

Get on HF for Free!

By Bud Semon, N7CW

I have several working HF radios that need new temporary homes. They have been made available through the generosity of Roger, W7EBJ, Neil, K7SEN and ARES/RACES. All of them are older models, without the bells and whistles that modern radios have. Some actually have tubes. These radios have been sitting on shelves or in cabinets for a while, so they are lonely and need to be exercised. I would like to loan them to people who don't currently have the resources to buy an HF radio or who would like to try HF operation. Several YARC members have volunteered to help with installation and set up of the radios, antennas, accessories or whatever else is necessary for someone to get on the air. The only condition is that they be used - you must promise to get on the air regularly! These radios have been trained to come home if they aren't given proper stimulation! So, to be clear:



- 1) They are not for sale.
- 2) They are not to be used as back up radios for HF radios you already have.
- 3) There is no requirement to join ARES/RACES.
- 4) There is no requirement to use them for DXing, contesting, ragchewing or any other specific HF operating.
- 5) This is a loan. If, after using the radio, you decide you love HF, at some time in the future (maybe years from now), when you buy your own HF radio, you must return the radio or loan it to someone else (with my permission and under the same conditions). If you decide you hate HF, you can return the radio to me, with no re-stocking fee.

If you're interested in trying HF, call Bud, N7CW, at 928-771-8267 or send an email to n7cw@cableone.net . ■



Photo by Patti, KD7VGB

Fat Tire Criterium Race, April 27, 2012

YARC members covered this event and provided Public Service Communications for several other events in the April Whiskey Off Road Mountain Bike Ride/Race and the Whiskey Row Marathon in May.

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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. Our deepest gratitude to Bill Kafka, W2YAV for allowing us to acquire the original club repeater.

Minutes of April 26, 2012 Board Meeting



For the first time the Board met at **Coco's** (Highway 69 at Frontier Village in Prescott) for dinner at 5:00 p.m. and the

Board Meeting prior to the May YARC General Meeting. **In attendance were: AD7YR, WN7E, K6VVR, K7SEN, W7BNW and KE7KEV. Excused were KE7NAP and KV8TD.**

KE7KEV announced that she would be out of town for the May YARC General Meeting and was informed that a former Club Secretary is the one to ask to take notes in her absence. Hence, **WB7RFY** took notes for the General Meeting, posted herein.

AD7YR opened the meeting by introducing the subject of **Field Day** again and the need for Club members to volunteer for the various duties associated with this annual event. Much discussion followed. Sign up sheets will be circulated at the General Meeting in May.

AD7YR decided to table the discussion regarding badges to honor past officers and those who have contributed much to the Club.

W7BNW announced that he has withdrawn the request for money for the Club students.

W7BNW also tendered his verbal resignation as a **Board Member**, effective immediately. A lot of discussion followed this sad and shocking announcement. We are sorry to see him go. **AD7YR** closed the meeting at 7:30 p.m.

Respectfully submitted by
Barbara Ashley ~ KE7KEV
YARC Secretary

Minutes of May 3, 2012 General Meeting

Be it noted that in the absence of **KE7KEV**, YARC Secretary, **WB7RFY**, took these notes at the May meeting and they are thus presented. A HUGE THANKS TO **JEFF, WB7RFY!!!**

Meeting was called to order at 7:03 PM by the President, **AD7YR**. Following the Pledge of Allegiance, introductions of Board and newcomers was made. Attendance: 73 with several visitors including **K7UBO, KE7NFX**, and others.

Minutes of the April meeting were approved as published on **motion** of **KB7TRE**, second of **N5RO** and no dissenting.

Treasurer's report was approved as published on **motion** of **WB7TPH**, second of **W7HAM** and no dissenting. Patches (\$3) and decals (\$1) were presented.

COMMITTEE REPORTS:

WA6ZZJ reported ARES/RACES/Public Service busy recent schedule of events including MS-150 & Whiskey Off-Road, and discussed concerns on upcoming Whiskey Row Marathon. See detailed reports elsewhere in newsletter.

Testing was addressed; next scheduled on May 4th, 6 PM. Walk-ins welcome, but pre-registration preferred to testing@w7yrc.org.

AC6AA had nothing to report for Newsletter; please forward event photos to editor.

KF7MAU is accepting orders for custom engraved club badges, \$7.

Refreshments: **K6UWV** has provided drinks and treats; please recycle. School National Junior Honors program added a tray of cake; we are spoiled.

