



# YAVAPAI SIGNAL



The Yavapai Amateur Radio Club • Prescott, Arizona • DM-34 • Volume 22 – No.10 • October 2007



## September -- A Busy Month for YARC Members

Inside this issue:	Page
Meeting Minutes	2 & 3
ARES/RACES	4 & 5
Say "hello" to your microphone	6 & 7
This Month's Featured Ham	8
Pictures from Special Events	9
Southwestern Division Election	10
Frozen Smoke: A World Changing Discovery?	11

It seems like most of the events we are requested to participate in, happen to fall in the month of September. Thanks to the efforts of leaders such as Lloyd, WA6ZZJ, Lee, KC7CBK, John, WB9VGJ, and Doug, KV8TD, plus the many members contributing their time and effort to man the various stations and booths, we participated in the following events:



**Bud, N7CW -- Net Control at the Groom Creek Community Classic**

- Groom Creek Community Classic
- 54 Mile Loop Challenge
- Prescott Valley Art Festival
- Yavapai County Fair
- March of Dimes

*See Page 9 for additional pictures of these events.*

### 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. ■

## 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 Aug.....	116
Gain/Loss.....	+5
1st Thurs. in Sept.....	121

## 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.

## Minutes of September 6, 2007 Board Meeting



KF6SPS; and Bob, WB6ODR.

**Repeater and IRLP Issues:** Jack, W7JLC has pulled the IRLP off the the 447.350 Repeater due to a conflict between the Repeater owner and FCC. Jack now has the IRLP on simplex at his home, but hopes to get it up on the club Repeater soon. Bob said the new Repeater equipment should be available for viewing at the meeting.

**Hamfest Update:** We cleared \$252.20, which was split between YARC and VVARA. A meeting was held by the Hamfest Committee for next year and suggestions were discussed.

**Funding for Signs:** Lee, KC7CBK has requested \$148.50 for signage for the Public Service events entailing biking and running. A motion to approve the funding was made by John and seconded by Pat. The funding was approved unanimously.

**Donation to Club from Joe, W7ZW:** Joe donated a 10 meter mobile radio and 40 meter dipole to the club.

**Program:** Terry will present the program tonight on the Balloon Satellite Project.

**Yavapi County Fair Booth:** Doug, KV8TD will not be available on one of the setup days. A person is needed to assume responsibility for one day.

The Board adjourned at 1850 MST.

Respectfully submitted,

Pat, K7DUC

Secretary

## Minutes of September 6, 2007 General Meeting

Terry, KB7TRE called the meeting to order at 1900 MST. The Pledge of Allegiance was recited and members introduced themselves.

**Visitors** Vi Hughes; Mike Helsing, KB7OCR; Jerry Brandt, KB7YUX; Frank Horneff, WA6JBV; Tony Brown, WB6LWI; Rebecca Riveiere; Chuey, WA7JC and Jonathan Nelson, KE7OEU.

**New Members:** A motion to vote in the following new members was made by John, WB9VGJ and seconded by Walter, KF6SPS:

Tomi Hammen, KJ5CE; Mark Longfield, KE7IXX; Mark Parthe, KD7KJL; Brian Stapleton, KW6J and XYL Mary, WA6CWR.

The motion was approved.

**Meeting Minutes:** There were no additions or corrections to the General Meeting Minutes of August 2, 2007. The General Meeting minutes were approved.

**Treasurer's Report:** Terry gave the Treasurer's Report. The previous balance was \$1423.65 and the ending balance was \$1511.54. The Repeater fund has \$1151.00

A motion to approve the Treasurer's Report was made by Richard, KE7DTR and seconded by John, WB9VGJ. The motion was approved.

### Committee Reports:

- **ARES/RACES/Public Service:** Lee, KB7CBK passed around sign up sheets for the Groom Creek Community Classic and the 54 Mile Loop Challenge. He showed new signs that will be used for these events. He also announced several additional public service

events that we will participate in for the remainder of this year,

John, WB9VGJ passed around sign up sheets for Prescott Valley Arts Fair and the Annual Diabetes Walk.

