

10/15/98

# THE YAVAPAI AMATEUR RADIO CLUB PRESCOTT, ARIZONA VOL 8 - No. 10

## DM-34 OCTOBER 1998

The Yavapai Signal



### WELCOME TO THE YAVAPAI AMATEUR RADIO CLUB'S NEWSLETTER

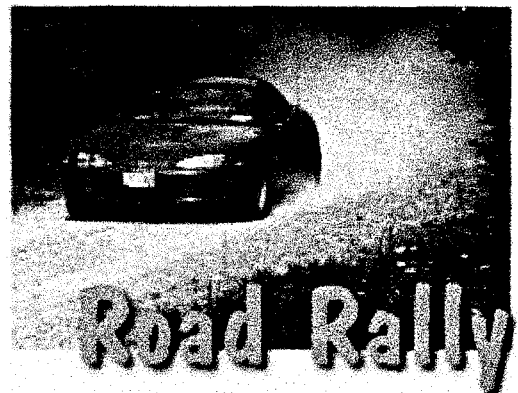
The Yavapai Amateur Radio Club is an ARRL affiliated club. The club participates in many activities in the tri-city area including providing communications for local events, emergency communications, volunteer exams, and promotion of the hobby throughout the community. Membership in the YARC is open to any interested amateur or non-amateur alike. The YARC meets at 7:00 PM local time on the 3rd Thursday of every month at the Granite Mountain Middle School, 1800 Williamson Valley Rd. in Prescott. It is about 1/2 mile north of Iron Springs Rd and all amateurs and non-amateurs as well are invited. Programs of interest are included as part of the meeting. The weekly NET is held every Wednesday at 7:00 PM local time on the 146.880- repeater. All amateurs are invited to participate. The Yavapai County ARES/RACES NET is held on Monday nights approximately at 6:45PM local time on the 147.220+ repeater on Mingus Mtn.



### ELECTIONS NEXT

**MONTH!** Just a reminder to all members that election of officers will be held next month. The positions are for 1 year and may be held for a maximum of 2 years, so Bob-K7KOL and Lloyd-WA6ZZJ will not be running again this year. A nominating committee will be formed and anyone interested in running for the positions should make their intent known to the committee. The committee may also scout the membership for prospective candidates. Their final recommendation will be made to the board at the November meeting. Let's hope we can continue the outstanding

leadership we have had, which will ensure the continued success of the club in the future. Be sure to attend the November meeting and cast your vote!

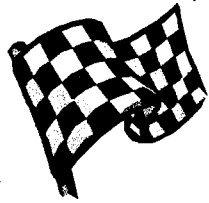


### SCCA PRESCOTT FOREST ROAD RALLY

I want to say **Thank You** to all who did such an outstanding job on this years Road Rally. Rob Cherry, local rally chairman, also says thanks to all the workers. You handled both mishaps just as they should be. In the midst of the confusion on stages 1 and 7 all hung in there and made things work out. The driver who died has a history of heart problems. He had a stroke before the accident. The call for the helicopter was made within 17 minutes after the accident, which he felt was good. It was the helicopter who was slow. The winner was car 18, 2nd was 16, and 3rd was 43, a local car. ESPN will show the race on Nov. 15.

This rally is part of the SCCA(Sports Car Club of America), which is the national sanctioning organization. My thanks to the following who helped out:

- |              |  |              |
|--------------|--|--------------|
| Fred-N7PJN   | Kris-KC7UNK                                    | Pen-KJ7KL    |
| Chuck-KB7NQC | Lee-KC7CBK                                     | Glen-W6KNX   |
| Frank-WA6JBV | Bill-W6HDP                                     | Jim-WB0QLO   |
| Ginger-AB7SK | Dale-N7XFD                                     | Dave-N6WSZ   |
| Tony-W7PCU   | Terry-KB7TRE                                   | Bob-WB7RRQ   |
| Jerry-KG7ZF  | Glen-WA7AEY                                    | Bob-K8EQC    |
| Joe-KC7MTW   | Pat-KC7VXR                                     | Steve-KC7TIL |
| Gene-N7LYX   | Nate-WA6HJK                                    | John-N3EFG   |
| Gary-KB7TRC  | Bob-KC7AWH                                     | Walt-KB7NCP  |
| Bob-K7CJW    | and.....Bill-W2YAV for the use of the repeater |              |



Bob Tilman, K7CJW

**YARC OFFICERS for 1998**

Bob Kane, K7KOL	President*
Lloyd Halgunseth-WA6ZZJ	VicePresident*
Kris Bearscove-KC7UNK	Secretary*
Fred Schefflette-KC7TIN	Treasurer*

**YARC BOARD OF DIRECTORS**

\*Includes Club Officers

Bob Rosevear WB7RRQ	Pen Brown KJ7KL
Tony Masvidal W7PCU	Frank Horneff WA6JBV
Terry Pemberton KB7TRE	



**UPCOMING EVENTS OF INTEREST**

▶ October 17-18 Boy Scouts JOTA (Jamboree On The Air) Various frequencies and locations.

