



# YAVAPAI SIGNAL



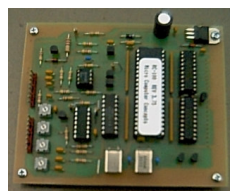
The Yavapai Amateur Radio Club • Prescott, Arizona • DM-34 • Volume 22 – No.9 • September 2007

## New Repeater Purchased for YARC

By Bob Smith, WB6ODR



Kenwood TK-750K2



MCC RC-100

Thinking about a new repeater?? When I first brought up this idea many months ago I had two goals in mind. First - making a smaller foot print at the site. Second - simply updating the equipment we have. I was later to find out that a smaller foot print would be in our best interest because the commercial FM radio transmitter that is operating there now will be changed out for a larger, more powerful, up to date transmitter very soon. As to the second point, we all should know that technology effectively replaces itself every 7 months now.

With these goals and a personal goal to not rush a project of this magnitude, I started reading anything I could on the internet about amateur repeaters. I joined several Yahoo groups having to do with amateur repeaters. I posted several emails where I asked for opinions on the different repeaters used around the country. Everyone had a favorite manufacturer and repeater model based on the need in their community. I formed an opinion based on much of this research and just today did another search on the Kenwood TK750K2 repeater. I found articles written in Italian, Russian, French and German to name a few. This alone tells me that the equipment is used all over

the world. One other fact that turned me away from Vertex Standard was the fact that the Kenwood is a rack mount radio that is designed for mountain top use.

Some of the front mounted options that are available, include a Flash Memory that does not get lost with a power outage, and the ability to select any of 16 different frequencies depending on the need and what is programmed into the radio. A very big item is the programmability by a personal computer.

The controller (shown above) is an RC-100 from Micro Computer Concepts, <http://www.mccrpt.com>.

After the equipment is burned in, while at my house, and mounted in a cabinet, I will contact Mark and set up a time to change out our existing repeater and controller. ■

*Welcome to the Yavapai Amateur Radio Club*

The Yavapai Amateur Radio Club (YARC) is an ARRL affiliated Special Service Club. The club participates in many activities in the tri-city area by providing communications for local events, emergency communications, and promotion of the hobby throughout the community.

Membership in the YARC is open to any interested amateur or non-amateur alike. Dues are \$20.00/year (Full-time students \$15). The YARC meets at 7:00 p.m. local time on the first Thursday of every month in the Technology Room 404, at the Granite Mountain Middle School, 1800 Williamson Valley Road in Prescott. It is about ½ mile north of Iron Springs road, 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 p.m. local time on 146.880- repeater. All amateurs are invited to participate, and visitors are always welcome.

The Yavapai County ARES/RACES Net is held on Monday nights approximately at 7:00 p.m. local time on the 145.290- repeater on Mingus Mountain. A PL of 127.3 is required.

**Club Repeater**

The YARC 146.880- repeater is located on the hill above Willow Creek road and requires a PL of 100.0 Hz. If you hear a 1400 Hz pulsing tone, the repeater is on backup battery power and usage should be limited to necessary communications. Our deepest gratitude to Bill Kafka, W2YAV for allowing us to acquire this repeater. ■

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## YARC Officers for 2007

### President

Terry Pemberton, KB7TRE  
kb7tre@cableone.net

### Vice President

Dick Hughes, W6CCD  
w6ccd@arrl.net

### Secretary

Pat Oliver, K7DUC  
joliver@commspeed.net

### Treasurer

Patti Halgunseth, KD7VBG  
kd7vbg@cableone.net

### YARC Board of Directors (includes Club Officers)

John Broughton, WB9VGJ  
Ken Severance, WA6AQK  
Richard Bozeat, KE7DTR  
Walter Schumann, KF6SPS

### Newsletter Editor

Joe Oliver, AC6AA  
joliver@commspeed.net

## Membership Count:



1st Thurs. in July .....	116
Gain/Loss.....	0
1st Thurs. in August..	116

## Minutes of August 2, 2007 Board Meeting



A Board Meeting was held at 1815 MST. Present were John, WB9VGJ; Pat, K7DUC; Richard, KE7DTR; Walter, KF6SPS; Patti, KD7VBG; Ken, WA6AQK, and Bob, WB6ODR.

**Training Material Expenses:** Jack, W7JLC has requested up to \$200 for

the purchase of training materials for instructors. It was felt that the cost should not be borne by the instructors. A motion was made by Richard, KE7DTR and seconded by Walter, KF6SPS, to give Jack what he needs, with a cap of \$200. The motion passed unanimously.

**Program:** Bud, N7CW will speak on WinLink tonight.

**Yavapi County Fair Booth:** Doug, KV8TD will report at the General Meeting.

**Possible Move of Williams Hamfest back to Flagstaff:** A number of e-mails have been sent in regard to this.

**Special Event Station:** For Nov. 17th, NRA's birthday, John will ask the club to select frequencies for this event to be held at Gunsite. John will send information to ARRL for publication. Certificates to be used were compared.

