



# Shark's Teeth



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**Sporadic Ham Radio Club**  
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**July, 2005**

## Summer Edition

What/Where/When is WDN

The Western District Net is part of the amateur radio National Traffic System and covers the 13 Western New York Counties. It is a means of sending and/or receiving messages (Emergency, Priority, Welfare, or other) as a free public service in case of an emergency.

They meet daily at 1830, and 2130 Eastern (additionally at 1100 Eastern on Saturday and Sunday mornings) on the 146.64 Mhz WA2CAM repeater which is in Wethersfield, New York (30 miles SE of Buffalo) for the purpose of handling formal written traffic, and training in Traffic Handling.

Every 15th of the month is simplex night so the net is run on each of the following frequencies depending on your location:

Buffalo area: 147.54 (new 9/2004)

Rochester area: 147.42 (new 4/2004)

Southern Tier: 146.55

## The K7RA Solar Update

SEATTLE, WA, Jul 15, 2005--The big patch of sunspots that energized activity less than two weeks ago has drifted around the edge of the sun. The result has been falling daily sunspot numbers and solar flux. The average daily sunspot number dropped a little more than 63 points to 91.3. At the same time, geomagnetic disturbances increased, so ideal conditions with high sunspot activity and quiet geomagnetic conditions are reversing.

On July 10 a coronal mass ejection (CME) from a day earlier hit Earth, and caused a geomagnetic storm. The same day it hit, the planetary A index jumped to 47, and another CME began its journey from the sun. As a result, the planetary A index went back up--this time to 48 on July 12. All this as sunspot numbers and solar flux dropped.

Solar activity is currently increasing, but only from some sunspots that are drifting from view. They may deliver an indirect hit to Earth in the next couple of days. The interplanetary magnetic field, or IMF, is pointing south, which means Earth is vulnerable. Currently the planetary A indices for Friday through Monday, July 15-18, are predicted to be 25, 25, 20 and 12.

Sunspot numbers and solar flux should reach a short-term minimum around July 16-19, and another maximum around August 2-5. This is based on the recent peak in activity and the fact that the sun rotates relative to Earth about once every 27-28 days.

This time of year West Coast stations often see good propagation in the evening to the west and southwest, to Hawaii and down toward Australia, where it's now winter. Twenty meters can be open all night, with 15 and 17 meters showing good propagation through the evening. The East Coast of North America will see good 20 meter propagation into the evening toward Europe, with the band often staying open four or five hours later than it will about a month from now.

For more information concerning radio propagation and an explanation of the numbers used in this bulletin visit the ARRL Technical Information Service [Propagation](#) page. An [archive](#) of past bulletins also is available.

Sunspot numbers for July 7 through 13 were 149, 111, 126, 78, 68, 52 and 55, with a mean of 91.3. The 10.7 cm flux was 124.9, 110.4, 106.6, 101.8, 93.3, 95.3 and 91.7, with a mean of 103.4. Estimated planetary A indices were 8, 5, 19, 47, 23, 48 and 30 with a mean of 25.7. Estimated mid-latitude A indices were 6, 5, 13, 28, 14, 17 and 20, with a mean of 14.7.

## **HAM Radio and Homeschooling: A Good Fit**

Originally from: [www.homeeducator.com](http://www.homeeducator.com)

"CQ CQ CQ This is KB7UPR", the boys called over and over, but the 10-meter band was dead. They were using my ham radio station to try to make a contact as part of a class to help homeschoolers get their first radio license. We made several local contacts on other bands so it didn't matter to the boys that they couldn't get through on 10 meters. They just wanted to have fun fooling around with my radios. Over the summer I offered the class to our homeschool support group and four teens signed up. All four got their license by the end of the summer.

Ham radio offers many educational and social benefits and may fit well into your homeschool curriculum. Amateur radio requires math and science and is very hands-on. Few will accuse a ham radio operator of being weak in science. And you can learn and get a call-sign right alongside your child. We've met two other homeschool families where a mom or dad earned their license along with their child.