▶ October 24-25 CQ WW DX Contest-Phone


▶ Nov 7-9 ARRL November Sweepstakes-CW

▶ November 14 VE Testing, Blind Center, Prescott. For further information contact John Wilson-KM6BF at 636-1228 or Dave Rutledge-W9KRQ at 541-1225

▶ November 21-23 ARRL Nov Sweepstakes, PHONE

▶ December 4-6 ARRL 160-Meter Contest

▶ December 12-13 ARRL 10-Meter Contest  
 More detailed information on Contests and Special Events can be found in most amateur publications such as QST, Worldradio, and others.



**Club Repeater**

The local 146.880- MHz repeater is the official adopted repeater for the YARC. It is located on the hill above Willow Creek Rd and requires a PL of 100.0 Hz. There is a second repeater on Mt. Francis on 147.040+ MHz and also requires a PL of 100.0 Hz. Coverage of the 2 repeaters varies, but both cover the local area quite well. Many thanks to Bill Kafka, W2YAV for the upkeep and use of the repeaters.



**SEPTEMBER MEETING**

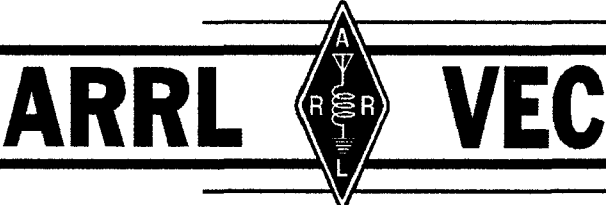
The meeting was called to order at 7:02 by Secretary Kris Bearscove, KC7UNK in the absence of the President Bob Kane-K7KOL, who was in Texas, and Vice President Lloyd Halgunseth, WA6ZZJ, who attended the meeting but is recuperating from recent surgery. There were 25 in attendance. The minutes of the August meeting were accepted with a correction to Bob Tilman's call sign. The treasurers report was given by Fred Schefflette, KC7TIN and the club has \$508.39 and the refreshment fund \$53.20.

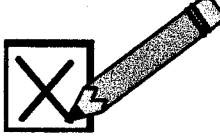
**OLD BUSINESS.** Lee Cunningham, KC7CBK updated the club on the antenna ordinances. The matter went before the Planning & Zoning Commission of Prescott Valley on the 14th, and will be published prior to a final vote. The ordinance exempts amateurs, as does similar ordinances in Chino Valley. Bob Tilman, K7CJW previewed the last minute plans for the Prescott Forest Road Rally, which will be held Friday October 2 and Saturday October 3. Times for the stages are set, and Bob outlined the various stages and locations where members will be set up. Lloyd Halgunseth updated the club on the combined ARES/RACES program, which the Verde Valley members are now being updated on. Frank Bennett, N7VOJ has information about the proposed website for the club, with a few possible addresses. The preferred choice for a web address will be [www.yarc.org](http://www.yarc.org) which will be hosted by ERAU.

**NEW BUSINESS.** Bruce Jaeger, KC7NVN announced that Frank, KJ7VA is home recuperating from surgery. Kris Bearscove read a little information submitted from new members about their equipment and how they got into amateur radio. The meeting was adjourned at 7:55 for the refreshment break. The 50/50 raffle was won by David, K6UWV who donated his \$11.50 to the Granite Mtn Middle School Club.

The evenings program was presented by Rich Oliver, KC9GQ. Rich is a long time amateur and works at the Lowell Observatory in Flagstaff. His program focused on the rarely covered early days of amateur radio in which amateur radio was only given a small portion to operate in, using spark gap transmissions. CW was allotted to portions of the bands in 1923. Although ham radio started in the early 1900's, with names like Armstrong and DeForest and other pioneers, not much progress was made until 1924 what amateurs were allotted new bands, giving them, access to 80, 40, 20, and the old 5 meter band. Amateur communications were shut down

...juring WW1. In 1926 crystals were introduced. Rich has restored an old radio his father built. The restoral project began in 1989, and the radio had to be almost completely rebuilt from scratch using a few notes that were tucked away in a magazine. It is now a functioning CW and AM transmitter, which puts out about 2W. Rich also displayed some memorabilia from his fathers collection of QSL cards and other items of interest. We thank Rich for taking the time to come all the way from Flagstaff to Prescott and share his thoughts and equipment with our club.





### Volunteer Examiner Testing

The final testing date for 1998 will be Saturday November 14 at 10:00AM at the Blind Center 440 N. Washington St. Prescott. All those attending for tests must have **ORIGINAL** license and a copy, Original JSCE's and 1 photo ID. VE's remember to bring your badge!

Special test sessions may be accommodated according to demands, as needed. The test fee for 1998 will be \$6.35. Further information can be obtained by contacting John Wilson-KM6BF at 636-1228 or Dave Rutledge-W9KRQ at 541-1225.

**YOUR LOCAL PRESCOTT AREA VE's**

AB7KE Joan Tremper	AB7KF Bob Nichols
AB7NK Mary Miraldi	AB7VH Ruth Enabnit
K7KOL Bob Kane	KA7NGK Don Broadston
KB7FRV Leonard Beers	KC7AGL Don Muller
AB7SK Ginger LeGendre	KK7JH Billy Peters
KG7OL David Miller	KI7EB Bill Thrift
KI7MA John Dawson	KJ7DX Matt Strandberg
KJ7KL Pen Brown	KM6BF John Wilson
N7VG Vern Gregory	W2YAV Bill Kafka
W7DC Bob Harkey	W6HDP Bill Jackson
W9KRQ Dave Rutledge	W7HP Jim Perrone
WF7J Walt Loesche	

## THE NEWSLETTER



If you have anything to share, please feel free to submit it for inclusion in the newsletter. We welcome your comments, stories, personal experiences, or other items related to the hobby. Send e-mail to:

**km6bf@primenet.com**

Occasionally we will have articles from other clubs newsletters.