**Wed. Night Net Roll Call List:** Bob, WB6ODR will post a monthly update of the list on the YARC website. The Net Control is to send an updated list to Bob monthly.

**Hamfest:** Ken, WA6AQK will not be in charge of next year's Hamfest, but will give suggestions and guidelines to Terry, KB7TRE. Ken, Walter and Patti will work on the committee with Terry. The Chairperson will be decided upon by next month.

**YARC Repeater:** Bob, WB6ODR discussed repeater replacement and content of repeater fund. Bob has narrowed his selection down to a Kenwood TK-750K2, which is designed for mountain top use. Bob would like to start the ball rolling and purchase the Kenwood TK-750K2 and an RC100 controller. These would be tested thoroughly before final installation.

The Board adjourned at 1856 MST.

Respectfully submitted,

Pat, K7DUC

Secretary

## Minutes of August 2, 2007 General Meeting

John, WB9VGJ called the meeting to order at 1900 MST. The Pledge of Allegiance was recited and members introduced themselves.

**Visitors** Lois Diddams; Rebecca Riviere; Phil Bonnice, W8QNL, and Chris Hancock, KC6UUG.

**New Members:** A motion to vote in Jo Keener, KE7NSB as a new member was made by Bob, WB6ODR and seconded by Bob, KC8BOB.

The motion was approved.

**Meeting Minutes:** A motion to approve the General Meeting minutes of July 5, 2007, was made by Neal, KA7JAS and seconded by Doug, KV8TD. The General Meeting minutes were approved.

**Treasurer's Report:** Patti, KD7VBG gave the Treasurer's Report. The previous balance was \$1614.85 and the ending balance was \$1423.65. The Repeater fund has \$1124.00

The Treasurer's Report was approved.

### Committee Reports:

- **ARES/RACES/Public Service:** Lloyd, WA6ZZJ reported that the next training meeting will be on Saturday, August 4, and will be on WinLink.

Lee, KC7CBK, indicated that the Prescott Loop Challenge will be held on Sept. 16th. Twelve people are needed to work on that day. A sign up sheet was circulated.

John, WB9VGJ said that the busy season is coming upon us and the Prescott Valley Arts Fair will be on

September 15th and 16th. Sign ups will be at the next meeting.

Other public service events coming up will be on Oct. 5-6 - Road Rally, Oct.20 - The Diabetes Walk, and Rails to Trails in November.

- **IRLP:** Jack, W7JLC stated that it is up and running and being used.
- **Public Information:** Bob, WB7RRQ stated that the Road Rally is coming up. Send Bob an e-mail if you desire to volunteer.
- **Patches/Shirts/Badges:** Patti, KD7VBG has club patches for \$3.00; Dick, W6CCD has club shirts for \$19 for all sizes, except for XXL which are \$21. Name and call sign add \$2 to each, and Bob, WB6ODR has badges for \$6.75.
- **Club Repeater:** Bob, WB6ODR stated that for technology reasons he has been investigating several types of repeaters. The opinion today is that a Kenwood machine is best and does well on mountain top use. Bob would like to purchase the Kenwood TK-750K2 and Controller RC-100, and start testing for future use. \$1450 was the estimate for these two items. No other pieces were thought to be needed.  
  
A motion to approve the proposal was made by Ellis, KE7NAP and seconded by Pete, K6VVR. Discussion was held. The vote was held and the motion passed.
- **VE Testing:** Mary, AB7NK stated that nothing is scheduled as yet, but will be in conjunction with the license classes.
- **License Classes:** Jack, W7JLC indicated that classes will be held as follows: 9/29 -Technician; 10/27 and 11/3 - General; 12/1 and 12/8 - Extra Class. Jack needs volunteer instructor help for these classes. The Board voted that the club will pick

up any expenses up to \$200. John encouraged members to assist Jack.

- **Elmer/Technical Specialist:** Neil, KA7JAS indicated that everything was taken care of.

#### Old Business:

- **Club Family Cookout:** - John, W5VJH; Fred, N7PJM, and David, K6UWV were congratulated for the outstanding work they did on the Club Family Cookout. Location, food, and atmosphere were excellent. Hopefully, we will have another next year.
- **Yavapai County Fair:** Doug, KV8TD indicated that we are going to have a booth at the Fair, which will be on Sept. 20-23. We will set up starting on Sept. 19 and need help taking down on Sunday. A sign up sheet was passed around.
- **Special Event:** We will be participating with NRA on their 136th birthday celebration, which will be held at Gunsite Academy. John, WB9VGJ will send in information to ARRL for publication.