- **Yavapai County Fair:** Doug, KV8TD indicated a need for a coordinator for setup on Sept. 19th. He passed around a sign up sheet for other days and discussed the equipment and manpower needs for this event.
- **IRLP:** Jack, W7JLC reported that the YARC repeater is now off of Glassford Hills and temporarily on 147.56 simplex, no tone. The IRLP will be incorporated with the new repeater on the 88 machine.
- **Public Information:** Bob, WB7RRQ asked members to send any information to him or Jim, N5RO.
- **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 showed members the new controller and repeater that will replace the existing 88 machine. Chuey, WA7JC discussed some of the features of the new repeater.
- **VE Testing:** Jack, W7JLC reported for Mary, AB7NK. VE Testing will be done 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 General classes. VE Testing will be on Oct. 13, November 10, and December 15.

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

#### Old Business:

- **NRA Special Event:** We will be participating with NRA on their 136th birthday celebration, which will be held at Gunsite Academy on Nov. 17. We will use the owner's hamshack in his house and barn. Maps will be available.
- **Hamfest Update:** Terry, KB7TRE reported on the Hamfest committee's meeting. Terry discussed the number of personnel and other things needed for next year. Profit of \$252 from this year's Hamfest was split between YARC and VVARA.

#### New Business:

- **Signs for Special Events:** The Board approved the purchase of signs to be used for public service events. These were the signs shown by Lee, KC7CBK earlier in the meeting.
- **Nomination Committee:** John, W5VJH has volunteered for this committee to elect a new Vice-President, Secretary, and 3 Board Members. Other volunteers are needed.
- **Donation:** W7ZW donated a 10M mobile radio, a KLM Beam, and a Drake Power Supply for club members to bid on.

Tonight's Program will be given by Terry, KB7TRE who will talk on satellite balloons and electronics.

A motion to adjourn the business meeting was made by John, WB9VGJ and seconded by Richard, KE7DTR. The motion carried. The business meeting was adjourned at 1950 MST.

There was no 50/50 drawing held this evening.

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)

## Communications???

**Submitted by Bob, K7CJW**

The Florist's new assistant picked up the phone and listened attentively as he heard the order.

"The ribbon must be extra wide," the man was saying "with the Rest In Peace" on both sides, and if there is room, "We Shall Meet In Heaven."

There was a sensation when the flowers arrived at the funeral. True, the ribbon was extra wide, but the Inscription read: "Rest In Peace On Both Sides, And If There Is Room, We Shall Meet In Heaven." ■



By Lloyd, WA6ZZJ

## ARES/RACES

### TRAINING MEETING.....

The next scheduled ARES/RACES quarterly training meeting will be held on Saturday, November 3, 2007. Topics covered will continue to be digital communications using Winlink and Airmail for Packet and Pactor. More information will be available in the November newsletter and on the Monday evening ARES/RACES nets.

### ARES/RACES DECALS.....

For those ARES/RACES members who did not pick up a decal with the new ARES/RACES logo on it at either the August YARC meeting or at the August 4<sup>th</sup> ARES/RACES training meeting, I will have them at the October meeting. 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.

### PUBLIC SERVICE.....

As this article goes to print we will have completed providing public service communications for three public service events along with participating in the Prescott Valley Art Fair and staffing a booth at the Yavapai County Fair. It has been a very active few weeks. There are still more events on the horizon so plan to take part in one of them. Upcoming events yet to be held are:

October 5<sup>th</sup> and 6<sup>th</sup> will be the Prescott Road Rally. This two day event has been staffed, but if you haven't signed up they may be able to use an extra operator or two. The event is being handled by Bob, WB7RRQ - Bob, KC8BOB and Steve, KC7TIL. Contact any of them with your availability. Volunteer sign up should also be done at [http://www.prescotttrally.com/index\\_volunteer.htm](http://www.prescotttrally.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. The race course will be much the same as last year. More information can be found at the following website: <http://www.prescottymca.org/> Click on Rails to Trails Race. A sign up sheet will be at the October and November YARC meetings.