## FROM THE SANTA CRUZ (CA) COUNTY ARC's "SHORT SKIP" Newsletter

### PREZ SEZ:

Labor Day has passed. Fall is around the corner. Propagation is up. Let's get busy! On the last day of August, the solar flux value was 178.5, the highest since February 1993. As we head toward the Fall equinox, good openings toward Europe before noon local time should be common, as well as to the southern hemisphere later in the day, with South America first, and the Pacific later. Ten and twelve meters should be getting better as the days get shorter and the solar flux rises. It's time to get "radio-active" (as some Monterey NPSARC members are prone to saying hi).

What's interesting you in amateur radio these days? What kinds of fun are you having? There's certainly lots of stuff going on out there. Get yourself a piece of that action! The ARRL has a new "members only" section of their web page. You can surf to their home page and sign up for the "Extra" section from there. It's easy if you have web access. Lots of good news and info.

The proposed changes in the FCC licensing structure are close enough that the Question Pool Committee has decided to halt their work on the license examination question pools until the changes are in place. They say the changes could be so great that they'd be wasting their time to continue right now. Have you commented to the FCC on the NPRM (rulemaking proposal) yet? The FCC just released an "errata sheet" on that proposal to clarify it a bit. Tell them what you think! They are asking for your opinion.

September 19 is Amateur Radio Awareness Day (and IARU World Amateur Radio Day)! It's time to promote Amateur Radio and elevate public awareness of the hobby. You can write an article for the paper, establish a "Field Day" type station in the mall or park, or perhaps make a presentation before a civic group. Take time to acquaint the public with Amateur Radio. For publicity kits and ideas, contact Jennifer Gagne, N1TDY, at ARRL HQ; tel 860-594-0328; e-mail jgagne@arrl.org. We'll have a club breakfast on Sunday October 4 at 9AM (that's right, we'll try a Sunday morning for a change, to accommodate those who can't ever do Saturdays) at Country Waffles Restaurant, 1970 Freedom Blvd (in the Albertson's shopping center at the intersection of Airport and Freedom Blvds). The food and decor were nice last time we met there.

See you at the club meeting on Friday night!

Ñ Cap, KE6AFE



### WE GET LETTERS!

Occasionally we receive correspondence worthy of reprinting for our members benefit.

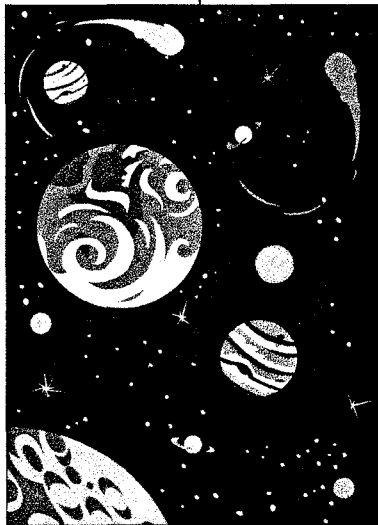
*Sorry, nothing in the mailbox this month.*

# Leonid Storm Could Wreak Havoc - Bill Sepmeier

**The Annual Meteor Shower Could Be Huge This Year: Will Radio Satellite Service Suffer? There's a lot of business up there in birdland, and not a lot of backup.**

Every fall, around Nov. 17, watchers of the night skies get a special treat - the Leonid meteor shower. Seeming to originate from the constellation Leo, hence the name, tens of thousands of mostly tiny bits of cosmic detritus light up the skies, as the earth passes again through the tail-track of the comet Tempel-Tuttle. Much to the delight of millions below, who need but look up for 'this free

celestial fireworks show. Tempel-Tuttle orbits the sun once every 33.3 years, and when the track is fresh, the annual Leonid showers often become full-fledged meteor storms. The numbers of meteoroids in the stream are determined by calculating something astronomers call the zenithal hourly rate, or ZHR. In an "off-year," when the comet is out in the inky depths some-where, this number seems to average between 1,000 to 10,000 -- that's 1,000 to 10,000 meteors per hour. Back in 1833, one of the most active years ever recorded the ZHR was up past 100,000 per hour. In 1966, the last time Tempel-Tuttle passed by, the ZHRs were above 150,000, or more than 7,000 times the normal meteor shower flux. That's a lot of little sand particles in an area generally pretty free of them, and because the duration of the earth's intersection with the main meteoroid stream lasts for about five hours, the sum can easily run up into the millions. It is impossible to predict the intensity of the 1998 or 1999 Leonid, because there are few accurate means to measure the stream's content until we hit it. But the general consensus of astronomers is that we should be in for quite a show. Some experts say that the coming November 1998 Leonid might provide a very nice warm-up for '99; some say that this year's event will be *the* show. No matter which year ends



up the winner, everybody agrees: When it comes to satellites. there is cause for concern.