K7SEN reports Net control operators and additional Elmers are always needed; sign-up sheet on front table, or K7SEN@arrl.net.

KB7TRE reports **K7GMG** had 9 youths displaying and offering demonstrations April 19th at the County Education Fair, and made a great impact. Program is winding down for summer break, but will have at least one additional candidate at May test session.

KD5VRW reported great success at just concluded General class and thanked all instructors.

KE7KEV took food to the **Food Bank** Saturday and we had donated **16.5 pounds plus \$5 cash.**

New **Public Information Officer** solicits timely photos of club members at events for inclusion in after action press releases. pio@w7yrc.org.

OLD BUSINESS:

Field Day: 3 stations, good food and friends is the plan. Last full weekend in June at Ramada near Dog Park off Willow Creek Rd. Committee Chair, **KE7NAP** authorized, on **motion** of WB9VGJ, second of K6UWV and no dissenting, budget of \$300 for event preparation. Need volunteers to staff sub-committees of set-up, operators, food, clean-up, greet public, ...; many ways you can help - a little or a lot - bring friends. President extolled virtues of the event and desire for club to wow our communities.

IRLP is now active on 146.10, no PL, node # 3182; system rebuilt and active thanks to **AD7RL**.

Mailing list is now active on club website; old system will end this month. Only about 20 % of members have subscribed to date! This new list is **essential** to you for receiving club info, including Newsletter availability and timely messages and reminders.

NEW BUSINESS:

President regretfully announces that **W7BNW** has resigned from position of Board Member. Thanks to Bryan, W7BNW, for the work he did as a Board Member.

A new Board member is needed; vacancy will be filled by appointment. Please contact any Board member if you are interested in serving your club.

AD7FW reports that K7QO was seen at a recent hamfest and is doing well. Unfortunately, he is no longer in the Prescott area, but has been a great benefit to Ham Radio.

AD7YR filled in membership on change to time and location of Board meetings. To better serve membership on meeting night, Board meetings will now be held the Thursday before the meeting, 5:00 PM, Coco's restaurant at Frontier Village on Hwy. 69. This change will allow for additional discussion time if needed, and keep Officers and Board available to members before the General Meeting. Board meetings are always open and members are welcome to attend.

TONIGHTS' PROGRAM: Fred Zimmermann, **N7PJM** will tutor us on the fun and usage of Win-Link, and demonstrate on the 145.01 local gateway. An e-mail via radio system via HF, VHF, or UHF; find more at www.winlink.org.


50/50: of \$62.00 was won by **KE7NAP**. Additional prize of an atomic clock was won by **KF7OTB**.

Adjourned at 7:44 PM, on **motion** of WB9VGJ, second of WA6AQK, and no dissenting.

Respectfully submitted by

Barbara Ashley ~ KE7KEV


Membership Count:

1st Thurs. in April.....	169	
Gain/Loss.....	0	
1st Thurs. in May	169 *	

* Includes 3ea 3-month memberships

June Program

YARC club member, Bud Semon, N7CW, will present his recent trip to Liberia with the Voodoo Contest Group to operate in the CQ World Wide CW DX Contest.



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YAVAPAI AMATEUR RADIO CLUB

May 2012 Treasurer's Summary - Tom Griswold WN7E

Income

Date	Callsign	Name	Code	Check #	Amt. Paid	G. F. Amt.	Rep.Fund	ARRL
05/03/12	WB7UZV	Jim Ball	R	cash	\$20.00	\$18.00	\$2.00	
05/03/12	KD7MTJ	Albert Crook	R	10597	\$20.00	\$18.00	\$2.00	
05/03/12	KE7KWH	Ken Henson	R	cash	\$20.00	\$18.00	\$2.00	
05/03/12	AD7YR	Creighton Grotbeck	R	2314	\$20.00	\$18.00	\$2.00	
05/03/12	KF7OTB	Vince Carr	R	1435	\$20.00	\$18.00	\$2.00	
05/03/12	KF7RIH	Evelyn Carr	R F	"				
05/03/12	KDE7NAP	Ellis Rackoff	R	cash	\$20.00	\$18.00	\$2.00	
05/03/12	KB8NRI	Bob Armstrong	R	cash	\$20.00	\$18.00	\$2.00	
05/03/12		David & Joan Steninger - donation		cash	\$22.50	\$22.50		
05/03/12		Decals		cash	\$4.00	\$4.00		
05/03/12		Raffle 50/50		cash	\$124.00	\$124.00		
05/05/12	AD7TF	Dick Courtney	R	5047	\$20.00	\$18.00	\$2.00	
05/05/12	KF7ANX	Frank Stassell	R	2737	\$20.00	\$18.00	\$2.00	