#### New Business:

- **Wednesday Night Net:** The Board proposed that the monthly roster will be updated by the current net control and sent to Bob, WB6ODR for publication on our website. The list of Net Controls also will be on the website.
- **Balloon Flights:** Jack, W7JLC will be teaching a group of teachers this weekend, so they can teach their students on balloon activities. Terry, KB7TRE was absent because he is attending the class. Five schools will be participating.

Tonight's Program will be on "WinLink 2000" and will be given by Bud, N7CW.

A motion to adjourn the business meeting was made by Richard, KE7DTR and

seconded by Ken, WA6AQK. The motion carried. The business meeting was adjourned at 1955 MST.

The 50/50 drawing was won by Don, KE7MQB, for \$28.

Respectfully Submitted,

Pat, K7DUC  
Secretary

## Need a Hand?



If you need assistance, we want to help you. If you are just starting out in ham radio, or simply have run across something that you could use a hand with... technical assistance or answers to questions about the Yavapai Amateur Radio Club, are available from knowledgeable club members.

**Don't Hesitate to Ask for Help!!**

Call Neil Vince, KA7JAS at:

(928) 775-2158 or  
[ka7jas@arrl.net](mailto:ka7jas@arrl.net)

## Need a Ride?

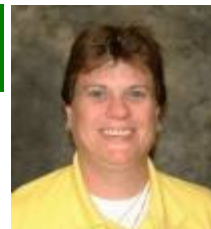


Are you without wheels and need a ride to a YARC club meeting?

Check into the Wednesday night net on 146.880 at 7:00 p.m., prior to the first Thursday of the month.

There is a good chance that someone will offer you a ride.

# Treasurer's Financial Reporting Sheet



Club / Group Name: YARC  
Reporting Date: August 2007

By Patti Halgunseth, KD7VBG  
Treasurer

Members Name	Dues Paid	Repeater Fund	Donations	Prize Money Paid Out	Net Cash In per Member
Jo L. Keener/N-KE7NSB	\$18.00	\$17.00			\$35.00
Richard Butts/R-KE7DTZ	\$18.00	\$2.00			\$20.00
Tom Gregory/R-W2JKG	\$18.00	\$2.00			\$20.00
Frank Maruna/R-W6RDY	\$18.00	\$2.00			\$20.00
George Miller/R-W7GWM	\$18.00	\$2.00			\$20.00
Richard Courtney/R-KE7DTX	\$18.00	\$2.00			\$20.00
David Passell/ARRL	\$36.00				\$36.00
City of Prescott/Refund	\$100.00				\$100.00
HAmfest Income	\$241.70				\$241.70
50/50	\$56.00				\$56.00
Don - KE7MQB				\$28.00	(\$28.00)
					\$0.00
					\$0.00
					\$0.00
					\$0.00
<b>Total:</b>	<b>\$541.70</b>	<b>\$27.00</b>	<b>\$0.00</b>	<b>\$28.00</b>	<b>\$540.70</b>

Miscellaneous Club Expenses	Cash Out	Check Number
ARRL/David Passell-Renew	\$34.00	958
David Passell/Refreshments	\$11.71	959
YCFA/Doug F. = Fair	\$90.00	960
John Gross/YARC Pcinic	\$187.07	961
Insty Prints/Newsletter	\$27.38	962
VVARA/Half of Hamfest	\$75.65	963
Repeater Fund	\$27.00	Cash
<b>Total:</b>	<b>\$452.81</b>	

Club Funds Summary	Totals
Starting Balance	\$1,423.65
Net Expenses	\$452.81
Net Income	\$540.70
	<b>\$1,511.54</b>
Repeater Fund	\$1,151.00
Cash Flow	\$87.89

## This Month's Featured Ham

By Pat Oliver, K7DUC



Joe Oliver, AC6AA

After writing this column for 2 years, I thought I would introduce you to my OM and Editor of the Yavapai Signal, Joe Oliver, AC6AA.

Joe earned his first license -- a Class B, in 1947, at the age of 15. At that time, Class A was probably equal to the present Extra Class license, with Class C being more restrictive. His previous call sign was W6YQN.

He was always interested in radio, and as a child during World War II, used to build razor blade radios and tune them with a pencil lead to receive commercial stations.

A friend introduced Joe to his Elmer, Joe Pierce, W6NYS in Santa Clara, California, who encouraged him to get into Amateur Radio, and later helped him get on the air.

Joe operated for several years, mostly on 10 meters AM, and then allowed his license to lapse around 1957. He again became active and earned his Advanced license in 1993. He got his Extra Class ticket a year later.

His favorite band, when it is open, is 15 meters, because of the large frequency spread and it being great for DX. He regularly works 20 meters and 17 meters, with 40 meters being advantageous for working friends in California. He enjoys working DX with old and new friends, learning about other countries. He has worked and confirmed 327 countries.

He prefers SSB, but occasionally works CW. His last CW

contact was in May of this year, when he worked BS7H.

Joe's most memorable contact was after World War II, with an Air Force Sergeant, operating as W6YOT-C6 in Tsingtao, China.