**Risk to Radio** Because a lot of radio stations these days use off-premise network programming in the evenings as they operate unmanned at night, many radio people will have plenty of time to wander outside and take a leisurely look up at the Leonid storm. If your station is one of these unmanned wonders, I suggest you bring your cooler and lawn chair down to the plant, where you will be close by. Why?

Well, beyond the normal chance that a communications satellite will be hit by a stray piece of space spooze, the professionals who calculate such things have increased their *estimates* of the chances of taking a hit on Nov. 17, 1998, and again in 1999, and again in the year 2000, by more than 1,000 times "normal." M. Beech, P. Brown, J. Jones and A. R. Webster co-authored a paper called "Meteor Storms: An Assessment of Satellite Impact Probabilities," which is available on the Net at [http://leroy.cc.uregina.ca/%7Eastro/leonids/Leo\\_2.html](http://leroy.cc.uregina.ca/%7Eastro/leonids/Leo_2.html). They write, "From an historical perspective we might expect a ZHR of a few tens of thousands at storm

maximum and a storm duration of about five hours. Under these circumstances a fluence  $10^{-5}$  meteoroids/m<sup>2</sup>, to a limiting mass of  $10^{-8}$  kg, may be realized. With this fluence, an impact probability of ~0.01 percent will result for spacecraft with an exposed surface area of 10 m<sup>2</sup>. The present on-orbit U.S. Space Command satellite catalogue contains about 8,000 objects of which some 6 percent are functional satellites. At a limiting mass of  $10^{-10}$  kg and a fluence  $\sim 10^{-5}$  meteoroids/m<sup>2</sup> we might expect five to 10 functional satellites to be hit by Leonid meteoroids during a storm (assuming an average spacecraft area of 20 m<sup>2</sup>)."

**Come again** Whoa! Say that again, guys? "We might expect five to 10 functional satellites to be hit by Leonid meteoroids during a storm." That's what I thought you said! OK, this includes all of the satellites in orbit, including LEOs, MEOs and GEOs, military and commercial, but still, that's a lot of potential hell to be raised within a five-hour window! William Cooke of the Marshall Space Flight Center says the encounter circumstances for the upcoming 1998-2000 period are very similar to those of 1865-1866.

*(continued on Page 5)*

**Head-on collision** "Based on records of that time, we may expect Leonid rates on the order of 1.000 meteors per hour for the years 1998 and 2000 (provided a storm occurs), with a peak rate of 5.000 meteors per hour in the early morning of Nov. 18, 1999," Cooke stales. "The worst-case scenario is to assume a rate equal to the 1966 storm, or 150.000 per hour." Spacecraft operators are taking the event seriously, because they've never gone through a full-fledged Leonid storm before. (Remember, the last one was in 1966, and there were relatively few artificial satellites in orbit back then!) Additionally, Leonid meteors are very fast, with typical velocities of 70 km/sec, thus spacecraft can be struck on trailing edges. The reason is that particles from Comet Tempel-Tuttle move in a retrograde orbit about the sun, so the earth collides with them "head on." Nearly microscopic particles, traveling at the velocity these puppies will be traveling at, can "sandblast" a solar panel enough to render it inoperative, and, according to the estimates above, space will probably be thick with them during a Leonid storm. So there is little reason to be laughing.

**Orbital dependency** Further, spacecraft might be damaged not by the "sandblasting" of particles but by the buildup of excess plasma, or static electricity, caused by the proximity of and bombardment by so many particles. This type of excess charge could damage critical control computers and other systems required for spacecraft positioning and operations, and has been the cause of spacecraft failure during other meteoroid bursts in the past. As we all know, having experienced the recent loss of Galaxy IV, there's a lot of business out, there in birdland. not a lot of backup ready to take over in the event of a loss. GE Americom plans to reorient satellite solar arrays to minimize panel exposure to the meteoroid stream. PanAmSat and Hughes will likely do the same on the satellites that can be adjusted in this manner.

**Safety precautions** GE Americom engineers have estimated that such repositioning should reduce the probability of a particle collision with any one of their satellites to approximately 1 in 100,000. GE goes on to say, however, "The effect of any such particle collision would vary depending on the actual size and velocity of the particle and the point impact on the satellite." If the ZHR of the coming storm equals the 150.000 of 1966, then GE's odds of 1 in 100.000 don't look so good. While none of the spacecraft operators are saying so, there may be some scheduled service interruption, on some types of spacecraft, as managers take action to minimize the possibility of particle collisions with sensitive components. Networks will have to work closely with satellite operators and affiliates to ensure

that they are covered in the event preventive measures interrupt programming.

Nobody really knows how the satellite industry will fare. Nor will they be able to predict the 1999 storm better after the 1998 "run-through." The stream will be completely different when the planet passes through it a year later, due to the influence of the solar wind during the interval. All the industry knows is that the coming Leonid storms probably are a bigger potential problem for them than Y2K, and that there's not really a lot to be done about them but wait, ice down a six pack. and head up to the roof to watch the fireworks

...

