



YAVAPAI SIGNAL



The Yavapai Amateur Radio Club • Prescott, Arizona • DM-34 • Volume 21 – No. 4 • April 2006

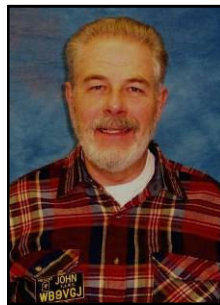


From the Desk of the President



Time flies. One fourth of our club meetings for the year have already taken place, and it seems like the year just started. The third session of amateur license classes is underway and Bob, WB6ODR, reports he is enjoying teaching it. I'd like to thank Bob again on the club's behalf for taking on this task.

Even though members have expressed interest in a club picnic, we still failed to get a volunteer to chair a picnic committee. The Yavapai County Jeep Posse has made an offer to make its facility by Pioneer Park available for such an event. The facility is in an excellent location and offers excellent amenities for a picnic. The board of directors discussed the possibility of the board handling the picnic at the March board meeting, but the consensus was the committee should consist of one or more regular members. I am hopeful that someone will step up to the plate and take on this responsibility. It is not a large or difficult job and I am sure many in the club would support a picnic committee in any way necessary. It would be nice to have a club picnic. It was suggested that getting together at Field Day to help out



VVARA and joining them for a picnic might suffice. That is something hams here do every year anyway. I think a regular club picnic would be nice to have.

It looks like there is a real possibility that we will have a booth at the Yavapai County Fair this September. We are looking at the possibility of doing this in conjunction with VVARA. There will be more information on this at the April meeting. The biggest issue will be getting enough volunteers to man the booth for 10 hours a day for the four days of the fair. I am hopeful we can do that, as this would be an excellent public relations chance for the club and amateur radio.

We have a net control station for the YARC weekly net for every month this year except May and July. I'll be passing the sign-up sheet around at the April meeting hoping to fill those last two slots.

I would like to thank George Marcheschi for selling the Drake twins on eBay and helping enrich the club's bank account.

73, **John, WB9VGJ** ■

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. 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 local 146.880- repeater is the official adopted repeater for the YARC. It 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. Many thanks to Bill Kafka, W2YAV ■

Minutes of March 2, 2006 General Meeting



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

Visitors: Gene Bockman, AB7XW; Ken Edwards, N6KBI; Vi Hughes; Lois Diddams; John Blais; Irene Ragen; Claude Tremper, KC7AJM; Tony Jackson, KI6AHH and Marty Goyette, KF6BTW.

New Members: Loraine Severance, KD6FDA; Cheryl Severance, KD6FCZ; Joan Tremper, AB7KE, and Michael Nesmith, NP2LY, were voted in by the membership.

Meeting Minutes: A motion to approve the Board minutes of February 2, 2006 was made by Jim, N5RO and seconded by Ken, WA6AQK. A motion to approve the General meeting minutes was made by Jack, KE7FMD and seconded by Al, KD7MTJ. Both were unanimously approved by membership.

Treasurer's Report: David, K6UWV reported a balance of \$3220.41. The report was approved after a motion by Ken, WA6AQK and a second by Al, KD7MTJ.

Committee Reports:

- **ARES/RACES/Public Service Events:** Lloyd, WA6ZZJ reported that the ARES/RACES training meeting on Feb. 4th went very well, and was the first hands-on training meeting. From now on, all the training meetings will be hands-on. A fire exercise will be coming up April 7-8. It will be multi-agency. 147.26 repeater will be used.
- The Whiskey Row Marathon will be coming up on Saturday, May 6th. Between 18-20 operators will be needed. Lloyd has a sign-up sheet available. The radio communication is done by our club and we are con-

sidered a major sponsor.