Joe graduated in Electronics from San Jose State University. He was on active duty in the Navy for 2 years, serving as a Radioman on a wooden minesweeper. He then went to work for Varian Associates for 30 years, starting as a technician and rising to Manager of Quality Assurance. He then worked as a Quality Engineer at Teledyne for 10 years prior to retirement in 1995. We then moved to Prescott, where Joe started planning his new ham shack. His equipment includes a Yaesu FT-1000MP, an Ameritron AL-80B amp., a Force 12 C-4 beam, a Kenwood TS-930, and an FT-100 for VHF.

Joe feels that the club is moving in the right direction, i.e., the club has an active core group and participates in a number of public events and a variety of other ham activities.

Joe is a very valuable member of YARC. He has served as Secretary and currently is Editor of the Yavapai Signal newsletter. ■

### Program Speaker

September's Program - "Balloon Satellite Project" will be given by Terry Pemberton, KB7TRE.



### Need Manuals or Tech Info for Your Radio?

The following website has a lot of information for a very large number of amateur radios by many manufacturers:

<http://www.ham.dmz.ro/>

Give it a whirl the next time you need a manual, schematic, or bulletin, to assist with a repair problem.

# HF Mobile-- is it for You?

By Bruce, W1ZE



Most of you do Amateur Radio communications from your car, and like most folks you do it on 2-meters FM, and maybe a few are on the 440 MHz band. Back over a half century ago there were very few hams doing mobile communications. After WWII, more hams started experimenting with mobile HF. Most hams back in the late 40s and 50s hung out on 75-meter AM and the popular frequency across the country was 3995 kHz. Gonset, Regency and a few others produced a variety of HF receiver converters that plugged into your car AM radio and used it as an IF and audio amplifier. Many of the early transmitters were homebrew, but some inventive hams used the military surplus equipment that in those days could be purchased by the pound. The AN/ARC-5 Army Air Core Command series of transmitters and receivers were very popular. Gonset, Morrow, Regency. Multi-

**COMMAND TRANSMITTERS & RECEIVERS**

ARC-5 and SCR274 as available  
**BC 455**

**XLNT.....\$5.95**  
**NEW.....\$7.95**

**Receivers, w/o dynameters**

R-25 Marine, 1.5-3 MC, new.....	\$18.95
R-26 or BC-454, 3-6 MC, used \$8.95, New.....	7.95
R-27 or BC-455, 6-9.1 Mc, used \$5.95, New.....	7.95
R-28, 100-105 MC, Xrit.....	12.95
R-4/ARR-2, 234-250 MC, as is w/o tubes, \$2.95, w/tubes, used.....	4.95

Magazine ad from the 1950s for ARC-5 equipment

Elmac and a few others produced a variety of transmitters, receivers and transceivers with a few of them making mobile equipment for the VHF bands too.

With the advent of single sideband (SSB) phone, several companies like Swan, SBE, WRL Drake, Collins and others

produced HF transceivers that could be used mobile. This advancement put a lot of hams on the road with their radios. The disadvantage of the early SSB equipment was it was large and if you were part of the flower-power generation, it was difficult to put one of these rigs in your VW bug.



Now that the license structure has changed, there will be many more hams on the HF bands and many of them will want to try HF mobile. It can be a lot of fun. Just think you could be driving down I-95 with your solid state HF transceiver connected to a good mobile antenna and communicate across country, or have a nice friendly QSO with a chap in South Africa or some other exotic place around the world.



This article will not allow me to give you all the tricks I have learned over the years for HF mobile, but I will attempt to give you a few tips and guide you to information resources that will help you if you decide to try it.

As with HF communications throughout the years, the antenna and its associated ground requirements is the most important part of a good mobile installation. I learned early that bigger is better when it comes to HF antennas and their loading coils. Even the best HF mobile antennas are very inefficient. If you use the average 100-watt transceiver and you get 20% efficiency, feel very happy. Putting a full quarter wavelength whip on your car for bands below 18 MHz will not fit and meet the highway height rules. Hence, whip loading is required to make the antenna resonant and have some level of radiating efficiency.

Many serious mobile HFers use the screwdriver type antennas or big coil Bug-Catcher type antennas. Why? Because most of them use large (2-inch + diameter) coils. The bigger the coil the lower the coil loss. You want your transceiver's power to be radiated, not used to heat up the coil. Many hams use the "Ham Stick" type whips because they have a modest profile and moderate cost. On the higher HF bands they work OK, but the models for bands below 14

MHz are lossy. If you have one, put your hand on the coil area after having a long QSO and you will find it warm to the touch, if not hot. That was power that did not make it out into the air.