*Bill Sepmeier is a systems engineer, communications network consultant, free-lance writer and public speaker. You can reach him via e-mail at [bill@mountainmax.net](mailto:bill@mountainmax.net)*

*[Thanks to Tony Masvidal for this interesting article taken from RADIO-WORLD (not to be confused with amateur publication WORLDRADIO!)]*



From the FAQ (Frequently Asked



Questions) files

**HOW DO I CONVERT A MOBILE RADIO INTO A REPEATER?** Instructions for Duplexing a G.E. MVP by Bill Putney WB6RFW

Part 1 of 2

I know nobody asked but I did this for someone else and I thought it would be nice to share the information. A lot of clubs these days have a need for a new repeater and what with the economic thing don't have a lot of money to spend. There is a lot of junk being marketed as ham repeaters (i.e. Spectrum Communications) for horrendous prices. I thought it would be nice for people to have the choice to do the Ham thing and save a bunch of money.

These radios are available all over the place for very modest prices and make great repeaters. They work on our mountain tops without being fried by the other R.F. around. Better yet they are a good neighbor. They put out power on just one frequency at a time and the receivers are selective enough to work on 12.5 Khz split channels (though most Japanese portable radios won't). The transmitters are very clean if tuned up according to G.E. instructions. Transmitter tuning only requires a

*(continued on Page 6)*

wattmeter, dummy load and a VOM. I have tuned the receivers up with just a weak signal on channel but I do recommend a signal generator. The MVP's will put out ~60% of it's rated power (there are several models ranging from 5-35 watts) continuous duty. This isn't a lot of power but at least when you add an power amp to it the amp won't be multiplying garbage.

**P.S. No I don't work for a company that sells MVP's nor am I interested in duplexing any more for other people. I really love these little puppies and I have them running all over the place but I've done 20 or so and I'm not as young as I use to be. :) These instructions will work for MVP's on any band.**

Before you start, test the radio completely to establish a benchmark for post conversion testing. It is better to find any problems that exist in the basic radio and fix them now. After the conversion you only need to find the problems you created.

MVP C.G. encoder/decoders are pretty useless after the radio has been duplexed so now is a good time to get rid of it. Don't forget to replace the resistor between H1 and H2 on the System-Audio-Squelch board (The SAS Board). Most of the duplexing is done on the SAS board.

- 1) Remove the SAS board from the radio.
- 2) Cut the printed circuit land that connects J904 pin 2 to U902 pin 7. The best place I've found to do this is right near U902 pin 7 on the solder side of the board. There is a land that goes from U902 pin 7 to a via pad. This trace is only about 1/8" long and is shown in gray in the MVP manual Outline Diagram. I use an Exacto knife to make these cuts. Make two cuts perpendicular to the run of the land about 1/16" apart then remove the land in between by prying up one end and peeling the copper away. This disconnects the receiver oscillator control line so that the U902 no longer can turn the oscillator off during transmit.
- 3) Place a jumper between J904 pin 1 and pin 2. I do that right at J904 on the solder side of the board. This puts regulated 10V back to the receiver osc. control line so that the oscillator is always enabled.
- 4) The next cut is a little harder to find. The line on the schematic that connects the junction of CR901, U902 pin 6, and J906 pin 5 to the junction of R905, R906 CR905, C906 and U901 pin 7. On the schematic it's a nice straight vertical line just above U902 but

on the board it runs all over the place in and out of via's, from the solder side to the component side and back again. The place I cut it is on the component side of the board near J905. Set the SAS board on the bench with the component side up and the board oriented as shown in the MVP Manual Outline Diagram. On the Outline diagram you can see two component side lands that run parallel along the bottom edge of the board the whole length of J905. The bottom most land connects H16 to J906 pin 4. Don't cut this one... The one you want is the next one up. It kind of looks like and S on the board and runs between J906 pin 5 and a via just below U902 (next to H5). I make the cut near the end (pin 7 end) of J905 before it makes a turn and goes up toward U902. Make the cut as described in 2) above.

5) All of the I/O lines to the radio can be found on the SAS board and should be connected before you put the board back in the radio.

PTT is at H17. This is a ground to transmit line.

COS is at J912. This line is ~0.1V when the radio is squelched and ~9.0V unsquelched. Don't try to run a relay from this COS line. I'd use a CMOS gate to buffer it. If you're using a modern controller chances are that it uses CMOS logic and the buffer isn't required.

Mic in is at J913. This line has mic bias on it and should be capacitor isolated. It takes about 2V P-P to drive the radio to 4.5 KHz deviation.

Receiver audio is found at H16. This is unprocessed audio. It is not squelch gated and is not de-emphasized. There is ~4V P-P with 4 KHz deviation on an on frequency signal applied to the receiver. This should not be loaded by less than a 10K input.

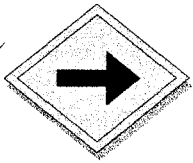
6) Put the SAS board back into the radio.

7) Unscrew and unsolder the SO-239 antenna connector and remove it. (If this is a UHF radio I'd throw it away and get an N connector but it's up to you). After the conversion this will be the transmit antenna connector.

8) Unsolder and disconnect the coaxial jumper at H2 on the Filter board. Disconnect P1 (this is the antenna relay control and can be cut off and pulled out of the harness or left alone. It won't do much when you're through).

**Concludes in part 2 next month**

*Copied from the QRZ! Windows Ham Radio CD-ROM*



SAY WHAT? FROM THE "I can't believe I heard it on amateur radio" files:

Two old codgers discussing the proposed licensing changes:

- #1 "Well, this won't help my code speed any".
- #2 "Wait are you going to do, wait until you grow up?"