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.

### Groom Creek Community Classic

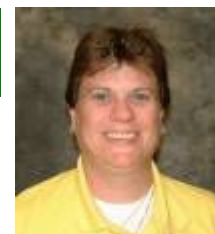
Saturday, September 15<sup>th</sup> was another nice fall morning in the Prescott National Forest as a group of seven amateurs gathered in Groom Creek to provide communications for the running of the 3<sup>rd</sup> Annual Groom Creek Classic 10K, 5K and 2 mile Fun run/walk. Amateurs involved were: KC7CBK, N7CW, KD7VBG, KE7DTR, KC6ZHG, KC7AGL and WA6ZZJ. The 10K race was off at 0800 with the 5K and 2 mile staggered a few minutes later. Communications wrapped up about 1000. Traffic control on the race course was handled by the Yavapai County Jeep Posse. Food and drink was provided for runners and volunteers by Friendly Pines Camp. As always, our radio support was very much appreciated by the race organizers. Thanks to all participating amateurs.

### 54 Mile Loop Challenge

Again on Sunday September 16<sup>th</sup> twelve amateurs were back in action providing radio support for the 54 Mile Loop Challenge, a bicycle ride originating in Prescott, going out Iron Springs through Skull Valley, Kirkland and Wilhoit returning to Prescott. For the 'hardy' riders there were additional legs added to make the total mileage 100 miles. Approximately 140 riders were in the 54 mile loop ride with about 38 riders in the 100 mile for a total of 178 +/- overall. Amateurs involved in this event were: KC7CBK, KE7DTR, N7CW, KC6UUG, W5VJH, KD7VBG, WB7RRQ, KD7RMV, N7PJM, K7CJW, WA6JBV and WA6ZZJ. Once again, the race organizing staff said our communications support was outstanding. Thanks to all who participated.

**See ARES/RACES Page 5**

# Treasurer's Financial Reporting Sheet



Club / Group Name: YARC  
Reporting Date: September 2007

By Patti Halgunseth, KD7VBG  
Treasurer

Members Name	Dues Paid	Repeater Fund	Donations	Prize Money Paid Out	Net Cash In per Member
Mark Longfield/N=KE7IXX	\$18.00	\$12.00			\$30.00
Carolyn Hammen/N=KJ5CE	\$18.00	\$2.00			\$20.00
Mark Parthe/N=KD7KJL	\$18.00	\$2.00			\$20.00
Brian Stapleton/N=KW6J	\$18.00	\$2.00			\$20.00
Tony Jackson/R=KI6AHH	\$18.00	\$2.00			\$20.00
M.P (Bud) Sumner/R=K6ALV	\$18.00	\$2.00			\$20.00
Marty Goyette/R=KF6BTV	\$18.00	\$2.00			\$20.00
Dick Courtney/10 Meter Trans	\$15.00				\$15.00
Joe Oliver/T-Shirt	\$19.00				\$19.00
Pat Oliver/T-Shirt	\$19.00				\$19.00
					\$0.00
					\$0.00
<b>Total:</b>	<b>\$179.00</b>	<b>\$24.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$203.00</b>

Miscellaneous Club Expenses	Cash Out	Check Number
Lee Cunningham=Signs	\$148.50	965
Jack Crabtree=Training	\$168.39	966
Insty Print=Newsletter	\$27.38	967
Pat Oliver=Bus Cards	\$17.31	968
David Passell=Refreshment	\$12.01	969
Repeater Fund	\$24.00	
	\$397.59	
Country Wide /Repeater	\$1,571.08	964

