

# The Ragchewer

July 2006

The monthly newsletter of the  
Lancaster & Fairfield  
County Amateur Radio Club

On the Web: [www.k8qik.org](http://www.k8qik.org)

Send email to [K8QIK@columbus.rr.com](mailto:K8QIK@columbus.rr.com)

## Club Meetings :

1<sup>st</sup> Thursday of every month  
at 7:30 pm at the club house.

## Radio Night:

Every Thursday except the  
1st Thursday at the club  
house, 6:30 pm to 8:30 pm

## VE Testing:

The third Sunday of every  
even numbered month.  
Register at 9:30 am and  
testing at 10:00 am

## Club House

### Location:

On State Route 37 (Granville  
Pike) next to Beavers Field.

## Net:

Mondays at 9:00 p.m. 147.03  
MHZ (+.6)  
146.70 MHZ (-.6) Alternate  
Freq.  
443.875 MHZ (+5)

Club Packet BBS  
145.53 MHZ  
K8QIK-1 BBS  
K8QIK-2: Ohio53

## Weather Spotter Net:

146.76 Repeater with 123Hz  
tone every Tuesday at 7:30  
p.m.  
Alt frequency 147.24 MHZ

## July Birthdays

Jack R. Travis	AE8P
Gregg A. Russell	KB8USO
John G. Hilliard	W8OF
Charles M. Doty	W0MNE
David B. O'Hare	KB8DRQ

## Thursday Night Radio Night

Radio night is every Thursday at 6:30 p.m.  
(except the first Thursday which is the club  
monthly meeting). **If you don't have your own  
radio gear, you can use the clubs.** Work a  
little HF, make a few DX contacts, and maybe  
build something? How about a hot cup of  
coffee and a few good stories? We'll have them  
all waiting for you.

## ARRL Membership

When you join the ARRL, or renew your  
membership through the club, we retain \$15 for  
each new membership OR lapsed membership  
(of two years or more), and we retain \$2 for  
each renewal. Please support our club, it doesn't  
cost any more.

## Net Manager Wanted

We're still looking for a Net Manager to  
coordinate our efforts on the Monday night net.  
Can you help? Contact any officer.

## Free Swap and Sell

If you have anything ham radio related, you can  
swap it or sell it here. List your items **free**.  
Give a price and how to contact you. Send the  
list to [K8QIK@columbus.rr.com](mailto:K8QIK@columbus.rr.com)

## 2005/2006 Officers

### President:

Don Stephenson  
WD8PCF

### Vice President:

Scott Snoko  
WD8IXO

### Treasurer:

Ed Campbell Sr.  
WD8PGO

### Secretary:

Robert Northrup  
KC8PSW

### Activities Manager:

Position open  
(volunteer?)

### Station Engineer:

John Hilliard  
W8OF

### Trustee:

John Hilliard  
W8OF

### Editor:

Jack Travis  
AE8P  
(740) 687-1985

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## July 6 Meeting Minutes

At 7:30pm meeting called to order by President Stephenson who led the pledge of allegiance.

There were 19 members present and no guests.

### **Secretary Report: Robert Northrup - KC8PSW**

Minutes are posted in the May / June Ragchewer. Minutes were accepted.

### **Treasurer's Report: Ed Campbell, Sr., - WD8PGO.**

Ed's report was given by Charlie Snoke – N8KZN. Motion to accept, second and passed.

### **Trustee Report: John Hilliard - W8OF**

John reported he had received an email from a group who were pulling together a national database of repeaters and he was working on his part.

### **VP Report: Scott Snoke - WD8IXO**

No Report

### **Activities Manager: Position open**

No report.

### **Station Report: John Hilliard - W8OF**

John reported there was a hum in the new repeater from the power supply. It was fixed by adding filtering parts to the power supply circuitry.

### **VE Testing: Allan Sellers - KB8JLG**

The next VE session will be August 20 at the clubhouse at 9:30 AM.