- **Newsletter:** Joe, AC6AA thanked the contributors to the newsletter..
- **IRLP:** Jack, W7JLC reported underutilization, but some interesting QSOs have been going on and interesting areas reached.
- **Patches/Shirts:** Dave, K6UWV has club patches for \$3.00 and Dick, W6CCD has club shirts if anyone wants one.
- **License Class:** John reported that there are 9 students in the class and that all is going well.
- **FM Simplex Contest:** We need to decide on a date for the contest.
- **Public Information:** Jim, N5RO reported that we had better luck with the local newspaper. The Boy Scouts are working on their radio badges and we are hoping to glean a few hams from the group. One scout is in the license class now. Next Wed. they will come to Terry, KB7TRE's classroom and get some experience on IRLP.
- **Booth at County Fair:** Doug, KV8TD reported that it will cost \$90.00. The main problem will be manning the booth for 10 hours per day for 4 days. We have club insurance, but the data must go on their form. There should not be other problems as far as equipment. The Fair will be in September.

Old Business:

- **Net Control for 2006:** We need to have more people sign up.
- **Local Parades:** No one has yet volunteered, so no parade.
- **Joint YARC/VVARA Meeting:** John has not heard back from the president of VVARA about the meeting, but will get in touch with him when available.
- **Club Picnic:** No one has volunteered to work on it, so we will not have a picnic.
- **Drake Twins Sale:** Thanks to George Marcheschi for selling the units on

YARC Officers for 2006

President	Vice President
John Broughton, WB9VGJ wb9vgj@arrl.org	Dick Hughes, W6CCD w6ccd@arrl.net
Secretary	Treasurer
Pat Oliver, K7DUC joliver@commspeed.net	David Passell, K6UWV davidrex@northlink.com
YARC Board of Directors (includes Club Officers)	
Rex Mauldin – N7NGM	
Ken Severance – WA6AQK	
Richard Bozeat – KE7DTR	
Walter Schumann – KF6SPS	

eBay. The proceeds to the club are \$342.90.

● **Special Events Day:** Terry, KB7TRE stated that 5 kids attended along with a number of members. The kids had a good time.

New Business:

● **Donated Radios:** Al, KD7MTJ is giving several radios to Terry for the school. However, he would like to have some one evaluate their performance

Announcements:

● **The Club Calendar on Website:** If anyone needs to put some event on the calendar, contact Bob, WB6ODR.

● **Programs:** Tonight's program will be by Jack, W7JLC, who will talk on APRS. June's program will be by Bob, WA7YUL, who will talk about the FISTS CW Club.

A motion to adjourn the business portion of the meeting was made by Terry, KB7TRE and seconded by Bob, WA7YUL. The motion carried.

50/50 Drawing: 38 tickets were sold and the drawing was won by Alan, KD7OEF.

Respectfully submitted,

Pat, K7DUC, Secretary ■

**Minutes of Board Meeting on
March 2, 2006**

A Board meeting was held at 1815 on March 2, 2006. Present were John, WB9VGJ; Pat, K7DUC; Dave, K6UWV; Dick, W6CCD; Richard, KE7DTR; Rex, N7NGM, Ken, WA6AQK, and Walter, KF6SPS.

- The open meeting guidelines were sent to Bob, WB6ODR, for inclusion on the website.

- John has contacted Bob, KC8BOB regarding VVARA's board response to a joint board meeting between YARC and VVARA. John still has not heard from Bob.

- The club calendar is now on the YARC website.

- It is thought that George Marcheschi has sold the Drake Twins on eBay. We shall hear from George at the regular meeting.

- Since we did not get any volunteers to work on the club picnic, it was the Board's consensus that if no one volunteered tonight, that we would not have a picnic.

- Although we are having more members active at this time, we need many more active members. John will start asking for volunteers next month for this year's pre-field day event. Rex manned it alone last year. Since we will be at the Gateway Mall this year, we will have much more exposure.

- Dick has two T Shirts that were bought by hams, who no longer are members. The name and call sign are removable. It was decided to sell them at a discount.

- Bob, WB6ODR needs expenses paid for the Technician class he is teaching. Bob bought some CD's for the class and has sold two. David will make out a check for this purpose.

- We have received a letter from a gentleman offering a group of items from the estate of a deceased ham. Joe, AC6AA will notify the membership.

The meeting adjourned at 1845.