I like the screwdriver antenna because I can change bands or move frequency without pulling over to the side of the road to replace the resonator, adjust the whip length or move a coil tap. The screwdriver antenna is not inexpensive. You can expect to spend several hundred dollars. The Electraslide and W6AAQ DK3 can be purchased for just under \$200. I have both of them and they work just fine. The Newtronics Hustler HF whip system is a good selection if you do not mind swapping resonators when you change bands. They are very well built and will give you years of trouble free service. I recommend that you use the S series (large) resonators on the 75, 40 and 20 meter bands to keep coil loss to a minimum.

Whether you use a screwdriver, Hustler or other HF mobile antenna you will have to have a good antenna mount ground. On the lower bands you most likely will need some form of simple antenna base impedance matching. Some antennas like the DK3 screwdriver have a matching coil built into the base of the antenna. The Electraslide, screwdriver and others provide a matching toroid coil to provide a good match between 50-ohm coax and antenna feed impedance of less than 20-ohms. With the Hustler or fiberglass "Hamstick" type antennas you will need some form of simple matching on the lower bands. I have used a simple disc capacitor across the input of the antenna and was able to get the SWR down below 1.2:1 at resonance. I have found that 1000pF works well on the 75/80-meter band, 470pF for the 40-meter band and 170 to 220pF for the 20-meter band. You may not need a base matching capacitor for the bands above 14 MHz.

Grounding: Make sure your transceiver has a good vehicle ground and so should your antenna. If not, you may chase SWR problems and noise (QRN) for hours. On 10-meters, some hams have used modified CB antennas with magnet-mounts. That may be OK for power levels fewer than 20 watts but they can cause your transmissions to go squirrely if you try to use power levels higher than that.



If you want to read more about HF mobile operation and installations, check out

the following web sites.

- <http://www.k0bg.com> Good mobile info site
- <http://ka6wke.blogspot.Com> Installation
- <http://www.hamradiotoys.com/dk2.htm> info on the DK3 screwdriver + CD book Worldradio-2000 40+5years of HF Mobileering by W6AAQ, a good resource
- <http://www.qsl.net/w5es/electro.htm>  
ElectroSlide screwdriver antenna site
- <http://www.new-tronics.com> Hustler Antenna web site.
- <http://www.arrl.org/tis/info/carproblems.html> (RFI/EMI help)

Publications:

- ARRL – Your Mobile Companion, \$12 from ARRL Books
- 50+5 Years of HF Mobileering CD book by Don Johnson W6AAQ (see DK3 site above) ■

Happy mobileering & 73, Bruce

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I WONDER IF LOADING THE FLAGPOLE UP AS AN ANTENNA WILL BOTHER SPOT?



By Lloyd, WA6ZZJ

## PUBLIC SERVICE

September, October and November are shaping up to be busy public service event months. Public service communications is a good chance to get Amateur Radio in the public view. This is also an excellent opportunity to test your emergency communications skills and have fun at the same time. Step up to volunteer for as many of these events as you can participate in.

Saturday, September 15<sup>th</sup> is the Groom Creek Community Classic 10K, 5K and 2 mile fun run/walk. Contact Lee, KC7CBK, with your availability. At least 6 people will be needed for this event. Times: 0730-approximately- 1000 hrs

Sunday, September 16<sup>th</sup> is the 50 Mile Loop Challenge bicycle race. Contact Lee, KC7CBK, with your availability for this event if you have not already signed up. Over a dozen operators will be needed for this event. Times: approximately 0630 until 1200 hrs.

Saturday and Sunday, September 15<sup>th</sup> and 16<sup>th</sup> is the Prescott Valley Art Fair. Contact John, WB9VGJ, for more information on this event. Times: 1000-1600 hrs each day.

September 20, 21, 22, 23 will be YARC's participation in the Yavapai County Fair. Contact Doug Freeman to volunteer for a stint in operating this event.

October 5<sup>th</sup> and 6<sup>th</sup> will be the Prescott Road Rally. This two day event is being handled by Bob, WB7RRQ. Contact him with your availability. Volunteer sign up should also be done at [http://www.prescott rally.com/index\\_volunteer.htm](http://www.prescott rally.com/index_volunteer.htm).

Saturday, October 20<sup>th</sup> is the Diabetes Walk that takes place on the Yavapai Indian Reservation. Contact John, WB9VGJ, to assist on this event. Fun run/walk 0.7 mile, 1.3 mile, 4 mile, and 5K (3.1 mile) starting at 0900 hrs.

Saturday, November 17<sup>th</sup> 2<sup>nd</sup> Annual Prescott YMCA Rails to Trails 11 mile run, 10K Run/Walk, 5K Judged Race Walk and 2 mile Fun Run/Walk. More information on this event as it is available.

With the many new members that we now have in our club it would be nice to see several new people taking part in these events.