Income Totals

\$330.50 \$312.50 \$18.00 \$0.00

Expenses

05/03/12		Hays Companies - Ins.		1110		\$200.00		
05/03/12	WB7TPH	Don Bauer - ARRL info		1111		\$7.50		
05/03/12	K6UWV	David Passell - refreshments		1112		\$70.73		
05/03/12	KE7NAP	Ellis Rackoff - 50/50 winner		cash		\$62.00		
05/04/12	K7SEN	Neil Vince - Office supplies		1113		\$91.15		
05/04/12		Allegra - newsletter		1114		\$28.22		

Total Expenses

\$459.60

Beginning Balance	\$6,718.39		
May Income	\$312.50	Apr. end Repeater Fund	\$1,589.77
		May 2012 Repeater Fund	\$18.00
Sub Total	\$7,030.89	Interest 30 Apr. 2012	\$0.13
Expenses	\$459.60	Repeater Fund Bal.	\$1,607.90
General Fund Balance	\$6,571.29	ARRL Payments	\$0.00
Net Loss/Gain	(\$147.10)	May Income	\$330.50

Monthly Fox Hunt

By John Broughton, WB9VGJ

The monthly foxhunt was held May 6th. Jim, WB7UZV, was the fox. He hid the transmitters behind the Arizona Pioneers' Home. There were two teams hunting: Dave, N7GLH, hunted by himself and I and Jeff, WB7RFY, hunted as a team.



Jeff and I found the transmitters. Dave drove past on the street behind the home twice, once in each direction. However, he did not find the transmitters. He had to quit the hunt before the allotted time was up as he had other commitments, unfortunately.

We did have a first, though: the secondary transmitter was taken by a couple who were picking up some stuff and dumpster diving. As you will see in the pictures of the hunt, see link at the end of this article, the secondary transmitter was hidden on the side of a commercial garbage bin, about a block west of the Pioneers' Home. There was a house immediately to the west of the bin where the occupants had put out furniture and lots of other stuff to be given away. There was a second garbage bin several feet north of the one where the transmitter was hidden.

A couple in a small SUV stopped and spent many minutes loading up stuff from in front of the house. Then, they drove into the parking lot by the garbage bins and stopped directly in front of the one with the transmitter. The transmitter was just a few feet from the front passenger door. They started getting stuff from the other garbage bin.

I figured they'd see the transmitter and antenna, so I walked down to make sure they did not take it. Jeff said the signal stopped when I was about half way there. When I got to the SUV, the wife had the transmitter and antenna on the front seat and it was completely disassembled. I explained to them what it was and that it was not something being thrown away. They cheerfully gave it back to me.

A short while later a pickup truck stopped next to the bin and loaded up a couch at the house. I walked down again to tell the three young men about the transmitter and that it was not being thrown away, in case they saw it and wanted to take it.

This was a good lesson for the fox to always keep the

transmitters in sight, just in case. We got a good chuckle out of this experience.

Jim, Jeff and I had our usual enjoyable social get-together after the hunt at Denny's.

We would encourage more folks to get involved in the hidden transmitter hunts. They are really fun and help develop direction-finding skills.

Pictures of the hunt can be seen at:

<http://tinyurl.com/7g3eeb5>

73,

John, WB9VGJ

YARC IRLP is Up and Running

Thanks to George, AD7RL, the IRLP station has been rebuilt and now operating on 2 meters at his QTH in Chino Valley. He has posted brief instructions on using the IRLP, which are shown below.

For more operating tips and suggested procedures for bringing up our IRLP node as well as how to contact other nodes and reflectors, refer to Jack, W7JLC's August 2005, article in the Yavapai Signal.

(The following is reprinted from AD7RL's May 5th e-mail)

"It looks like all of the bugs in IRLP have been swatted. Give it a try, 146.100 MHz no PL tone. Node #3182.

Don't know who to connect to? Check <http://irlp.net>

Quick and Dirty Instructions:

- 1) Listen to make sure the channel isn't in use
- 2) Dial the 4 digit node number you'd like to connect to
- 3) Listen to make sure the remote channel isn't in use
- 4) Be nice
- 5) Close link by dialing 73 " ■



By Lloyd, WA6ZZJ

ARES/RACES.....

Cherry / Dewey Fire.....