"There's no sense in replacing my antenna, it'll just blow down again"

"All my neighbors know when I'm on the air. Every time I transmit, my outside lights come on!"

Joe: "When you open the squelch on your radio, where does all that noise come from?"

Bob: "The speaker!"

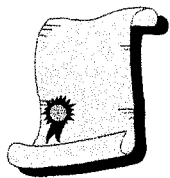
"The manual that came with my radio is too hard to understand. Can't they write them for us dummies?"

"I'd go to breakfast with those guys but nobody ever picks up the tab!"

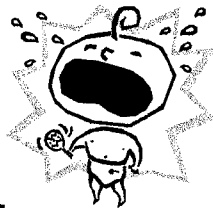
"The repeater works pretty good here, but I can't get into it very good!"

"I wanted to take my HT on vacation but my wife said there wasn't room for it!"

"My HT really gets hot when I talk. Is there a fan or something I could put on it to keep it cool?"



### STRICTLY EDITORIAL



There are a lot of thankless jobs out there. Sometimes good things happen, but they often come and go without much fanfare. I thought I would take this stand on the soapbox to offer my thanks to Bob Tilman, K7CJW who has now completed his 7th year of organizing club members to provide communications for the Prescott Forest Road Rally. It may only happen once a year, but Bob has managed to put it together every year in fine fashion. He puts in countless volunteer hours, including

meeting with race organizers, signing up other volunteers and performing pre-race radio testing on the course weeks before the race takes place. I really don't know how much time Bob spends on this project, but he always manages to make it work right. A hearty "Hats Off" to Bob for the fine job he does every year in making the event a success. Thanks Bob!

John Wilson, KM6BF-Editor



### OTHER NEWS OF INTEREST from Pen Brown, KJ7KL

#### WORLDRADIO's NOBLE ON RESTRUCTURING

Worldradio Magazine publisher Armond Noble, N6WR, does not think the current effort to restructure the United States Amateur Radio service is necessary or wanted. Writing in the October issue of his magazine, Noble says that he opposes the dumbing down of Amateur Radio:

"Everybody's using about the term Amateur Radio calling it dumbing down, dumbing down. So, I asked to anyone listening to your broadcast, Are you really proud of so many people think that Amateur Radio is dumbing down? And do you want this?" Armond Noble, N6WR

Noble compares becoming a ham with joining the Marine Corps. He says that in both cases it is a matter of upholding a lot of traditions. He also indicates that doing so has never been easy:

"Who values what's easy. There is no value attached to easy. There is no self pride. I think we're missing a lot self pride these days in overcoming obstacles." Noble

Noble says that making it easy to get into ham radio is not going to bring in a lot of young hams. He says that kids are looking for things that provide a challenge. He also says that learning the Morse code as one of the best:

"One thing about the Morse code that it has done for many young people is that they saw it. They saw it as a challenge. They thought it was hard. They went and did it and they said Oh look, I can do that. Maybe I can learn to type, or I can play the trombone or what ever the next thing is. Instead of this wallowing around and I can't do that." Noble

Noble realizes that he is the lone voice in the ham radio publishing arena that opposes restructuring, but he says that the quality of ham radio is far more important than the quantity of hams on the bands:

"We had this No-code Tech thing. They said this will, this is the salvation of Amateur Radio and 40,000 people got licenses. Very few got on the air. Very few upgraded. Very few bought equipment. And they haven't learned from that." Noble

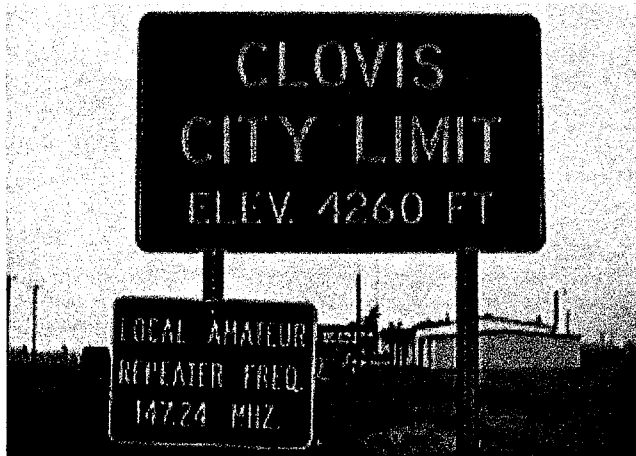
It does not matter if you support or oppose the current move to restructure ham radio. Before you file your comments to the FCC it might be a good idea read what N6WR has to say. His complete editorial comment appears on page 4 of the October 1998 issue of Worldradio Magazine. (Newsline #1101 9/17/98)

## PIRATE EMPLOYS BROADCAST ENGINEERING CONSULTANT

And finally, from the believe it or not file comes the story of an unlicensed broadcaster who wanted to know how many people could hear his signal. So he did what any broadcaster would do. He actually hired an engineering consultant to check his signal for interference.

According to an anonymous letter published in the CGC Communicator newsletter, the pirate hired an unnamed engineering firm to perform an interference analysis study for the frequency he was using. The consultant found that his clients signal did cause significant interference to two stations. Soon after, the unlicensed broadcaster received a summons to appear before the FCC. He was eventually issued a stiff fine. The consulting engineer writes that he doubts that the pirate operator used the report in his defense.