Lloyd, WA6ZZJ

## ARES/RACES...

### Training Meeting.....

There were 20 ARES/RACES members and amateurs in attendance at the August 4<sup>th</sup> ARES/RACES training meeting. My hope is that all went home with more knowledge of the topics covered which was Winlink and Airmail than they had before attending. During the training meeting we had a 'glitch' or two and we found a way to work around them and that was one of the scenarios Bud, N7CW, talked about in his presentation. If something happens to prevent us from going to station 'A' directly, we use stations 'B' and 'C' to get to station 'A'....

This is going to be a valuable means of emergency communications. The ARRL, MARS and other organizations are adopting it as the preferred mode of digital communications. Whether we use VHF/UHF Packet or HF Pactor, I'm sure we will be seeing more use of this mode of operation in the future.

### ARES/RACES Decals.....

Several ARES/RACES members picked up a decal with the new ARES/RACES logo on it at either last month's YARC meeting or at the August 4<sup>th</sup> training meeting. I still have a supply left and will have them at future meetings or arrangements can be made to get them to you. The cost is \$1.65 per decal. It is recommended that they be placed in the lower left corner of your vehicles windshield so as to be visible when coming upon a check point or road block to identify you as an ARES/RACES member. Always remember to have your County Emergency Management issued ID with you also.

## License Courses and Volunteer Instructors

*By Jack Crabtree, W7JLC*

Thanks to the addition of several new volunteer instructors, we have been able to put together an Amateur Radio License course schedule for the fall season. The Technician Class course will be an one day, eight hour session, while the General and Extra Class courses will each be two day, six hour each (12 hours total) sessions. Courses are currently scheduled for:

Technician – September 29, 2007

General – October 27 and November 3, 2007

Extra – December 1 and December 8, 2007

These dates were chosen to be as conflict free as possible with other amateur radio and public service events, but as the season is always busy, some conflicts may still exist. All the courses will be offered free of charge. The location of the courses will be at Embry Riddle Aeronautical University (ERAU), in the King Engineering Center, room 132. Anyone wishing to attend one of the courses should contact me at [w7jlc@arrl.net](mailto:w7jlc@arrl.net). Persons on the database will be provided additional information on their class, ERAU campus maps, as well as any necessary schedule adjustments.

The applicable ARRL License Manual will be the textbook for each course. Courses will closely follow the License Manuals in content and illustrations. Each course section will begin with a lecture session followed by a review of the applicable questions drawn from the official test question pool for that section.

The local Volunteer Examiner (VE) team, headed up by Mary, AB7NK, will hold examination sessions 1 or 2 weeks after each license course. Look for the exam schedules and locations elsewhere in this newsletter issue.

Volunteer Instructors (VIs) are still sought to share the load of teaching and mentoring fellow radio amateurs in their quests to upgrade their licenses. While there is no formal certification test, VIs are encouraged to register with the ARRL. This can be done online on their website [www.arrl.org](http://www.arrl.org). The registration entitles the VI to

significant discounts on license manuals and access to other training materials. Shipping is free as well. VIs wishing to teach at the above courses are asked to instruct one or two sections (chapters) of the course content.

Thanks to a donation from the Yavapai Amateur Radio Club (YARC), VIs will soon have access to a pool of License Manuals, to minimize out-of-pocket expenses for this important volunteer activity. If you are interested in becoming a VI team member, teach at one of the upcoming courses, or check out a loaner License Manual, please contact me at [w7jlc@arrl.net](mailto:w7jlc@arrl.net). ■

# VE Tidbits



*by Mary Vince – AB7NK*

Testing appears to have slowed down for a few months which has given the VE's a chance to take a look at our procedures, make changes as well as fine tune them. Our goal has been to make the testing session as comfortable as possible for applicants.

We're now ready for the fall testing sessions. These dates follow the classes held by Jack, W7JLC & his Volunteer Instructors:

Saturday, October 13, 2007

Saturday, November 10, 2007

Saturday, December 15, 2007

All test sessions begin at 9:00 a.m. **sharp** & will be held at Embry Riddle – Rm KEC 132. You do NOT need to take a class in order to test at these sessions – everyone is welcome.

For more info contact Mary – AB7NK

[ab7nk@arrl.net](mailto:ab7nk@arrl.net)

## Greetings Fellow Amateur Radio Operators:

This July, I was again elected as Chairman of the Amateur Radio Council of Arizona (ARCA). During the next year I plan to do my best to promote amateur radio and ARCA to the fullest. The Arizona State Convention Hamfest for next year is presently scheduled for 18-20 July 2008 in Williams.

To accomplish my goal of returning this activity to a large and quality event, I am going to need the help of all the clubs and each amateur radio individual in the state. We need to get the Williams hamfest back to a major event (i.e. State Convention) that will draw a lot of people from around our state and the southwest. I am not sure what happened to cause the decline, but the past cannot be changed. We need to make sure that the past mistakes are not repeated and the good things we have done in the past are carried forward.