### **Monday Night Net: Position is open**

July 10 John, W8AGS      July 24 John, W8OF  
July 17 Fred, W8FZ      July 31 Charlie, W8KZN

### **Ragchewer: Jack Travis - AE8P**

Jack stated he has plenty of material for the "Chewer" but is lacking local items of interest. Jack also brought up the issue again about correct email addresses for club members and those who have email but want a paper copy sent. **IF you are not getting the Chewer, or know a member who is not, then get with Jack and get your email address straightened out --- Nuff said!!!**

Also the printer in the clubhouse runs very slowly when printing the "Chewer". I checked it out and the problem may be a lack of RAM for the PC that feeds the printer. The printer needs a minimum of 256Mb of RAM and the PC has only 64 Mb of RAM. Jack is going to bring his laptop and connect to the printer to see if the printer really is the problem or the PC that is spooling the print file to the hard drive. We may need to add RAM to the PC or just get one with more horsepower under the hood.

If you wish to submit an article, news item, cartoon, or other Ham related bits of trivia, you can email him at k8qik@columbus.rr.com.

### **Emergency Coordinator: Ed Campbell - WD8PGO**

No Report.

### **Safety Report: Scott Snoke - WD8IXO**

No Report

### **The Flower Fund: Juanita Gaffney – KC8OYO**

The George Forman grill was raffled off and Dave won the grill. Jeff Bell won the flower fund at \$13.

### **Old Business:**

The "items owned by the club" listing project is still in progress.

Don – WD8PCF will prepare an equipment sign out sheet so we can help find where stuff is going.

Charlie said the firehouse antenna project is still being worked.

### **New Business:**

This is a notice for past club officers/members who are no longer serving as an officer to return your club house key so that new officers may use them. Please come to the next meeting or mail your key to your club treasurer Ed Campbell, 1243 Quarry Rd SE, Lancaster, Oh 43130.

John – W8OF said we need to obtain back up tubes for our newly refurbished and operating repeater. He said the 2 new tubes were \$105 each and the cost of two plus shipping would be between \$225 and \$250. Fred – W8FZ made a motion, second by Robert –

KI8JM to allow John to procure the new tubes. The new tubes will be installed when they arrive and the current tubes will held as spares. Motion passed.

Jack – AE8P brought in a brochure for all to see that was a super way to advertise the club in Lancaster and surrounding areas. All thought it is a great idea so this will be looked into further.

Robert – KC8PSW wrote to World Radio about the process to get our club into the publication. He received a fact and cost sheet and the basic cost is

\$5.42/month. No one was too interested in pursuing this venue.

Ed- WD8PGO said before the meeting that club members would help the Lancaster Festival. He needs one (1) person for July 22nd and two (2) for July 29th. If you can help, see Ed to let him know.

Meeting adjourned at 8:15 PM.

Respectfully submitted,  
Robert Northrup - KC8PSW

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### Upcoming Hamfests

July 15 is the Northern Ohio ARS hamfest in Wellington, OH. You can get more information on line at <http://www.noars.net>

July 16 is the Van Wert ARC hamfest in Van Wert, OH. You can get more information on line at <http://www.w8fy.org>

July 30 is the Portage ARC hamfest in Randolph, OH. You can get more information on line at <http://www.hamfair.com>

August 5 is the Voice of Aladdin ARC hamfest in Columbus, OH. You can get more information on line at <http://www.aladdinshrine.org/hamfest.htm>

August 12 is the Northwest Ohio ARC hamfest in Lima, OH. You can get more information on line at <http://www.nwoarc.org>

### June VE Testing

Results from the June VE testing were 5 candidates that got 3 Tech and 2 General licenses. Among them were one young Tech who passed his CW and General theory and a young lady who got her Tech (to her fathers delight) on Fathers Day.

VE's were Fred W8FZ, Bob KI8JM, Greg W8NGA, John W8OF, John W8AGS and Allen KB8JLG

### Next VE Test:

The next VE test will be Sunday August 20th at the club house on Route 37. Register at 9:30 a.m. and testing at 10:00 a.m. Even if you don't think you're ready, why not take it you might surprise yourself ?

### Tubes For Sale

If you need tubes for your boat anchor or TV contact Jeff Bell WD8JLI at 614-774-2973 or email at [jbelle@imagearray.net](mailto:jbelle@imagearray.net) he has a huge supply for most needs.

### Put The Glass Down

A lecturer was giving a lecture to his students on stress management. He raised a glass of water and asked the audience, "How heavy do you think this glass of water is?" The students' answers ranged from 20gm to 500gm.