And oh yes. The unlicensed broadcaster was kind enough to pay the consulting engineer in advance. (CGC Communicator via NEWSLINE #1101 9/17/98)



**ROAD SIGNS.** Remember when we inquired about having the local repeater on road signs coming into town. Well, somebody did it in New Mexico!

## The President's Message

### FCC ADOPTS UNIVERSAL LICENSING SYSTEM

ARRL Bulletin 74 ARLB074  
From ARRL Headquarters  
Newington CT September 17, 1998  
To all radio amateurs

Amateurs can say good-bye to the familiar FCC Form 610 series. The FCC has adopted its long-proposed Universal Licensing System, which will replace the Forms 610 with a new Form 605, the Quick-Form Application for Authorization in the Ship, Aircraft, Amateur, Restricted and Commercial Operator, and General Mobile Radio Services. Applicants may continue to use the old forms for six months after the new rules go into effect, however. An effective date will be announced when the FCC issues the official Report and Order.

The FCC also adopted proposals to permit automatic reciprocal licensing of foreign hams wishing to operate in the US, pursuant to recent international reciprocal operating agreements.

The FCC said the ULS will "fundamentally change" the way the Commission receives and processes wireless applications and makes licensee information available to the public. The rules adopted September 17 will—in the FCC's words—"consolidate, revise, and streamline" license application procedures for radio services under the Wireless Telecommunications Bureau. The FCC last November began initial collection of licensee data to populate the ULS. Using the ULS, applicants and licensees will be able to file, modify, and renew electronically. Access to the ULS is via:

<http://www.fcc.gov/wtb/uls/>

When the FCC first aired its ULS plan, some licensees expressed concerns because ULS registration would require applicants to provide a Taxpayer Identification Number, typically a Social Security Number. In its public notice, the FCC assured that "all TIN information will be kept confidential."

The FCC's action consolidates 40 existing forms into four ULS application forms, including the new Form 605. Electronic filing in the ULS will not yet be mandatory for the Amateur Service. Hams will have the option of filing electronically or on paper. However, electronic filing via the ULS will be required for Volunteer Examiner Coordinators in the Amateur Service. Mandatory electronic filing requirements go into effect July 1, 1999 or six months after the use of ULS in a particular service—whichever is later.

An official Report and Order detailing the FCC's actions is expected to be released soon. The FCC's Public Notice is available on the FCC Web site at:

[www.fcc.gov/Bureaus/Wireless/NewsReleases/1998/nrw18040.html](http://www.fcc.gov/Bureaus/Wireless/NewsReleases/1998/nrw18040.html)



73 from Bob, K7KOL

## Packet, It's Alive

By Lee Cunningham-KC7CBK

I thought after the article about the packet meeting, that I would continue to keep you, the users, enthusiastic about packet. So this is the start of a column, which I hope will run every month with your help, the readers. I'll start by discussing the basics of packet and go on to more technical subjects if you want. Some of this might be old hat but it will serve as a reminder for the "expert users" and fresh information for new or "future" users.

The equipment: a good 2 meter radio, a good directional 2 meter antenna, a Terminal Node Controller (the heart of packet) and at least a 386-100MHz desktop or laptop computer (the brain) running Windows.

The basics: What is packet? If you're a computer user, you've probably connected to a Bulletin Board, BBS, using a modem. Instead of using the telephone wires, twisted pair, as your transmission medium you use the radio. The communication's software used to connect to the BBS changes to packet software. The modem is now the Terminal Node Controller, TNC. I'll get into more detail about each piece of equipment and software in the coming months.



think that the radio is the voice of packet. Almost any 2 meter radio can be used. I say almost because as you'll see a transmitter with "more power", as Tim "the toolman" Taylor says, is better. A five watt handheld transceiver will connect you to almost any repeater in the area. The repeater boosts your five watt input to 35-40 watts output. In packet you are transmitting simplex. In using the five watt handheld, if you contact someone locally, your ears boost the received signal to make up for the difference in the transmitter power of your contact. Not so with packet. The receivers sensitivity and the squelch setting determine what signals are heard. If you can't be heard, you'll have trouble connecting to the node or another user. As required by the FCC "Regs", use as much power as necessary to carry out the desired communication. To insure a good connection use at least 10-15 watts. You'll have less problems and the time spent waiting will be less.

I few things to think about when you choose a radio: I suggest a mobile radio and a power supply. The power supply will protect the radio from voltage spikes. A good AC surge protector will save the power supply. The mobile radio will be less expensive than a base station. A previously owned mobile radio will cost even less. Some of the mobile radios have an output between 10 and 35 watts. You don't need all the bells and whistles of a base station. It should have about a ten channel memory. There are at least that many frequencies in use by packet in the area. The investment in the radio should be minimal. A better TNC, computer, and software will make packet more fun.

I'll take questions from the readers, just call me at 520-771-2055, e-mail at leeco1@juno.com, or packet via KB7FRV.



**ARIZONA HAMS HELP LOCATE LOST TODDLER**

An Arizona toddler is safe, thanks in part to help provided by the Cochise County ARES/RACES unit. The team was activated around 8:45 PM on September 8 to assist the Sheriff's Office Search and Rescue unit in locating the lost 2-1/2 year old boy who had wandered away from his home earlier in the evening.