Club Funds Summary	Totals
Starting Balance	\$1,494.29
Net Expenses	\$397.59
Net Income	\$203.00
	\$1,299.70
Repeater Fund	(\$396.08)
Cash Flow	(\$194.59)

## • ARES/RACES (Continued from Page 4)

### March of Dimes Walkathon

The weather on Saturday morning, September 22<sup>nd</sup> was a sharp contrast to the previous weekends events. Rain, lightning and thunder were the order of the day. Despite the inclement weather there were 67 hardy souls that turned out at 8:00 a.m. to participate in the walk. With the route being shortened this year it wrapped up by approximately 9:45 in the morning. Five amateurs also turned out in the rain to provide communications around the route. Those participating were: KD7VBG, WB7RRQ, KI7JZ, KC7CBK and WA6ZZJ. Thanks to all who turned out to assist with communications. Special thanks to Erika who, despite her recent surgery, signed on at the last minute to fill a gap in our communications plan.



**Walkers Leaving in the Rain**

# Say "hello" to your microphone!

By Paul Honore', W6IAM

The microphone - the device you talk into to modulate your radio - is defined by *Miriam Webster* as "An instrument whereby sound waves are caused to generate or modulate an electric current for the purpose of transmitting or recording speech or music." Notice the distinction between the words "generate" and "modulate." They imply different mechanisms for converting mechanical energy to electrical energy. In fact, there are a great many differences between individual microphones - differences such as sensitivity, frequency response, output impedance, pickup pattern and so forth. You can build a microphone out of just about anything that will conduct electricity. Drive two nails horizontally into a piece of wood, for instance, and connect them to an audio amplifier. Lay a third nail across the other two and you have a crude microphone. It will respond (rather poorly) to variations in contact resistance induced by changes in air pressure as you speak.

## Carbon microphone

In 1876, when Alexander Graham Bell spoke the immortal words, "*Watson, come here, I need you,*" into his first working telephone, the device he used to convert sound waves into electrical energy was a container of loosely packed carbon granules - a kind of voice modulated variable resistor. Direct current passed through the granules was modulated by changes in air pressure. Although capable of delivering a high output, the **carbon microphone** had a narrow frequency response - in the order of 100 to 5,000 Hz, was inherently noisy, and it gradually lost sensitivity as the granules became polarized by the applied current and tended to stick together into a coherent mass. Despite its many drawbacks the carbon microphone was used in military field transmitters and aircraft radios into the 1950s.

Following WW-II, thousands of surplus carbon microphones became available and were used by Amateurs the world over. If you are interested in "vintage radio," chances are you'll run across a carbon microphone sooner or later. It can be adapted for use with modern equipment by adding an external power supply and impedance matching transformer but there are better and cheaper ways of modulating your transmitter.

## Dynamic microphone

A different approach to converting sound waves to electrical energy is the **dynamic microphone** - a coil of wire attached to a flexible diaphragm and suspended be-

tween the poles of a magnet. Sound pressure on the diaphragm moves the coil through the magnetic field, inducing an electric current in the coil. Think of it as a loudspeaker in reverse. Rugged and inexpensive, the dynamic microphone yields a high output with a cardioid or uni-directional pickup pattern. Output impedance is high - in the order of 20,000 ohms. "Professional" versions yield a reasonably flat frequency response of approximately 50 to 15,000 Hz and incorporate a transformer to match a balanced line of 50 - 600 ohms. Dynamic microphones are available in every style and price range and most can be used to modulate a radio with clean, realistic voice quality.

## Velocity (ribbon) microphone

Radio broadcasters and recording studios have long favored the **velocity** or **ribbon** microphone. It is a variation of the dynamic microphone consisting of an aluminum ribbon suspended between magnet poles and directly modulated by sound pressure. Although weak in output and extremely sensitive to shock, the velocity microphone yields a rich, warm high-fidelity sound. It is equally sensitive in the front and back directions with a figure eight or bi-directional pickup pattern. A precision instrument with a very flat frequency response of 20-20,000 Hz or better, and designed to feed a balanced line of 50-600 ohms, the velocity microphone can make a very fine desk mic for a base station if filtering is used to limit its response to voice frequencies.