"It does not matter on the absolute weight. It depends on how long you hold it. If I hold it for a minute, it is OK. If I hold it for an hour, I will have an ache in my right arm. If I hold it for a day, you will have to call an ambulance. It is the exact same weight, but the longer I hold it, the heavier it becomes."

If we carry our burdens all the time, sooner or later, we will not be able to carry on, the burden becoming increasingly heavier. What you have to do is to put the glass down, rest for a while before holding it up again. We have to put down the burden periodically, so that we can be refreshed and are able to carry on.

So, before you return home from work tonight, put the burden of work down. Don't carry it back home. You can pick it up tomorrow.

Whatever burdens you are having now on your shoulders, let it down for a moment if you can. Pick it up again later when you have rested.

Rest and relax. Life is short, enjoy it!

If you are a senior citizen, chances are you played marbles as a kid. Chances are equally good that you've lost most of them since then.

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## Intro To Packet Radio:

by Larry Kenney, WB9LOZ

### A Short History - How it all began

It was in March, 1980, that the Federal Communications Commission approved the transmission of ASCII for Amateur Radio in the United States. That was a year and a half after Canadian hams had been authorized to transmit digital "packet radio", and the Canadians had already been working on a protocol for it. Doug Lockhart, VE7APU, of Vancouver, British Columbia, had developed a device that he called a terminal node controller (TNC). It worked with a modem to convert ASCII to modulated tones and convert the demodulated tones back to ASCII. Doug had also formed the Vancouver Amateur Digital Communications Group (VADCG) and named his TNC the "VADCG board".

Hams here in the U.S. started experimenting with the VADCG board, but in December, 1980, a ham from the San Francisco Bay Area, Hank Magnuski, KA6M, put a digital repeater on 2 meters using a TNC that he had developed. A group of hams interested in Hank's TNC started working together on further developments in packet radio and formed the Pacific Packet Radio Society (PPRS). AMRAD, the Amateur Radio Research and Development Corporation, in Washington, DC became the center for packet work on the east coast, and in 1981 a group of hams in Tucson, Arizona, founded the Tucson Amateur Packet Radio Corporation (TAPR).

Working together these groups developed a modified version of the commercial X.25 protocol called Amateur X.25 (AX.25) and in November, 1983, TAPR released the first TNC in kit form, the TAPR TNC1. In 1984, a great deal of packet experimentation was done, software for packet bulletin board systems was developed, and packet radio started becoming more and more popular all across the U.S. and Canada.

Packet Radio was one of the major developments to hit the world of Amateur Radio and thousands of hams soon caught the "packet bug". If you're wondering what it's all about and why so many people got so excited about it, continue reading. You're about to find out.

### **Packet Radio - What It's All About**

Packet seems to offer something different from other facets of Amateur Radio, yet it can be used for

everything from a local QSO to a DX contact thousands of miles away, for electronic mail, message transmission, emergency communications, or just plain tinkering in the world of digital communications. It presents a new challenge for those tired of the QRM on the low bands, a new mode for those already on FM, and a better, faster means of message handling for those on RTTY. Packet is for the rag chewer, the traffic handler, the experimenter, and the casual operator.

A ham can get involved very easily with relatively small out-of-pocket expenses. All you need is a transceiver, a computer, and a TNC or special packet modem and software. A two-meter rig is preferred, since that's where most of the packet activity is located. You probably already have the rig and the computer, so all you need to buy is the TNC, which costs just over \$100, or the special modem and software, which sell together for about \$50.

The TNC, the Terminal Node Controller, is a "little black box" that's wired between the computer and the radio. It contains software for controlling the outgoing and incoming transmissions for your station and a modem that converts the data from the computer into AFSK tones for transmission and changes the tones that are received by the radio into data for the computer. The TNC modem works much like a modem that's used to connect your computer to the telephone lines. It's a simple matter of wiring up a plug and a couple of jacks to become fully operational on packet. If you prefer to use the small modem instead of a TNC, you'll need special software for your computer to replace the software in the TNC. Either method works equally well.

Packet is communications between people either direct or indirect. You can work "keyboard to keyboard" or use electronic mailboxes or bulletin board systems to leave messages. Due to the error checking by the TNC, all of it is error free, too. (That is, as error free as the person at the keyboard types it!) As the data is received it's continuously checked for errors, and it isn't accepted unless it's correct. You don't miss the information if it has errors, however, because the information is resent until it is correctly received.