The unit deployed the County Emergency Response Van (ERV) to an area near the Cochise/Graham county line north of Willcox, Arizona, to assist in the search. Elements from several other public safety units—more than 75 people in all—also turned out.

Bob Hollister, N7INK, and Ron DeWillers, W1YYO, spent the night manning radios in the emergency response van and helped to keep track of the search teams as the vigil wore on. Just as the ERV relief team showed up to take over the day shift, the little boy was located by a county search-and-rescue dog team some two miles from his home in a cornfield. "Other than being tired, hungry, a little dehydrated, and thoroughly intimidated by the experience, the young man was fine," reports Arizona Section Manager Cliff Hauser, KD6XH. The youngster had spent about 15 hours in the fields trying to find his way back home.



Hauser said that eight amateurs were involved in the search effort.—thanks to Arizona SM Cliff Hauser, KD6XH

The Yavapai County ARES/RACES net is held every Monday night at 6:45PM on the Mingus Mtn. 147.220+

repeater. If there are any questions I can be contacted at (520)717-2706 or at [wa6zzi@northlink.com](mailto:wa6zzi@northlink.com) for email.

**Lloyd Halgunseth, WA6ZZJ-Yavapai County DEC/RO**

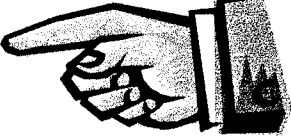
**(I would like to thank everyone for their cards, calls and best wishes after my surgery. They were all very much appreciated. 73, Lloyd)**

**AREA REPEATERS**


52.560- 53.040-	100.0 Hz C/S	Mt. Union (-500KHz) Airport (-1 MHz)
145.350- 145.370- 146.780- 146.880- 146.980- 147.000+ 147.040+ 147.140+ 147.220+	C/S C/S 91.5 100.0 100.0 100.0/162.2 100.0 162.2 C/S	Wildflower Mtn. Towers Mtn. Bill Williams Mtn. Prescott Flagstaff(Mt. Eldon) Mingus Mtn. Mt. Francis Flagstaff(Mt. Eldon) Mingus Mtn.
223.960-	127.3	Mt. Francis
442.150+ 442.350+ 447.650- 449.175	100.0 100.0 107.2 C/S	Mingus Mtn. Glassford Hill Mt. Francis Towers Mtn.

**ADDITIONS, DELETIONS AND CORRECTIONS APPRECIATED**



**WE WANT YOU!**

Membership in the Yavapai Amateur Radio Club is only \$12.00 for 1 year. Newsletters will be mailed only to those members not attending a meeting and current on dues. Those in arrears 3 months will be dropped from the membership list. Dues can be mailed to the club PO Box or given to the treasurer at any meeting.



**GOT ANYTHING FOR SALE? CLUB MEMBERS CAN LIST THEIR EQUIPMENT HERE FREE.**



**WEEKLY NET - WEDNESDAY NIGHTS**  
@ 7:00 PM 146.880- (100.0 PL) IF YOU DON'T HAVE PL, TRANSMIT ON 146.880 SIMPLEX WHEN THE REPEATER DROPS OUT.

**MONTHLY MEETING - 3rd THURSDAY**  
@ GRANITE MTN MIDDLE SCHOOL 7:00PM  
NEXT MEETING THURS. NOVEMBER 19 @ 7:00pm



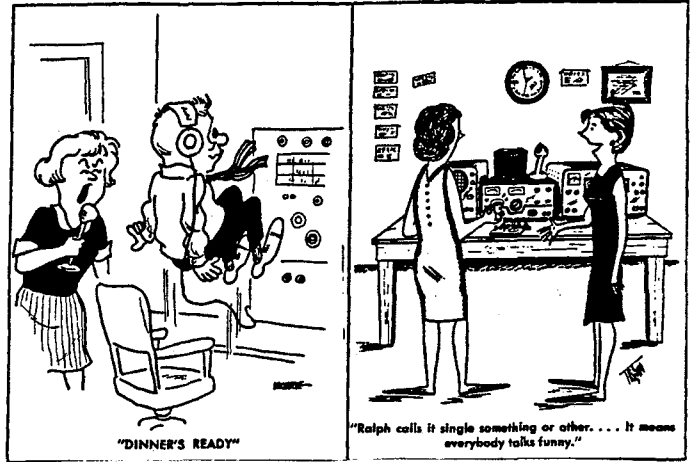
Wednesday Morning Breakfast-Iron Horse Cafe in Chino Valley. 7:00am. Informal-All are invited. Come and see Lloyd-N7QZQ pour coffee for everyone. Lloyd says "Support you local coffee servers!"

Thursday Morning Breakfast-Micheal's Restaurant in the Safeway Shopping Center, Prescott Valley. 8:00am. All are invited.

**SOME CARTOONS COURTESY OF  
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(A GREAT PUBLICATION-CHECK IT OUT!)

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PO BOX 11994  
PRESCOTT, AZ 86304**



*11920 - Review of our  
WEB PAGE*

*MICROSOFT - FRONT PAGE TO UPDATE  
WEB PAGE -*

- SCHOOL ACTIVITY FRI, NOV 20  
NEEDS VOLUNTEERS*
- NOMINATING COMMITTEE for OFFICERS  
PRES, VP, SECY, TREAS, PROG DIR & DIRECTORS*



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