If you can find a used one in good condition it will be worth every bit you are likely to overpay for it. Take care not to overload the ribbon by blowing or speaking too loudly into it. Maintain a distance of at least two feet from the microphone and speak past, rather than directly into it. A derailed ribbon can be very expensive to replace.

## Condenser microphone

The **condenser microphone** is basically a variable condenser where one plate is fixed and the other is a movable diaphragm. The condenser is a low output, high impedance device requiring a d.c. "polarizing" voltage and very short leads to a high gain nuvistor or transistor preamplifier. Frequency response is essentially infinite and the pickup pattern is omni-directional. Condenser microphones designed for laboratory use and commercial music recording can run into many hundreds of dollars. The pre-amplifier is contained within the microphone housing and designed to drive a low impedance balanced line. Direct

current to the condenser and preamplifier is usually provided by a remote “phantom” power supply and fed to the microphone through the shielded audio cable.

The *electret condenser* microphone is an inexpensive variation commonly used in most modern hand-held radios and headset mics. The dielectric used for the condenser is made from Carnouba wax which will hold an electric field charge indefinitely. No power supply is required and the microphone can be made very tiny.

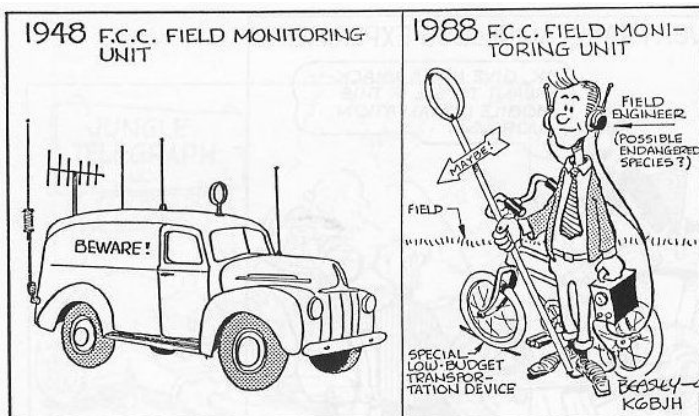
### Some important considerations

Any of these microphone types can be used with Amateur equipment, but each will require some degree of “tinkering” to match the input impedance, audio level, and frequency response needed to modulate your radio properly. Unless you have access to an oscilloscope to monitor the waveform, it won’t be easy to determine modulation level and distortion.

If in doubt, it’s best to stick with the original equipment supplied with your radio. Your microphone isn’t likely to fail but if it does, try to obtain a replacement that will directly interchange with the original. That way you shouldn’t need to make any adjustments.

To avoid distortion and “breath pops,” talk past the microphone rather than directly into it. If your radio is hand held, hold the mic to one side of your mouth. Speak slowly in a normal tone of voice. Enunciate clearly and use ITU phonetics to spell out difficult words. This is especially important in emergency communications where crisp, clean speech is critical. Remember: “WHAT I THOUGHT I HEARD IS NOT NECESSARILY WHAT YOU MEANT TO SAY!” ■

Reprinted from Worldradio Books “the best of BEASLEY” with permission from Robert Beasley, K6BJH



# VE Tidbits



by Mary Vince – AB7NK

We had a special testing on August 25th. One applicant for Extra Class passed with a perfect score.

We are ready for the Fall testing sessions. These dates follow the classes held by Jack, W7JLC and 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** and will be held at Embry Riddle -- Room KEC 132. You do NOT need to take a class to test at these sessions -- everyone is welcome.