A little history on why the hamfest was moved from Flagstaff to Williams. The Coconino county fairgrounds were continuing to raise our cost each year while not maintaining the grounds, making repairs, or upgrading facilities. At the rate of increasing cost, ARCA would have been required to raise the cost of each outside spot to \$50.00, charge an entrance fee of \$5.00 each person, and raise the inside spots over \$150.00 each. ARCA's expenses were starting to outpace the income. Hams, being a thrifty bunch, would have balked at this additional cost and we would have lost a lot of people and vendors with this additional expense. By moving to Williams (only 30 miles away) we have been able to maintain (and in a few cases lower) the cost of vendor spots and have not needed to charge an entrance fee. The town of Williams has made significant progress in the repair and upgrade to the fairgrounds and are planning more upgrades in the near future. It appears that the cost of the motel's and food is less expensive than Flagstaff. Williams has great RV facilities and when the forest is open for use (this we cannot control) there is adequate RV parking within easy driving distance.

I need your help in trying to get commercial vendors to return to our hamfest. The inside area is about the same size as was before and has a roof that does not leak. There is adequate electricity and the cement floor is excellent with several telephone lines for credit card use. I am sure it is going to be hard to get commercial vendors back because of the convenience of "On-Line Shopping" and the cost of travel. Most companies selling amateur radio equipment make a large part of their profit using the internet. Packing up supplies, traveling to Williams, setting up, and then returning back home is a large expense that will eat into the company profit.. This is where I am asking for the help of everyone. Many of you have home based business that involves amateur radio and other products. By setting up at

the hamfest you can sell your products and advertise also. Many of you know of a vendor that may be willing to participate. If so, please let me know and I will make the contact and show him/her the advantage of coming to our event.

I cannot do this alone. I need the help of everyone. I am open to all suggestions on how to make the Arizona State Hamfest a great event that everyone will want to attend. Please let me know your thoughts on how to improve this event and return this State Hamfest to its former glory. It is not going to be easy but all of us together can make it happen.

Clifford Hauser KD6XH  
ARCA Chair  
ARRL Assistant Section Manager Arizona  
kd6xh@comcast.net  
520 744-9095 home  
520 235-7393 mobile  
520 794-8285 work

(Please post in newsletters, websites and distribute to all hams in Arizona)

### Computer Tips



Next time you want to surf the Net, forget about Google – try StumbleUpon. StumbleUpon is a neat downloadable toolbar that helps you find great websites and web content you might never have found. Whether its videos, photos, blogs, etc., StumbleUpon helps you find interesting stuff based on your interest. StumbleUpon learns what you like and makes recommendations by like-minded people. You can select from a wide variety of topics, including "amateur radio". Click on the Stumble button, and discover all sorts of intriguing websites related to your topic.

For a free download go to: <http://www.stumbleupon.com/>

### Upcoming Events of Interest

-  **Sept. 15, 2007- Groom Creek Classic Run/Walk**
-  **Sept. 15 & 16, 2007 - World Arts Festival**
-  **Sept. 16, 2007 - Prescott Cycling Club Loop Challenge.**
-  **Sept. 20 -23, 2007 - Yavapai County Fair**
-  **Oct. 5 & 6, 2007 - Prescott Road Rally**
-  **Oct. 20, 2007 - Prescott Diabetes Walk.**

# Scientists Mess with the Speed of Light

By Ker Than

LiveScience Staff Writer

Researchers in Switzerland have succeeded in breaking the cosmic speed limit by getting light to go faster than, well, light. Or is it all an illusion?

Scientists have recently succeeded in doing all sorts of fancy things with light, including [slowing](#) it down and even [stopping](#) it all together. Now a team at the Ecole Polytechnique Fédérale de Lausanne (EPFL) in Switzerland is controlling the speed of light using simple off-the-shelf optical fibers, without the aid of special media such as cold gases or crystalline solids like in other experiments.

"This has the enormous advantage of being a simple, inexpensive procedure that works at any wavelength," said Luc Thévenaz, lead author of the study detailing the research.

Using a technique called Stimulated Brillouin Scattering, the researchers were able to slow down or ratchet up the speed of light like the gas pedal on a car. They succeeded in reducing the speed of light by almost a factor of 4 (although that's still plenty fast at 46,500 miles per second), but even more dramatically, the team was also able to speed up the speed of light.

Light in a vacuum travels at approximately 186,000 miles per second, but a popular misconception is that, according to Einstein's special theory of relativity, nothing in the universe can travel faster than this speed.

This seeming paradox can be resolved because a pulse of light is actually made up of many separate frequency components, each of which moves at their own velocities. This is known as the pulse's phase velocity. If all the frequency components have the same phase velocity, then the overall pulse will also appear to move at that velocity.

However, if the components have different phase velocities, then the pulse's overall velocity will depend on the relationships between the velocities of the separate components. If the velocities differ, the pulse is said to be moving at the group velocity.

By tweaking the relationship between phase velocities, it's possible to adjust the group velocity and create the illusion that parts of the pulse are traveling faster than the speed of light.