But what about socialization? Ham radio may seem like a hermit's hobby, sitting alone in a room with a bunch of electronic equipment, but it's actually very social. It's all about talking to other people on radio.

There is a distinct protocol and set of manners used on ham radio, most of which you learn by listening and making contacts. It can also be a link to the history of radio, which can lead you to many great stories from the early days of radio. Many dedicated hams are ex-military radio operators with some great stories to tell. Most amateur radio operators leap at the chance to talk

on the radio with young people, enjoying the opportunity to encourage them in the hobby.

Aside from the obvious educational benefits of ham radio, there are other less obvious benefits. There are amateur radio operators all over the world and students can learn about and build relationships with people from many countries. The international nature of ham radio dovetails wonderfully with studies of history and geography. Collecting QSL cards from around the country and around the world is a popular ham hobby. The hobby can lead to opportunities for volunteer service and even a chance to help with emergency communications in a disaster.

One of the best things about helping children get into the ham radio hobby is how well it connects them across generations. Many hams are seniors, many are veterans and all are interesting people with a story to tell. Through ham radio my daughter Pearl has worked with WW2 vets, engineers, Mensa members, teachers, volunteer coordinators and event managers. She's attended business meetings and had the opportunity to introduce the hobby to hundreds of children near her age.

In an emergency, being a ham radio gives you a chance to rush to the rescue and use your license and equipment to aid in critical communications. Ham radio operators have been involved in disaster communications since the earliest days of the hobby. In shipwrecks, tornadoes, earthquakes, or hurricanes strike often the first communications in and out are through ham radio. Red Cross organizations in many areas work closely with ham radio operators.

Ham radio has afforded us opportunities to serve the community in other ways. My 10 year old daughter Pearl and I have volunteered over 100 hours at our local science center introducing ham radio to some of the 500,000 visitors to the center each year. Most of the visitors are school children on field trips. Pearl's interest in ham radio has earned her girl scout awards for service hours, and a family membership at the science center. If your student is a Boy Scout, earning a ham radio license will take them a long way toward earning their Radio Merit Badge.

In order to get your Technician class license you must take a test. You do not have to learn Morse Code. And don't let aversion to tests scare you because there's good news. All the questions are public. The test will consist of 35

questions from a 350 question exam bank. You must get 26 right to pass. What this means is you can pre-study all the questions you will see on the test. You can build your own practice exams and take them when and where you wish. We did a lot of studying and practice testing in the car. When my daughter missed questions, we would discuss the concepts underlying the questions until she understood them, then be sure she wouldn't miss that question, or those like it again. The exam is also available for free on the web and on commercially available software. My favorite free website for practice exams is AA9PW.com, which we used extensively when getting Pearl ready for the exam.

We prepared by reading a chapter in the text, going through the exam questions for that chapter, and occasionally taking practice exams. I would not allow Pearl to take the exam until she was consistently passing practice exams. After she had passed a dozen practice exams, sitting for the real exam was a simple thing for her. This is also a great way to alleviate test-jitters.

The ham exam is closed book and tightly proctored. It's given by volunteers called Volunteer Exam Coordinators or V.E.C.s. They want you to succeed, but aren't allowed to help much beyond giving you a new pencil. Still, they're on your side.

There really is no substitute for the book 'Now You're Talking' published by the Amateur Radio Relay League. This is the go-to book for anyone working on their first ham radio license. I required each person in our co-op to buy the book, bring it to class and do the lessons and sample test questions. It was the basis for our classes.

Self study isn't the only way to get ready for the exam. You can find a class being taught in your area or you can find an Elmer. An Elmer is an experienced veteran radio operator who mentors you through your licensing process and early radio experience. Finding an Elmer can be intimidating, but eventually proves rewarding long after you've achieved your license. A good Elmer builds a personal relationship with you and guides you through difficult concepts. He'll teach if you want teaching, or just listen. He may suggest study ideas. He'll definitely advise on which radio you should buy, and chastise you for bad operating practices if he catches you at them. A wise Elmer gives you something to shoot for. He lets you use his radios to learn good operating techniques, and help you overcome microphone fright. He'll come up with novel ways to explain difficult and obscure concepts.