For more information contact Mary, AB7NK

ab7nk@arrl.net



Share your experiences and/or knowledge with other club members. You don't have to be a professional writer – we will “massage” submittals if necessary. Some suggestions and guidelines for articles are listed below:

### Articles:

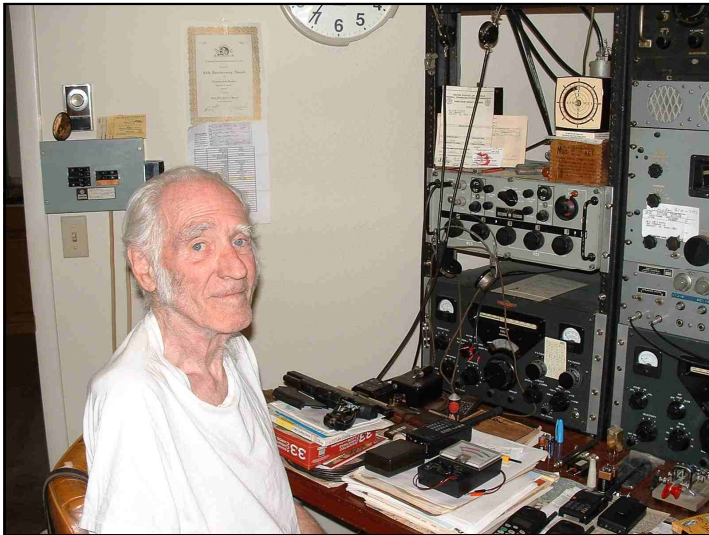
- Tell an interesting Ham Radio story.
- Report an operating event or club activity.
- Illustrate a technique.
- Recount a memory of the “Golden Age of Radio”.
- Describe a construction project.
- Express an opinion.

When possible, and appropriate, accompany your article with photograph(s) to enhance the content.

Submit material to [joliver@commspeed.net](mailto:joliver@commspeed.net), preferably prior to and no later than the 21st of the month. ■

## This Month's Featured Ham

By Pat Oliver, K7DUC



Bill Kafka, W2YAV

Bill was born in Watertown, New York in 1921. His family life was interrupted by the death of his father in an explosion on board a Navy vessel in 1937. They were allowed to stay in their quarters for 6 months, and then his mother and the family moved to a house they had previously bought.

He first got his license in 1937. His call sign was W8QUN. Since he was far from an FCC office, a local ham, W8GFU gave him the exam. Bill had worked with radios and built two-tube receivers and transmitters prior to that.

After high school in 1939, Bill joined the Coast Guard, and installed radios in small boats.

Ham radio operations were interrupted for the duration of WWII. Later, Bill moved to Stockton, California for a year after getting his commercial broadcast license, and was assigned a W6VTE call sign. He then moved to New York State, got his present W2YAV call sign, and worked as an engineer at radio station WATN. After that, he moved to Cleveland and got hired as a floating engineer. He was then on the road for 4 years. He was repairing radio beacon equipment on small boats and at 31 lighthouses. He also worked for GE for one year.

Bill has been in Arizona for at least 25 years. He is not too active at this time. He currently maintains a 147.040 repeater in his home, and occasionally gets on 20 meters and 75 meters. He has several older pieces of radio equipment, includ-

ing his main station, which is a Collins KWS1 and a 75A4 receiver.

His most memorable contacts were with the Russians, while living in New York and working Japan from here.

Bill had a repeater in Syracuse, New York when he worked for GE. He brought the repeater with him when he moved to Arizona and installed it at its present location, when he went to work for KNOT. He worked as an engineer for KNOT for 11 years. He recently sold the 88 repeater, for a small sum, to YARC.

Bill is a very valuable member of YARC. We always will be grateful to him for allowing us to use and eventually acquire his 146.88 repeater. ■

### Upcoming Events of Interest

- ➔ Oct. 5 & 6, 2007 - Prescott Road Rally
- ➔ Oct. 20, 2007 - Prescott Diabetes Walk.
- ➔ November 17, 2007 - Prescott YMCA Rails to Trails Run/Walk

### Program Speaker for October

October's Program will be on:  
"Search and Rescue" and will be presented by Jim, Grimm, KD7RMV.