One area where such an advance could be enormously beneficial is in the telecommunications industry.

Although information can be channeled through fiber optics at the speed of light, it can't be processed at this speed because with current technologies, light signals must be transformed into much slower electrical signals before they are useful.

Thevenaz's technique would essentially allow light to be processed with light without a costly electrical conversion.

The group's research will be published in an August 22<sup>nd</sup> issue of the journal Applied Physics Letters. ■

For related articles, please view [www.LiveScience.com](http://www.LiveScience.com)  
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## "I Can't Afford to Join the ARRL."

By Sherri Brower, W4STB

Most of us manage to afford things that last a lot less time than a year's membership to an important organization. Basic membership in the ARRL is \$39.00 per year. It's about twice the amount of one year's dues for a local radio club. It's about average for other national organizations. It's less than one cup of coffee per week for a year, less than a month of cable television service, and less than most monthly cell phone bills.

It's not the "afford" that we should be concerned about. Rather it's the value for that \$39.00.

What do you get for the dues? You get a full year's membership, a monthly magazine, e-mail newsletters delivered straight to your inbox, a package of services that you can personally use, a cadre of volunteers in your local area to assist you with a variety of amateur radio matters and activities, a voice in Congress, specialists at Headquarters, and much more.

When you pay the yearly dues you can often choose a gift of a publication or you can pay through your local club. Did you know that the local affiliated club can retain a portion of the dues to use in your local area? The club can keep \$15.00 for a new member and \$2.00 for each renewal application.

The ARRL is an association of amateur radio enthusiasts joined together by a common interest and a voice -- a voice that protects our frequencies and provides the insurance for us to remain active on the radio. Other organizations-- labor, farmers, merchants, hobbyists, companies -- join together to increase their effectiveness. Why not hams?

**ARRL -- a great value. Join TODAY.**

## Weekly Breakfasts



### Tues. Morning Breakfast –

7:00 a.m. at

**Back Burner Cafe**

8400 E. Long Mesa Drive

& N. Robert Road

*Informal – all are invited.*

### Wed. Morning Breakfasts:

7:00 a.m. at

**Iron Horse Restaurant**

(Hwy 89 in Chino Valley)

(N 34°43'56.5" W112°27'15.4")\*

*informal – all are invited*

8:00 a.m.

**Masonic Lodge**

(1280 Willow Creek Road,

2<sup>nd</sup> Floor; above Bank of America)

*informal – all are invited*

\* Location data (per WGS84) provided

by Fred Zimmermann, N7PJN

## Area Repeaters

Frequency	PL	Location	Owner/Club	Auto-Patch	Rem. BaseOr Linked	Vo IP	Notes:
52.560-	100.0	Mt. Union	N7NGM			Echo	-500KHz Offset
53.040-	None	Prescott Airport	WB7BYV				-1MHz Offset
145.290-	127.3	Mingus Mtn.	ARES/RACES				
146.780-	91.5	Williams Mtn.	BWARC			IRLP	
146.880-	100.0	Prescott	YARC				
146.980-	162.2	Flagstaff	CARC				
147.000+	162.2	Mingus Mtn	MMRG				
147.040+	100.0	Prescott Heights	W2YAV				
147.140+	162.2	Flagstaff/-Mt. Elden	ARA		Linked to Mt. Ord 147.360-		
147.220+	162.2	Mingus Mtn	VVARA				
147.260+	103.5	Mt. Union	ARES/RACES				
442.150+	100.0	Mingus Mtn	W1OQ/Northlink				
442.350+	100.0	Glassford Hill	N7KPU			IRLP	
445.300-	100.0	Prescott	WINSYSTEM		Node 3727	IRLP	
448.475-	100.0	Flagstaff-Elden	ARA	Yes			
448.500-	100.0	Prescott	K6JSI				
448.875-	100.0	Flagstaff-Elden	Northlink		Linked		
449.175-	100.0	Towers Mountain	Northlink		Linked		
449.675-	88.50	Prescott Airport	WB7BYV		Linked to P Mtn. 927.3875		
927.3875-	151.4	Prescott	WB7BYV	Yes	Yes	Echo	Be Nice

### Y.A.R.C. IRLP NODE

Node Number 3182

**442.350+ MHz with a  
PL of 100.0 Hz**

For more Repeater Information & Listings refer to:

- [www.w7ara.org/Web/](http://www.w7ara.org/Web/)
- [www.azrepeaters.net](http://www.azrepeaters.net)
- [www.azfreqcoord.org/listings.htm](http://www.azfreqcoord.org/listings.htm)

## YAVAPAI AMATEUR RADIO CLUB

P.O. BOX 11994

PRESCOTT, AZ 86304

Visit us on the web at <http://www.w7yrc.org>

Many thanks to Bob Smith, WB6ODR, our Webmaster