The Yavapai County Emergency Operations Center (EOC) was activated for about four hours on Saturday, May 12, 2012 due to the Cherry / Dewey fire. Yavapai County ARES/RACES is called in whenever the county EOC is in operation. Communications was established between the EOC and the Incident Command Post (ICP) located at Central Yavapai Fire Station 54 on Highway 169 in Dewey. At the EOC several fire frequencies were also monitored to keep the EOC Staff apprised of the situation as it developed.

One single engine air tanker was able to be brought in and two drops were made on the fire before dusk set in. Other equipment was ordered, but due to the Sunflower Fire being ongoing at the same time additional resources were at a minimum.

The fire was considered contained that evening and held to low acreage.

Gladiator Fire.....

Just after noon on Sunday, Yes.. Mother's Day, the Yavapai County EOC was activated once again for the Gladiator Fire burning north of Crown King. It remains activated at this time. Activity so far has been monitoring of various fire frequencies, from the EOC Radio Room, to keep the EOC apprised of happenings in the field. The Yavapai County EOC Radio Room is being staffed on eight hour shifts starting at 0600 in the morning until 2200 +/- in the evening. This staffing will continue as long as necessary with the EOC being in full operation. Thanks to all ARES/RACES members who have volunteered their time during this event. It has been good experience for operating in an EOC environment and working within the Incident Command system. There are times when person-

nel on duty may wonder "why am I here?.. Basically we are there because at any minute during an event like this the battle plan could change. Being on station means we will be ready if it does.



Photo by Patti, WD7VBG

Gladiator fire from MARC's location on Monday.

The ARES/RACES MARC communications vehicle was dispatched to the 'Old Cordes' area on Monday, but recalled later in the day. It was positioned with the Sheriff's Mobile Command Post and the YCSO Jeep Posse CCV.

A Type I Incident Management Team is in charge of the fire at this time. Last estimate (05/20/2012) was the fire is over 12,800 acres and still growing. The areas of Crown King, Turkey Creek and Pine Flats are all evacuated at this time and it is possible that the communications facilities on Towers Mountain could be threatened. They are making every effort to protect them as this is being written.

So far, we are one week into this event and the containment is only at 12% at this time.

Even with a major fire burning south of Prescott the Forest Service Patrols are still finding abandoned campfires in the area. These fires are a reminder to keep your radio gear in top shape with charged batteries and or alternate power sources.

PUBLIC SERVICE COMMUNICATIONS.....

Whiskey Off Road Mountain Bike Ride/Race...

The 9th annual Whiskey Off Road Mountain Bike event in Prescott took place on Friday, Saturday and Sunday, April 27, 28 and 29, 2012. This was the second year of this being a three day event that required considerable staffing. YARC members stepped up to cover the event all three days. This year we once again worked with the YCSO SAR Quad Unit and the Southern Arizona Rescue Association (SARA).

This year there were 1750+/- involved in the five events. The 15 mile 'Fun Ride' and 'Fat Tire Criterium' on Friday, the '25 and 50 mile rides on Saturday and the '50 mile Professional race' on Sunday.

There were a couple of incidents that required transportation of riders to medical facilities with injuries and one asthma attack. Other incidents were mainly tired, slightly bruised riders and broken bicycles.

The organizers of the event appreciated our communications and look forward to working with us again next year.

The Whiskey Row Marathon...

The Whiskey Row Marathon, a long standing event for YARC communications, took place Saturday, May 5, 2012. This year there were upwards of 2000+/- runners in the Full Marathon, 1/2 Marathon, 10K and 2 mile Fun/Run/Walk.

Communications were maintained between 9 Water Stop locations, the YMCA Van, a Shadow Operator for the Race Director and Net Control at the finish line. The YMCA organizers maintain, year after year, that they couldn't do this without our help....

Upcoming Event Communications.....

At this time, the Yavapai amateur Radio Club Public Service Communications season has wound down until September. The next scheduled events are:

Saturday, September 8, 2012 March of Dimes March for Babies

Saturday, September 22, 2012 Tour de Pee Vee 1/2 Marathon

Friday and Saturday, September 28 and 29, 2012 Prescott Rally

Saturday, September 29, 2012 Groom Creek Classic 1/2 Marathon

Saturday, October 20, 2012 Step Out Walk to Stop Diabetes ■

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, K7SEN (928) 775-2158
Jim Ball, WB7UZV (928) 445-2997
Bud Semon, N7CW (928) 771-8267