Shop for an Elmer, and be up front about what you want. It isn't difficult but can be scary. Try out this line, "I'm looking for someone to help me work on my first ham radio license. Can you help?" Start by visiting a local ham radio club meeting. The more enthusiastic you are, the more interest and help you will get from an elmer. Ask around for someone who helps others get their license. Your local science museum or electronics store are another good place to look.

Any way you do it though, you'll end up buying the book. It costs about \$20 no matter where you buy it. Radio Shack carries it, or you can get it from Amazon.com.

There is no lower age limit for the ham exam, but there is some math, and it's nice to have a good idea how multiple choice tests work. I am working with Alyssa, my 8 year old daughter to prepare for the exam, but it may be a year or more before she has the math concepts down. Ham radio is not for every kid. It takes the right mixture of geekiness and intensity. If your child likes taking things apart to see why they used to work, if they like gadgets and playing with new technology or if they like the thought of being able to help in an emergency, then ham radio may be a good fit.

## **Internet Radio Linking**

As it's name implies, the Internet Radio Linking Project makes use of the Internet as a communications backbone to facilitate Amateur Radio communications. By enabling a repeater or simplex radio with this technology, we can provide instant, on-demand connections with one or more repeaters worldwide. The Internet Radio Linking Project (IRLP) allows amateurs to link radio systems separated by long distance without the use of expensive leased lines, satellites, or controllers.

IRLP allows communications using your HT, mobile or base FM transceiver to any location in the world that has an IRLP node.

All local (and linked) users will be able to participate in an IRLP QSO via the Internet to any place in the world where a node exists through a reflector (a group, or party line) or node-to-node (single point-to-point) connection.

**Background:**

IRLP is the brainchild of Dave Cameron, VE7LTD of Vancouver BC. IRLP is the abbreviation used for the Internet Radio Linking Project which Dave developed over the past several years. In 1998 Dave became frustrated with the unreliable operation of the Windows based Voice over IP software. All Windows based amateur linking software used VOX and were not secure from non-amateur access. The IRLP network uses a digital switching concept and produces an instant and secure link between licensed repeaters around the world. The hardware and software is constantly being upgraded and enhanced with new features.

**But is it DX?**

No not really, it doesn't have the challenge of sending your signal around the world! It is often referred to as "armchair DX" because it's so easy. However it is not DX by any of the traditional definitions. While you may have conversations with stations around the world, your radio signal is only traveling as far as the local repeater. Contacts made do not qualify for any awards or Field Day with the ARRL. Most stations will not send QSL's for IRLP contacts, although some are using electronic QSL's (visit <http://eqsl.net>). Although not DX, it has some of the flavor of working DX! You may be talking with stations in different countries, time zones or hemispheres. It simply is a way to expand the repeater's reach using the Internet. So if you like to ragchew while on the repeater, this is a way to reach more hams. So please put this in perspective and enjoy it for what it is!

**IRLP versus other linking systems**

Unlike some systems that allow users access from a PC with minimal if any security, IRLP uses a 100% authentication system (PGP) to assure the connecting nodes are authenticated and authorized to transmit on the amateur bands. This provides security from hackers and non-amateur PC access. Although the IRLP uses the Internet., radio activity is maximized because the philosophy behind IRLP requires a radio as an entry and exit point to the system.

There are other systems that can be used to link Amateur Radio operators using Internet. Voice over IP technology.

IRLP has a different implementation philosophy from other Internet linking systems.

Similarities between IRLP and other systems

Use the Internet to connect Radio Amateurs around the world.

Use Voice over IP technology for linking.

Require a computer, operating system and an additional hardware interface.

IRLP

Uses Linux, a small, fast, reliable, freeware operating system.

Uses modern cryptographic authentication for a node to connect.

Requires the use of a radio to enter the system on both ends.