Respectfully,

Pat, K7DUC — Secretary ■



**YARC Treasurer's Report for
March 2006**

By David Passell, K6UWV Treasurer

INCOME

New Members (see applications for additional information)

Michael Nesmith	NP2LY	03//07	03/02/06 4280/a	20.00
Cheryl Severance	KD6FDA	03//07	03/02/06 cash	20.00
Lorraine Severance	KD6FCZ	03//07	spouse ----	nc
Joan Tremper	AB7KE	03//07	03/02/06 793	20.00

Renewals (Update Roster)

John Marsh (2 years)	KC5DKN	01//08	03/02/06 2883	40.00
Ken Severance	KD6FDA	05//07	03/02/06 cash	20.00
Ray Tyrell	N6MY	03//07	03/02/06 cash	20.00

ARRL Renewals

John Broughton	WB9VGJ		03/02/06 789	36.00
Jack Ragen	W3IVQ		03/02/06 1187	36.00
K. Severance Family	KD6FDA		03/02/06 2085	55.00

Other

George Marcheschi	E-Bay sale of Drake Equipment		03/03/06 280	342.90
50/50 drawing	44 tickets		02/02/06 cash	44.00
Anon	T-Shirt (on sale)		02/02/06 cash	15.00
Michael Nesmith	Patch		02/02/06 4280/b	3.00

Total Income.....\$671.90

EXPENSES

Allan KD7OEF	50/50 winner		03/02/06 cash	22.00
Postmaster	Box Rental for 1 Year		02/18/06 850	50.00
David Passell	Coffee, drinks, and cookies		03/02/06 851	18.33
Insty-Prints	February Newsletter 31033		03/02/06 852	37.76
Robert Smith	Training Expenses (CDs)		03/02/06 853	108.00
Terry Pemberton	Statehood Day (Pizza & Donuts)		03/02/06 854	61.24
ARRL	Ken Severance renew		03/02/06 855	37.00
ARRL	Jack Ragan renew		03/02/06 856	34.00
ARRL	John Broughton renew		03/03/06 857	34.00
ARRL	Ken Severance Family		03/03/06 858	16.00

Total Expenses.....\$418.33

Cash Flow (Income - Expenses)\$253.57

Deposits 03/06/06.....\$649.90

Total Deposits..... \$649.90

PREVIOUS REPORTED CHECKBOOK BALANCE.....\$3220.41

CURRENT CHECKBOOK BALANCE.....\$3473.98

Radio Nostalgia Stories Part 5

by Paul, N6DMV

Paul is president of the International Hungarian Amateur Radio Club with nearly 200 members in 19 countries. This concluding article relates his experience as a lad in Hungary, with stories involving radio after World War II.

Serenade in Blue - or - Timing is Everything.



In the Communist 'Worker's Paradise', the prerequisite for a phone to be installed in your place usually required you to be a member of the Communist Party, plus several recommendations from the attendant komissars. I managed, however, despite not being a Communist [I like challenges] to get one after nearly a year of waiting. The first test of the new

phone was to remove the microphone and connect an amplifier directly to the wires, to increase the music quality, in order to give serenades to girls by playing American jazz records every evening for hours. Listening to American music was strictly forbidden, of course, but I like challenges.

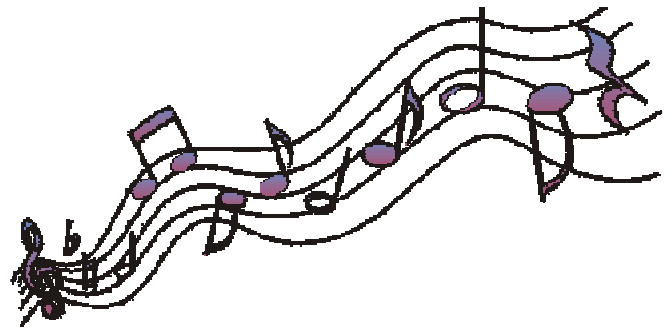
A few months later my phone was unceremoniously disconnected without a notice. I started to ask questions, but was told to keep cool, or I will not need a phone in my life ever! I got the message. We were blue. But not too long, because the venerable RL12P35 tube mentioned before, did now a double duty: 'Serenade-Over-the-Waves'. I chose the 19 meter broadcast band. The BBC and some German stations came in very strong, so I thought I can hide my signal between those. We asked the girls, what music they were requesting for that night for the Hit-Parade: Glenn Miller, Louis Armstrong, the Dorsey Brothers, Nat Gonella, Woody Herman, Artie Shaw, Gerschwin, even Spike Jones, or others. The phonograph records were picked and played. This solution was far better: all my friends could enjoy the music simultaneously. Thanks to you, Comrade Commissar, who took my telephone away!