Elmers / Mentors

By Neil Vince, K7SEN

The club is still looking for more elmers and mentors. If you are interested in helping your fellow ham, please contact Neil – K7SEN at 775-2158 or email ask.elmer@w7yrc.org

I'd like to welcome and thank Bud – N7CW for stepping up and agreeing to share some of his expertise. For those of you who do not know Bud, he is probably best known for his accomplishments as a contester and DXer. Bud often opens his home to new amateurs, and is willing to explain the ropes of HF and various digital modes. He is also very active in Ares / Races. Welcome Bud! ■

VE Meeting and Training

By Mary Vince, AB7NK

A long overdue VE Meeting and hands on training session was held before the test session on May 3, 2012. There were a total of twelve VE's in attendance which included one visitor.

Material covered was the VE team's policies and procedures. Only a few minor changes were suggested and changes have been made and sent to all active VE's.

I'd like to thank everyone who participated in the training as well as all the VE sessions. If you are interested in becoming a VE, please purchase or download the VE manual. <http://www.arrl.org/ve-manual> . You will be required to take an open book exam prior to obtaining your VE accreditation.

Being a VE is extremely rewarding. I have been a VE since I became a ham and have held the position of Team Leader and Liaison since 2005. After three years of emails and phone calls with key people at the ARRL VEC department, I will be resigning as VE Team Leader and Liaison effective December 2012.

It is extremely important that someone step forward to fill this position. One of the requirements for keeping our special service club status is we continue to hold VE sessions.

There are two test sessions scheduled for the remainder of 2012, August 11th and November 3rd. My hope is someone will step forward and take advantage of these last two testing's to learn the final paperwork that is submitted to ARRL. If you are interested, please email me at testing@w7yrc.org .

The rewards received in this position are much greater than the time spent preparing, testing and sending in the final paperwork. ■

Wednesday Evening Net



Every Wednesday at 7:00 p.m. the club net is held on the 146.880 repeater. All radio amateurs are welcome.

If you are interested in taking the Net for an evening(s), contact **Neil Vance, K7SEN** at net.manager@w7yrc.org

Club contacts - At a Glance

President - AD7YR	president@w7yrc.org
Vice President - KE7NAP	vice.president@w7yrc.org
Secretary - KE7KEV	secretary@w7yrc.org
Treasurer - WN7E	treasurer@w7yrc.org
Board Member - KV8TD	kv8td@w7yrc.org
Board Member - K6VVR	k6vvr@w7yrc.org
Board Member - Open	
Board Member - K7SEN	k7sen@w7yrc.org
Arizona WAC Administrator	az.wac@w7yrc.org
Ask Elmer for Help	ask_elmer@w7yrc.org
Badges	badges@w7yrc.org
Field Day Chairman	field.day@w7yrc.org
Fox Hunts	fox.hunt@w7yrc.org
License Classes	classes@w7yrc.org
Membership Application	membership@w7yrc.org
Net Manager	net.manager@w7yrc.org
Newsletter Editor	newsletter@w7yrc.org
Program Inputs	programs@w7yrc.org
Public Information Officer	pio@w7yrc.org
Public Service - DEC	public.service@w7yrc.org
Repeater Trustee	repeater@w7yrc.org
Special Events	special.event@w7yrc.org
VE Test Liaison	testing@w7yrc.org
YARC Party Coordinator	yarc.party@w7yrc.org
Information	info@w7yrc.org
Webmaster	yarc@w7yrc.org
Webmaster	w7yrc@w7yrc.org
Webmaster	webmaster@w7yrc.org

YARC Officers for 2012

President

Creighton Grotbeck, AD7YR
president@w7yrc.org

Vice President

Ellis Rackoff, KE7NAP
vice.president@w7yrc.org

Secretary

Barbara Ashley, KE7KEV
secretary@w7yrc.org

Treasurer

Tom Griswold, WN7E
treasurer@w7yrc.org

Board of Directors (includes Club Officers)

Doug Freeman -- KV8TD
Pete Morrison -- K6VVR
Neil Vince -- K7SEN

Newsletter Editor: Joe Oliver, AC6AA
newsletter@w7yrc.org



June 23-24, 2012

By Don Bauer, PIO

It's almost here. Did you know that the first ARRL Field Day was in 1933? Did you also know that Field Day is an exercise in emergency deployment, a contest, a campout, a picnic, or just an excuse to join others and have some fun? Field day is all of these things. For the Yavapai Amateur Radio Club, it is a chance to gather together, have a good time, enjoy the fresh air of Prescott, maybe do a little operating AND to show ourselves off to our friends and neighbors.