### For Sale

MFJ - 949E  
300 Watt Tuner  
\$100.00



Brand New in Box. Contact Jack Hanny, KB7CH  
(928) 445-3142 or [jhanny1@earthlink.net](mailto:jhanny1@earthlink.net)

**Prescott Valley 2007 World Arts Festival**



Bob, WB6ODR, Pat, K7DUC & Rich, W7RCS



A Couple of the Attractions Seen at the Arts Festival.

For more pictures of the Festival - Go to John, WB9VGJ's Website: <http://tinyurl.com/2f5xw8>

**54 Mile Loop Challenge**



Riders Lined up on Goodwin Street for the Start of the 54 Mile Loop Challenge

**Groom Creek Community Classic**



Net Control Setup at the Groom Creek Fire Station

**Yavapai County Fair**



Marty, KF6BTV; Tony, KI6AHH; Eric, KE7JKT; Pat, K7DUC; Joe, AC6AA, and Meagan, KE7NAW.



Pat, K7DUC, Doug, KV8TD, & Ron, KE7HWP

## Vote for New Southwestern Division Vice Director

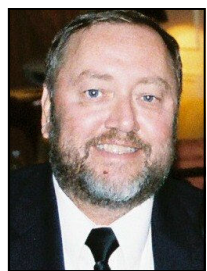
- You **MUST BE A FULL MEMBER** with the ARRL
- You have until **September 9** or sooner to become a member of the ARRL or you won't be able to vote -- go to: <https://www.arrl.org/forms/membership/>
- The ARRL will send out **BALLOTS** between September 24 through October 1, 2007
  - If you **do not** receive a ballot make sure:
    - That your address is correct with ARRL
    - If everything is okay, email David Sumner K1ZZ at [k1zz@arrl.org](mailto:k1zz@arrl.org) for further information
- Ballots are due by November 16, 2007. If you want your vote to count - send sooner! The Director and Vice Director will take office on January 1, 2008



**Dick Norton, N6AA**

**Dick Norton Re-Elected ARRL Southwestern Division Director**

### Candidates for ARRL Southwestern Division Vice Director

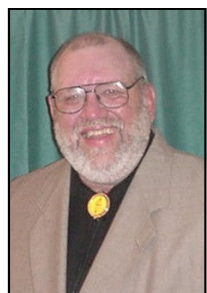


#### **Joe Madas, AE6JM**

- It is my intent to continue to support and promote the growth and recognition of Amateur Radio
- To give all hams a voice in ARRL Policy and Program Development
- To keep all informed of latest news and developments

- I strongly support the efforts to enlist young operators
- I would continue to support the growth and development of clubs and specialty groups throughout the Division.
- I believe a strong and growing ARRL is our key to maintaining access to the ham bands.

Joe's experience and qualifications can be found on the following website: [www.swdivisionelection.net](http://www.swdivisionelection.net)



#### **Tuck Miller, NZ6T**

Your Vice Director needs to be a "people" person.

- You need a person who will listen; a person who enjoys helping others.
- As Vice Director, I will be there to represent you, the majority, and not my own personal views.

- You need a Vice Director who will take an active stance in emergency communications, not only by word, but by deed as well.

- I plan on doing the same thing I did as Section Manager and as Vice Director before. Communications is the key.

Tuck's Experience and Qualifications are listed on the following website: [www.tucknz6t.com](http://www.tucknz6t.com)



#### **Marty Woll, N6VI**

- Strong Business background.
- Record of getting things done.
- Persuasive advocate for Amateur Radio in the community.
- Experienced leader, trainer, writer, and public speaker.