The data that is to be transmitted is collected in the TNC and sent as bursts, or packets, of information, hence the name. Each packet has the call sign or address of who it's going to, who it's coming

from and the route between the two stations included, along with the data and error checking. Since up to 256 characters can be included in each packet, more than three lines of text can be sent in a matter of a couple of seconds. There is also plenty of time between packets for several stations to be using the same frequency at the same time.

If all of this sounds confusing, don't let it bother you, because the TNC or special packet software does everything for you automatically. Packet radio might seem very confusing at first, but in a day or two you'll be in there with the best of them.

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## The Wayback Machine #1

by Bill Continelli, W2XOY

OK, I knew it would happen. When I started this column, I expected three questions would be asked: "When did ham radio start?"; "Who was the first ham?"; and "Where did the word 'ham' come from?". To answer these questions, let's set the Wayback Machine to Warp Factor 9, and head back 100 years. Practical "wireless" had its start in 1896, when Marconi first sent a signal over a distance of two miles. By 1899, he succeeded in sending a wireless message across the English Channel, a distance of 32 miles. The year 1899 also marks the first construction project, which appeared in "American Electrician" magazine. In December, 1901, Marconi was able to bridge the Atlantic, a feat which caught the world's attention and fueled the imagination of thousands of potential amateurs, who took their first steps into wireless.

In the early days, everything was "spark". What exactly was spark? Well, sit down some summer night, listen to your AM or SW radio, and count the static crashes. Now turn on the vacuum cleaner, or an electric shaver, and listen to your radio again. Hear that noise? In short, spark wireless was merely a form of "controlled static". A high voltage inside a spark coil would jump across a gap, which was coupled to an antenna.

The spark was keyed on and off to transmit the code. The signal generated was extremely broad. A "state of the art" 1906 spark transmitter operating on 400 meters (750 kHz) would actually generate a signal from about 250 meters (1200 kHz) to 550 meters (545 kHz). Receivers were no better, before 1912 all systems were basically unamplified detectors. Tuners were primitive or nonexistent. As might be expected, by today's standards, the early wireless stations were terribly inefficient. Transmitting ranges varied from as little as 600 feet with a 1/2 inch coil to perhaps 100 miles from a kilowatt station and a 15 inch spark coil. Ships at sea

with 5 kW transmitters might get as much as 500 miles maximum range.

It was into this world that the early amateurs ventured. Actually, if we were to concentrate on the years prior to 1908, it would be more appropriate to say "experimenters" rather than "amateurs". For in the first decade of wireless, there was little or no interest in personal communications with other stations; rather, the concentration was on technical development, either in the interest of pure science, or (more often than not) with an eye towards cashing in on this new medium. Experimenters were unorganized and, with the exception of those immediate stations with whom they ran tests, had no knowledge or interest in other pioneer stations. Any true "amateurs" prior to 1908 have been lost in pre-historic obscurity.

By 1908, however, the face of wireless began to change. Technical developments had reached their first plateau, and a number of major competitors had formed the first "wireless trust"--United Wireless. With a temporary truce in effect, equipment was now more readily available to the public. Along with this, new magazines, such as "Modern Electrics", were formed with wireless communication as the primary thrust. The circulation of "Modern Electrics" jumped from 2000 to over 30,000 in just two years. The year 1908 also saw the first "handbook", "Wireless Telegraph Construction for Amateurs". It is difficult to know exactly how many amateur stations were on the air in this completely unregulated, laissez-faire era, but reliable estimates put the number of "major" stations (i.e. those capable of communicating over 10 miles) at 600, while "minor" stations with a one or two mile range probably numbered 3000 or more. Thus, if a year had to be arbitrarily chosen as the start of amateur radio, it would probably be 1908.

As for the "first" amateur, that's a harder one. Without licensing, regulations, or a written record, there will never be a definitive answer to this question. However, the Wayback Machine has come

up with the name W.E.D. Stokes, Jr. He was a founding member and the first President of the first amateur radio club--the Junior Wireless Club, Limited, of New York City. This organization was formed on January 2, 1909. Other founding members who might lay claim to the title "first amateur" were George Eltz, Frank King and Fred Seymour. Later the same year, the Wireless Association of America, and the Radio Club of Salt Lake City were created.