This year, we will be located in a new spot. Instead of the ramada overlooking Willow Lake, we will be in Willow Creek Park, across the highway (Willow Creek Road) from Tim's Toyota. We will have great public exposure, and we will have the benefit of several public service announcements letting people know who and where we are. All of this brings up the point that we need several club members to be ambassadors to the general public. YARC has the opportunity to be very visible to our neighbors, and we don't want to risk giving them a bad impression. Many of our members will be busy on the radios; some will be preparing the food; a few more will be simply relaxing with friends. That's all good! I would like to encourage some of you to dedicate at least a few hours of the weekend to making sure visitors get a good impression.

We will have a visitor information table. We have handouts describing YARC and quality color handouts from ARRL, for anyone interested. But, nothing takes the place of a friendly greeting and an offer to show a visitor around. We want the image of "ham" radio to be a positive one for anyone who comes by. Please consider joining the YARC Ambassador Corp. We would like to keep this function informal, but it would be helpful if you would sign up at the June meeting, so we know when you will be available. See you in June, at the club meeting and Field Day.

May VE Test Results

By Mary Vince, AB7NK

Friday, May 3, 2012, a VE test session was held a week after the last of the two Saturday General classes put on by YARC's Volunteer Instructors. A few individuals took advantage of the test session while others decided to wait.

Results are as follows: 12 applicants -- which resulted in 6 new Technicians, 3 upgrades to General and 1 upgrade to Extra. Congratulations to everyone.

A special congratulations to Talmage Wilkins from Mr. Pemberton's K7GMG school club for obtaining his Technician license.

The next testing will be held Saturday, November 11, 2012 at 9:00 a.m. at the Jeep Posse Bldg.

Pre-registration is encouraged by e-mailing:
testing@w7yrc.org

Upcoming Events

- **June 23-24, 2012** - Field Day at Willow Creek Park.
- **July 20 - 22, 2012** - ARCA/Williams Hamfest.
- **September 8, 2012** - March of Dimes March for Babies.
- **September 22, 2012**—Tour de Pee Vee 1/2 Marathon.

Need Cards Checked for ARRL Operating Awards?

Jim Zimmerman, N6KZ can check your QSL cards for DXCC, WAS, VUCC, WAC, etc.

For information contact Jim at: (928) 713-0542.

Jim's QTH is at: 778 Grapevine Lane,
Prescott, AZ 86305.

Essential₂ memory

By Malcolm, NM9J — from the “PCARA Update”

Here is a PCARA pop quiz. What do the following phrases mean to you?

1. “Every good boy deserves favor” (or fruit or fudge.)
2. “Richard of York goes battling in vain.”
3. “My very educated mother just served us nine pizzas.”
4. “BODMAS”

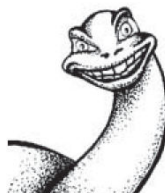
These are all **mnemonics**, or aids to memory. The first is musical and refers to the notes E-G-B-D-F on the treble clef. The second is from Physics and helps to list the colors of the rainbow in order from longest to shortest wavelength --- red, orange, yellow, green, blue, indigo, violet. Number three is from astronomy and defines the order of the planets of the solar system starting nearest the sun: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune and recently-demoted Pluto. The last example is from algebra and describes the correct order to apply arithmetical operators in an expression: brackets, ‘of’, division, multiplication, addition, subtraction.

Maybe you learned some of these memory aids yourself... or perhaps you learned a regional variation, depending on where you were schooled. “Every good boy deserves...” something, but it might not be the “fruit” that I learned as a youngster. Maybe “BODMAS” is a mystery word to you, and instead you learned the American version PEMDAS (Parentheses, Exponentiation, Multiplication/Division, Addition/Subtraction) sometimes remembered as “Please excuse my dear Aunt Sally.” The British version is “Bless my dear Aunt Sally.”

Apart from differences in geography, these variations are probably due to mnemonics being unofficial memory aids, made up by schoolboys long ago, and passed down through generations of youngsters ever since.

From the title of this piece, you might have guessed that chemistry was going to figure in it somewhere. (The American Chemistry Council’s “Essential₂” campaign continues to explain how chemical products help keep you safe and healthy and create a brighter future for you and your family.) One of my favorite mnemonics, still fresh in my mind some four decades later is this one:

“Languid centaurs praise Ned’s promise of small European garden tubs. Dinosaurs hobble erratically thrumming yellow lutes.”