Promotes increased use of Amateur Radio.

Does not use VOX; therefore, no courtesy beeps, no IDs, no repeater hang-times comes through a link.

Others

Uses Windows, a commercial operating system prone to CPU lockups.

Allows for the possibility of unauthenticated users from a PC to access a transmitter.

The node trustee is responsible for transmitter use by unlicensed PC users.

Allows for communications without a radio.

Uses VOX; therefore, courtesy beeps are heard, IDs come through and the hang-time depends on how long the VOX stays keyed.

Using CTCSS/COS signaling instead of VOX is one of the greatest innovations used by IRLP. This was really driven home during the second 911



Commemorative Net where all the EchoLink nodes kept the links tied up by ping-ponging back and forth whenever a node was unkeyed. Even during the hurricane watch, an operator had to ride herd on the EchoLink nodes to keep them from causing the net to collapse under the weight of the ping-ponging nodes. EchoLink is a very popular mode but this one fundamental flaw make it less than desirable for repeater linking.

It is our opinion that the nature of the IRLP system, where a radio must be used at both ends of the contact, helps promote Amateur Radio. No computer, special equipment or software is required by the end-users, all you need is a radio! The fact that it runs on a more reliable operating system was key in our choice of the IRLP system.

Other Internet linking systems include **iLink**, **EchoLink**, **eQSO** and **WIRES**.

# Cool Technology

## DingoTel - 2Way

DingoTel™ - 2Way enables you to bridge two-way radio traffic across the Internet. Its simple setup allows you to communicate easily with your contacts in minutes.

Using the power of your computer, 2Way adds intelligence to your existing two-way radio infrastructure and lets you go beyond the 5/10 mile barrier. You can now talk with friends and family almost anywhere.

It is also ideal for business use. Manage sites in distant locations and reduce your phone bills. With zero operating costs, it's the ultimate freedom to talk.

How does it work?

DingoTel™ - 2Way is a simple and effective way to get the most out of your two-way radios by using the internet as a bridge. It works by connecting your two-way radio to your computer and then transmitting your voice over the DingoTel network (VoIP). There are two parts to the system:

### 1. The 2Way Device

The device plugs into a standard USB jack. Then using the provided cable, connect one of your radios to the device. It's that simple. There are no power cables or transformers so you won't need a plug point.

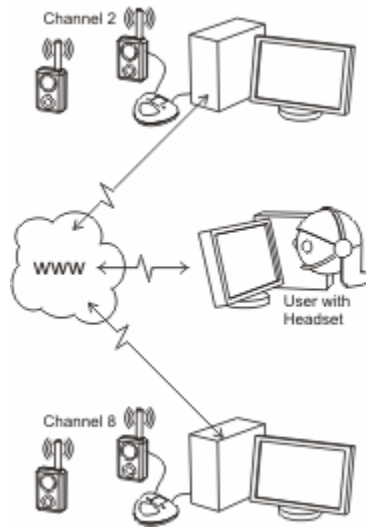
### 2. The 2Way Software

The DingoTel™ 2Way software works like most instant messaging programs using a list of contacts. Making a call is as simple as speaking the words "Call Robert". To add your friends and contacts to your calling list is simple, all you need to know is your intended contact's email address and DingoTel™ - 2Way does the rest. Once you have created a list of contacts, you are free to pick up your second radio and move away from the computer. With long distance 2Way radios you are able to get miles away from your computer and still communicate; for free! The software uses voice recognition to understand your commands and either make or hang up calls with your contacts. You can enjoy the freedom of mobility you expect from your two-way radio while commanding the software at great distances.

DingoTel™ - 2Way allows for operation with most radios that support an earpiece/mic accessory.  
**Sells for about \$29.95 on amazon.com**

# Cool Technology Cont.

## DingoTel - 2Way



## Chit Chat

**News, Pics, Articles or  
Suggestions?  
Send them to:  
[news@k2fa.org](mailto:news@k2fa.org)**



This space for Rent.  
Contact  
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rates and info.