layers of the lattice,

until they escape out of the structure in the form of an ultra-high frequency phonon beam.

A key factor in this new science is that the Saser is the first device to emit sound waves in the terahertz frequency range... the beam of coherent acoustic waves it produces has nanometre wavelengths (billionths of a metre). Crucially the 'superlattice' device can be used to generate, manipulate and detect these soundwaves making the Saser capable of widespread scientific and technological applications. One example of its potential is as a sonogram, to look for defects in nanometre scale objects like micro-electric circuits. Another idea is to convert the Saser beam to THz electromagnetic waves, which may be used for medical imaging and security screening. High intensity sound waves can also change the electronic properties of nanostructures so a Saser could be used as a high-speed terahertz clock to make the computers of the future a thousand times faster.

Professor Anthony Kent from the University's School of Physics and Astronomy, says "While our work on sasers is driven mostly by pure scientific curiosity, we feel that the technology has the potential to transform the area of acoustics, much as the laser has transformed optics in the 50 years since its invention."

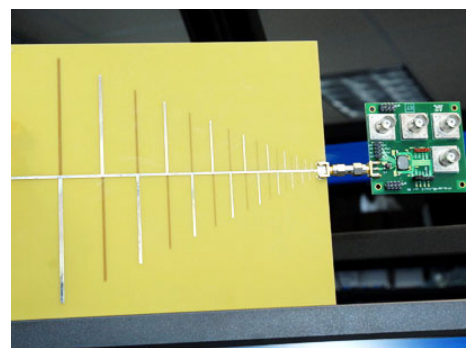
The research team at Nottingham, with help from Borys Glavin of the Lashkarev Institute of Semiconductor Physics in the Ukraine, has won the immediate accolade of the publication of their paper on the Saser experiments in this month's leading Physics journal, *Physical Review*. The team has also won a grant of £636,000 from the Engineering and Physical Sciences Research Council to develop Saser technology over the next four years.

<http://communications.nottingham.ac.uk/News/Article/A-sonic-boom-in-the-world-of-lasers.html>

Radio chip mimics human ear, only better

The human ear collects sounds waves mechanically with membranes and fluid. Hair cells translate the waves, which cover a 100-fold range of frequencies up to 10,000 Hz, into electrical signals for the brain. Working on this cochlear model, researchers have created a broadband, low-power radio chip that covers a million-fold range of frequencies.

<http://web.mit.edu/newsoffice/2009/bio-electronics-0603.html>



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