By 1910, wireless clubs were springing up all over the country and the first call book-"The Wireless Blue Book" was published. Since there were no regulations in this period, the call signs listed in the Blue Book were self assigned—which brings us to our third question--where did the word "ham" come from? Legend has it there was a phenomenal station on the air with a 5kw station, which could be heard at all hours of the day and night at distances of over 500 miles. The station operator used his initials for his call sign-H.A.M.. I don't know if this is the real story, but I've always liked this explanation best.

Amateur radio continued to grow. By 1911, Modern Electrics had a circulation of 52,000, and there were 10,000 amateurs in the country. With thousands of stations on the air, both amateur and commercial, interference was becoming a serious problem, especially in marine communication. Ships, because of their restricted antenna length, were limited to frequencies between 450 and 600 meters (666 to 500 kHz). As we have seen, one spark station

could take up this entire spectrum. Thus, it was imperative that all stations cooperate and stand by when the others were transmitting. Sadly, this often was not the case. In addition to interference between amateurs and commercial stations, there was more interference and sometimes deliberate jamming between commercial stations of different companies. Prodded by the Navy (which was using inefficient and outdated equipment and thus suffering from excessive interference), the U.S. Congress was starting to take a serious look at wireless regulation. However, before they could take up proposed legislation, an incident happened that would quickly and dramatically alter the structure of the wireless spectrum.

On April 15, 1912, the R.M.S. Titanic struck an iceberg in the North Atlantic and sank. Thanks to wireless, and the first S.O.S. in history, 713 lives were saved. However, it has been argued that the number of survivors could have been doubled or even tripled, if there were stronger wireless regulations in effect. We are going to leave the Wayback Machine hovering over the year 1912, keeping a sharp eye on the Titanic, and on a 22 year old experimenter in Yonkers, N.Y., who would soon make some major contributions to radio. So, until then, keep that spark gap adjusted and those raspy CQ's coming. We'll catch you next month on board the Wayback Machine.

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## The Little Club That Could

By Clem Small, KR6A

Reports of the impending demise of ham radio have been greatly exaggerated. The Bitterroot Amateur Radio Club found a new life by applying the most elementary technique of resuscitation – motivation!

If you are concerned about the much talked about fading away of ham radio, don't just worry about it; do something about it. There are things that you can do to improve the situation, things that can insure that the hobby remains an interesting and viable option for our grandchildren and beyond. This is an account of how our club, the Bitterroot Amateur Radio Club of Hamilton, Montana, ignored the predictions of ham radio's impending demise and made Amateur Radio grow and prosper in Montana's Bitterroot Valley.

Five or six years ago attendance averaged three to seven members per meeting. Activities generally consisted of a report by the club president, followed by small talk, coffee and donuts. It was a comfortable agenda and some of the members probably felt it was fine. On the other hand, a few of us were not satisfied. There were no activities such as technical demonstrations, talks on interesting aspects of ham radio, Field Day, transmitter hunts and the like – the things that make you really want to attend club meetings.

Hoping to make club meetings more interesting, we decided to create some activity and to increase the membership. We envisioned programs that would interest current members and attract other hams who were not now attending meetings. Many hams in the valley either were not interested in the club or didn't know it existed. We decided to take a two-fold

approach to making the club attractive to these hams. First, we would make the meetings more interesting, and then we would tell the local hams about them.

Our first step was to have the club president appoint our small group to be the program committee. Then we listed all the sources where we might find interesting topics for meetings. Someone who was active in amateur TV or Dxpeditioning or had technical expertise on other ham topics would be asked to present a program on that topic. For instance, we found a ham that was a good DXer and asked him to talk to the club about DXing. We wrote to ARRL for a list of videos and then built meetings around those various ham radio topics. We invited speakers from the radio section of the Forestry Service, emergency helicopter rescue units, and anyone else who could tell us how they used radio in their work. We organized transmitter hunts and began participating in ARRL Field Day operations. We had a meeting with our county's Office of Disaster and Emergency Service, and made plans for providing communications for them when we were needed. We tried to implement anything we could think of that sounded like fun.