- 40-year ham and ARRL life member.
- Endorsed by current and three former Southwestern Division Directors.
- I am committed to preserving and growing Amateur Radio as a national resource.
- Marty's Experience and Qualifications are listed on the following website: [www.n6vi.com](http://www.n6vi.com)



#### **Tom Fagan, WB7NXH**

Tom is ready to represent you at the ARRL Board of Directors with your suggestions, ideas and concerns. Together we can make a difference.

- Experience as a Director - Manufacturers Radio Frequency Advisory Committee

- Technical expertise in RF and microwave electronics as a electrical engineer
- Proven leadership skills as a Section Manager and a scout leader.
- He will listen to your suggestions and work with the director to present them to the league.
- With your help we can promote growth of the hobby/service

Tom's Experience and Qualifications are listed on the following website: [www.wb7nxh.com](http://www.wb7nxh.com)

# Frozen Smoke: A World Changing Discovery?

From Maltastar.com

**In the latest science discovery, the material called aerogel could be the latest miracle to come out of the science industry.**

Aerogel, one of the world's lightest solids, is strong enough to not succumb a direct blast of 1 kg of dynamite and protect against heat from a blowtorch at more than 1,300C.

Scientists are trying to discover new applications for the substance, ranging from the next generation of tennis rackets to super-insulated space suits for a manned mission to Mars.

It is expected to rank alongside wonder products from previous generations such as Bakelite in the 1930s, carbon fibre in the 1980s and silicone in the last decade.



Mercouri Kanatzidis, a chemistry professor at Northwestern University in Evanston, Illinois, said: "It is an amazing material. It has the lowest density of any product known to man, yet at the same time it can do so much. I can see aerogel being used for everything from filtering polluted water to insulating against extreme temperatures and even for jewelry."

Aerogel is nicknamed "frozen smoke" and is made by extracting water from a silica gel, then replacing it with gas such as carbon dioxide. The end result is a substance that is capable of insulating against extreme temperatures and of absorbing pollutants such as crude oil, The British Times reported.

It was invented by an American chemist for a bet in 1931, but early formulas were so brittle and costly that it was largely consigned to laboratories. It was not until a decade ago that NASA started taking an interest in the



substance and putting it to a more practical use.

In 1999 the space agency fitted its Stardust space probe with a mitt packed full of aerogel to catch the dust from a comet's tail. It returned with a rich collection of samples last year.

In 2002 Aspen Aerogel, a company founded by NASA, produced a stronger and more flexible version of

the gel. It is now being used to develop an insulated lining in space suits for the first manned mission to Mars, scheduled for 2018.

Mark Krajewski, a senior scientist at the company, believes that an 18mm layer of aerogel will be sufficient to protect astronauts from temperatures as low as -130C. "It is the greatest insulator we've ever seen," he said.

Aerogel is also being tested for future bombproof housing and armor for military vehicles. In the laboratory, a metal plate coated in 6mm of aerogel was left almost unscathed by a direct dynamite blast.

It also has green credentials. Aerogel is described by scientists as the "ultimate sponge", with millions of tiny pores on its surface making it ideal for absorbing pollutants in water.

Kanatzidis has created a new version of aerogel designed to mop up lead and mercury from water and absorb oil spillages.

He is optimistic that it could be used to deal with environmental catastrophes such as the Sea Empress spillage in 1996, when 72,000 tons of crude oil were released off the coast of Milford Haven in Pembrokeshire.

Aerogel is also being used for everyday applications. Dunlop, the sports equipment company, has developed a range of squash and tennis rackets strengthened with aerogel, which are said to deliver more power.

Earlier this year Bob Stoker, 66, from Nottingham, became the first Briton to have his property insulated with aerogel. "The heating has improved significantly. I turned the thermostat down five degrees. It's been a remarkable transformation," he said. ■

## 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**

**147.56 MHz Simplex -  
No PL Tone**

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)

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Many thanks to Bob Smith, WB6ODR, our Webmaster