These words conjure up a picture of tranquility from long ago, where mythical beasts (centaurs) and ancient dinosaurs walk around a garden center somewhere in Europe, making medieval music. In reality, the phrase is a *mnemonic* for the following names and symbols of the **rare earth** elements of the chemical Periodic Table:

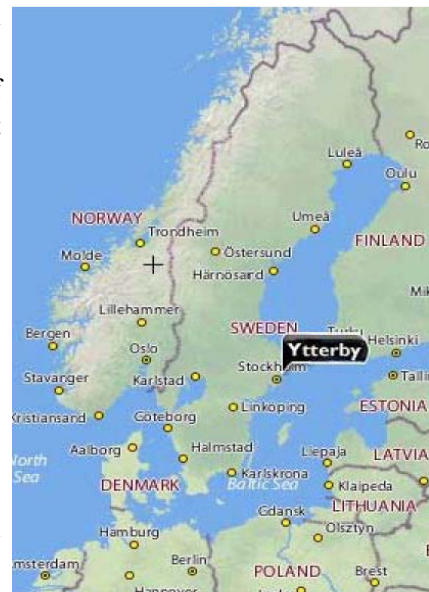
Lanthanum (La); Cerium (Ce), Praseodymium (Pr); Neodymium (Nd); Promethium (Pm); Samarium (Sm); Europium (Eu); Gadolinium (Gd);Terbium (Tb); Dysprosium (Dy); Holmium (Ho); Erbium (Er); Thulium (Tm); Ytterbium (Yb); Lutetium (Lu).

57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu

Section of the Periodic Table showing rare earth elements from atomic number 57 (Lanthanum) to 71 (Lutetium).

This group of rare earth elements was originally named because of their scarcity. The story begins with Johan Gado-

lin who discovered an unusual silicate mineral near the town of Ytterby in Sweden at the end of the eighteenth century. While the mineral was named Gadolinite, the town’s name became incorporated into the names of four rare earth elements: ytterbium, yttrium, terbium and erbium . (Yttrium - element number 39 - is also considered a rare earth.) Johan Gado-



The town of Ytterby is on an island near Stockholm, Sweden.

lin’s gadolinite mineral was found to contain the silicates of cerium, lanthanum, neodymium, yttrium, beryllium, and iron. The rare earth elements have similar properties to each other, making separation and purification especially difficult.

Just a few decades ago, the rare earth elements had

limited uses. The most abundant rare earth metal, **cerium** was employed as the source of sparks in rotary cigarette lighter flints and to impart a bright light to carbon-arc lamps. The oxide was used as a component of incandescent gas mantles that glow bright white when heated in a flame. Nowadays, cerium oxide is also used in the wall linings of self-cleaning ovens, where it catalyses oxidation of the food deposits. Cerium is added to glass to counter the blue-green color caused by iron impurities and for the face glass in cathode ray tubes where it helps resist the blackening that would occur due to bombardment with electrons.

Praseodymium terbium oxides are used in the manufacture of zinc oxide based varistors — electronic components



This power strip contains three MOVs, or metal oxide varistors. The MOVs absorb electrical surges that exceed the normal 120 volts AC

whose resistance decreases sharply when the applied voltage reaches a certain value. They are used to protect electronic devices against surges of high-voltage. Metal oxide varistors or MOVs are fabricated in a similar manner to disk ceramic capacitors, with a ceramic insulator separating two metal plates. The ceramic sintering process results in a structure consisting of conductive zinc oxide grains surrounded by electrically insulating barriers made of other metal oxides, including bismuth, cobalt, praseodymium, and manganese.

Europium oxide (Eu_2O_3) is used as a red phosphor in television cathode ray tubes and in fluorescent lamps. As mentioned in *PCARA Update* for January 2008, the phosphor used to coat compact fluorescent tubes is likely to be lanthanum phosphate doped with the rare earths cerium and terbium (for yellow/green light), and yttrium oxide doped with europium (for red light). This combination produces “white” light.

Development of modern microwave components is being driven by mobile phone technology. Yttrium is used in YIGs (yttrium - iron - garnets), which are ferrites used in microwave filters, and in YAGs (yttrium - aluminum - garnets), used as resonators, circulators and filters in mi-

crowave equipment, including base stations for mobile telephones. Gadolinium and cerium are used as doping agents in these garnet structures, which are also employed in solid state lasers. As mentioned in the December 2008 issue of the *PCARA Update*, cerium-doped YAG is a phosphor which emits yellow light when subjected to blue or ultraviolet light. It is used in white light-emitting diodes, as a coating on the high-brightness blue InGaN diode, converting part of the blue light to yellow to produce an approximation of white light.