But just having interesting programs and activities wasn't enough. Local hams had to know what we were doing. We asked the FCC for a list of all the hams in the area and did our best to write and call every one of them. Then we followed up with a short, free subscription to the newsletter that we had started. And we began to talk up our activities on the club's repeater during the Wednesday night net. Using the net, we were able to make and maintain

contact with a growing number of check-ins who were starting to get interested in our new activities. Our original meeting place, a small backroom in a local restaurant, was now too small and we had to find much larger quarters. In fact, the club was now so big that we decided to have our own VEC program. Prospective hams and upgrades were coming from well beyond our local area to be tested. Soon we were adding new people to the ranks of Amateur Radio almost every month, and upgrades became common. Many of our members went all the way to Extra Class. We now have almost 100 members and typically 25 to 35 attend each meeting. We are quite proud of the fact that we have a good representation of young people in their 40s, 30's, 20s and teens. It is no longer just a club of senior citizens interested in a dying hobby; we are alive, well and growing.

Perhaps what we did here in Bitterroot Valley won't work for every club that wants to grow. The point is that there is much we can do to make our hobby more satisfying for ourselves, and more attractive to potential members. Furthermore, these things will benefit the hobby for the long haul. Remember that it took only a few hams to start the ball rolling. Now that membership has reached a critical mass there are activities to appeal to everyone. If hams could duplicate this kind of spirit routinely around the country, we could all paraphrase Mark Twain's famous comment to say that the reports of the impending demise of ham radio have been greatly exaggerated!

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## Computers and Ham Radio

By Norman Young, KA4PUV

Imagine picking up your 2 meter or 440 mic during the daily commute and tossing out your call on one of the local repeaters. Now imagine someone answering that call from, say, Scotland.

Sound far-fetched for VHF or UHF? Well, it isn't, thanks to something called the Internet Repeater Linking Project (IRLP). IRLP is a marriage of repeaters and the Internet that is rapidly gaining popularity with hams of all license classes. It uses a high speed Internet connection to link participating repeaters worldwide.

EchoLink is the most common method of linking and is exclusive for licensed hams only.

Let's say you want to chat with someone over in Israel, for example. You use your radio's keypad to send a tone to the local repeater, asking it to connect to the participating repeater in Israel you want to access. If the remote repeater is open for connection, the two machines will be linked together via the Internet.

When you speak into the local repeater, you will be heard locally of course, but your voice will also be transmitted to the remote repeater via the Internet where it will then be retransmitted over the air at the remote site, allowing you to begin a QSO with an Israeli ham at the other end.

By this time, there are, no doubt, a number of "real" hams reading this who are anxiously clutching

their chests in pain, ready to decry the death of ham radio once again. We'll pause for a minute to let you pop a nitro pill and recover...

Better now?

Good.

No, this is not "pure" DX by any stretch of the imagination. Most of the path between our two hams is covered via the Internet rather than wireless communications, except for the short hops between each ham and his or her local machine.

You will never qualify for DXCC using EchoLink – nor should you. And the purists will insist that using the Internet to communicate is not amateur radio. But before you make up your mind, consider the possibilities.

With EchoLink, anyone from Technician on up can use a simple VHF or UHF radio to do DX ragchews and actually get to know the ham on the other end for a change. Using this mode, you can do much more than just a quick exchange for the log so the next person in the pileup can also put "that rare one" into the log.

If you are looking to make a "real" HF contact, EchoLink can help here as well. You can use it to locate a willing ham in the desired country. Then, the two of you can pick a band and frequency, orient the antennas, and give it a go. "Can't hear me on 40? Wanna try 20? You mind recording my signal and sending me a .wav file so I can hear my DX signal?" The possibilities are endless.

How about using EchoLink for emergency communications? Using a local EchoLink repeater, you can hop to stations outside the disaster area handling emergency traffic. SkyWarn is already using EchoLink extensively.

But the most intriguing use of EchoLink is for the recruitment and retention of new hams. A Technician licensee can experience the thrill of ham radio as soon as the license arrives. He or she does not have to wait for a general ticket and an expensive HF station to begin enjoying more than the local repeater traffic (such as it is).

Of course, there are those who will argue that this gives the new ham no incentive to upgrade, but Dan Musten, KD4RAA, of the Musten Repeater Group says that simply is not the case. His group sponsors several area EchoLink repeaters, and he says that a number of the *young* Technicians who have tasted DX on his machines have gone on to upgrade just so they can chase DX "the hard way."