Neodymium is used in NPO capacitors. “NPO” stands for “negative/positive zero”; in other words the temperature coefficient of the capacity value is neither positive nor negative, but exactly zero. This requires an insulating ceramic material with a temperature-stable dielectric constant. By adding neodymium to the common barium titanate dielectric, the curve of capacity versus temperature is flattened out.

Neodymium is also employed nowadays in neodymium or NIB magnets. The acronym NIB stands for a particular combination of neodymium, iron, and boron— $\text{Nd}_2\text{Fe}_{14}\text{B}$. Neodymium magnets are the strongest permanent magnets known to date. They are cheaper, lighter, and stronger than the samarium-cobalt magnets used previously. Neodymium permanent magnets are employed in electronic products such as in-ear headphones, loudspeakers, microphones, guitar pick-ups and computer hard disk. The magnetic components must be treated with caution! The tiny neodymium magnets in modern ear-



Sony EX earbud-style headphones contain neodymium magnets for “outstanding bass performance”



This Celestion 12 inch neodymium woofer offers a 300 watt continuous power rating from a 3 inch dia. voice coil.

phones are so powerful that if swallowed, they can pose a health hazard as the magnets stick together across adjacent sections of the gut. They can also affect other electronic apparatus such as pacemakers. Neodymium magnets can easily wipe the contents of a floppy disk or destroy the magnetic stripe on a credit card.

So - next time you read some data from your computer’s hard disk, remember the contribution of the rare earth metal neodymium. It really is Essential₂ memory, and not just “Ned’s promise” from the dinosaur mnemonic. ■

Area Repeaters

Weekly Breakfasts



Wed. Morning Breakfast:

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

Breakfast at Masonic Lodge: 3rd Saturday of each Month at 9:00 a.m.

(1280 Willow Creek Road,

2nd Floor; above Bank of America)

informal – all are invited

* Location data (per WGS84) provided

by Fred Zimmermann, N7PJM

Freq.	PL	Location	Owner/ Club	Auto- Patch	Links	Vo IP	Notes:
52.560-	100.0	Mt. Union	N7NGM			IRLP	Node 3301
144.390	Simplex						APRS- www.aprs.fi
145.290-	127.3	Mingus Mtn.	K7YCA				ARES/RACES
145.350-	162.2	Wildflower	W7QHC				Dawn
145.600	Simplex					Echo	Node 266053
146.760-	131.8	Hayden Peak	N7SKO				WECOM INC
146.780-	91.5	Bill Williams Mtn.	K7NAZ			IRLP	BWMRC LITZ, 3178
146.880-	100.0	Prescott Heights	W7YRC				YARC
146.920-	162.2	Mount Ord	W7MDY				ARA
146.980-	162.2	Mt. Elden	W7ARA				ARA
147.000+	162.2	Mingus Mt.	K7MRG				MMRG
147.140+	162.2	Mt. Elden	W7ARA				ARA
147.220+	162.2	Mingus Mtn	W7EI				VVARA LITZ
147.260+	103.5	Mt. Union	K7YCA				ARES/RACES
147.260+	127.3	Mt. Francis	K7YCA				ARES/RACES
147.360+	162.2	Mt. Ord	W7MDY				ARA
224.080-	156.7	Mt. Union	KJ7DX				Desert Intertie
442.150+	100.0	Mingus Mtn	WA7UID				MMRG
448.475-	100	Mt. Elden	W7ARA				ARA
448.875-	100.0	Mt. Elden	W7ARA				ARA
449.250-	192.8	Chino Valley	K7POF				
449.675-	88.50	Prescott Airport	WB7BYV		Linked to P Mtn.		
449.750-	123.0	Bill Williams	K7NAZ		Linked to Win-Sys		
927.0875-	151.4	Mingus Mtn	WB7BYV				
927.3875-	151.4	Prescott	WB7BYV			Echo	ARA

Y.A.R.C. IRLP NODE

Node Number 3182

146.00 MHz No PL Tone



T-Hunt Frequencies:

Primary - 145.100 MHz

Secondary - 146.565 MHz

For more Repeater Information & Listings refer

- to:**
- www.w7ara.org/Web/
 - www.azrepeaters.net
 - 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 Dick Hughes, W6CCD, our Webmaster