These young hams may not give a rat's hairy backside about CW, but they know radio, they know computers, and they are combining the two to advance the radio art. If ham radio thrives, it will be because of these innovators.

But you don't need to know the first thing about computers to use EchoLink. You don't even have to own a computer. All you need is a "real" radio and a willingness to try something new.

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## Antenna Tuners – Do They ?

by Earl Spencer, K4FQU

I am sure that many of our newer licensees and perhaps quite a lot of old timers also, are laboring under false impressions regarding antenna tuners. There is only ONE true antenna tuner. That is YOU! Antenna tuners DO NOT TUNE ANTENNAS. Nothing can tune an antenna except by physically changing or alternating the structure itself and only the builder can do this.

There may be a few mechanical devices out there that can physically change an antenna structure but they still need a human to tell them that. Today's and yes yesterdays "antenna tuners" only fool your transmitter into believing it is looking at a perfect match or at least a good match. And indeed they are looking at a good match if the tuner is tuned correctly, however all this is done right in that little

(or big) box and has virtually no effect on the feed line connected to it nor the antenna at the other end.

The structure remains the same; the SWR remains the same. All the transmitter looks at is that little box, and it has a smile on its face because it is "tuned" so to speak. What happens is that the capacitive & inductive load within the "tuner" has been changed so that it is resonant with the frequency that the transceiver is operating on. The antenna or the SWR on the coax feed line has NOT CHANGED. An antenna CAN BE TUNED if one puts a capacitor right at the antenna feed point and tunes it to resonance, in which case the SWR on the feed line will change.

This has been done however it is not an easy job. The losses on the feed line are not that severe on HF to even worry about a tuner at the antenna. What your tuner is actually doing is making the transceiver

operate at its peak efficiency, with little or no damage potential to the finals. High impedance's (SWR readings) can harm a final in your transceiver so if

your antenna is grossly mismatched then a tuner is recommended.

The best tuner is a well-built antenna, which is resonant or nearly so to the operating frequencies.

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## Care and Feeding of your Pet Ham

An educational excerpt for XYL's

By Ron Fields, W5WWW



Pet hams are so intelligent they often seem human, but they can be difficult to raise. Only someone with great patience should attempt it. In case you do, here is a guide to the basics.

**Living Area** -- A pet ham needs a private nest area, an entire room where it will not be disturbed. Your pet ham will spend many happy hours alone there with its treasures. -- boxes, wires, bits of metal, glass, paper, etc. that it will bring home whenever it ventures out. You will want to encourage your pet ham to confine its activity to this room to prevent the entire house from being subjected to noise, clutter and the boring of holes in the walls.

**Expenses** -- Keeping a pet ham is expensive, but, unlike most common pets, a pet ham can be trained to work outside the home for a few hours each day. It

may even bring in enough money to offset its expenses.

**Feeding** -- A well-behaved pet ham will eat with the family occasionally, but it will feel more comfortable and secure taking its meals in the nest room. You must be sure your pet ham is well supplied with food and drink during the long periods it spends alone in there, even if it does not beg or whine.

**Obedience Training** -- A pet ham can be trained to perform simple tricks, the easiest and most common being "sit" and "speak" Do not be alarmed if it practices them for hours at a time in the nest room.

**Health Problems** -- The pet ham typically suffers lower back pain and minor throat irritations from too much sitting and speaking, but health maintenance costs tend to be minimal.

**Travel** -- Your ham pet will gladly travel with your family by car or even by air, if allowed to bring along certain familiar items from the nest room. Most pet hams enjoy trips to places where they can meet pet hams from other families.

**Breeding** -- If you plan to breed your pet ham, you should do so as soon as possible after you get it. As a pet ham matures, it becomes increasingly reluctant to engage in activities not associated with its nest room collection.

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## Tesla's Radio-Controlled Boat

On May 18, 1899, Nikola Tesla demonstrated a six-foot-long radio-controlled boat to members of the Chicago Commercial Club. He had designed and built the boat the previous year, but only few people had seen it prior to the Chicago Commercial Club demonstration. Club members saw that he could remotely start the boat's motor, switch flashing boat

lights on and off, and navigate around a miniature lake that he created for the demonstration. Individuals in the crowd shouted-out commands that he sent wirelessly by radio, so the astonished crowd could see that the boat actually was being wirelessly-remotely-controlled.

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