This went on for a long time until one evening my brother kicked down my door: he just got home with his bike, and noticed that some Russian direction finder cars are zeroing in on me a city block away. I calmly announced the end of the program - in Italian, as always - and pulled the plug. They probably still would be looking for me, had they not been kicked out of our country! At any rate, I feel sorry for them, although they saved a bullet, they ended up with one less slave in the Siberian coal mines!

New Challenges.

As time went by, I grew more thirsty by the day for new challenges. I ended up working for the military, right under the Russian Command, Radio Weapon System Development. Big deal. One leg always half-way in the grave, the KGB tracing every step you make, but I like challenges. It just happened that we had to build a 1 kW short-wave transmitter, tunable across most of the short wave broadcast bands as well. The transmitter worked very well, putting out power far in excess of the spec. We were assigned several exclusive frequencies by the military to test the machine on the air. Coincidentally, it also just happened that through underground connections, we got hold of some wild brand-new American 'bee-bop' jazz tapes smuggled in by my friends, the members of the Hungarian National Soccer Selection Team, who brought the tapes from abroad. Listening to this 'decadent degrading American Capitalist reactionary music was, of course, strictly forbidden, not to mention all this on a military transmitter!

We put on the tapes, and with a serious face, circulated in the lab, with monitoring earphones on, listening to the good music!



I had to go in town on several occasions on business and discovered that others discovered the music as well. Open windows radiated the music full-blast along the boulevards! More than once, I heard people softly telling each other on the street car: "you would not believe this! I discovered a short wave station with the latest modern American jazz music. It is fantastic! Try it tomorrow! The station is coming in so strong that I thought it was next door!" It was. ■

2006 ARCA/Williams Hamfest & ARRL AZ State Convention

The Rodeo Grounds have been improved!

Both tailgate lots have been leveled and gravel has been spread. This will improve the dust problem of the past two years. The Rodeo Grandstand has a brand new cover and the building has been given fresh paint.



By Lloyd, WA6ZZJ



10 Ways to Optimize Your Effectiveness in Public Service Events

1) **Make sure your radio is in top operating condition.** Small problems (such as loose antenna connections, bad microphones, intermittent operation, etc.) may be just annoying during casual operation, but WILL cause major grief under the continuous/severe service of net/emergency operation.

2) **Don't operate your handheld with it hanging on your belt.** Using the radio while it's strapped to your waist reduces your effective radiated power by more than 10 dB. That's a 90% reduction in power. Hold the radio in your hand, with the antenna in the clear.

3) **Regarding antennas,** those 3" rubber dummy loads may be cute, but you're throwing away 3-6 dB of power when using one. (If you're *really* into math, compute the loss of a 3" rubber dummy load used on a belt clip). A telescoping half-wave has a gain of as much as 10 dB over a 3" rubber duck and a quarter-wave provides a 4-6 dB improvement. Even a 12-15" rubber duck will boost your signal by 3-6 dB over the 3" ones. Remember that one dB can mean the difference in whether or not a critical message gets through.

4) **Have charged batteries and spare battery packs!** If you also have a dry cell battery case, fill it with alkaline batteries. Make sure you have enough batteries with you to carry you through, even on high power.

5) **Use headphones or an earphone** rather than a speaker/mike. Most earphones will plug directly into your HT. Low cost stereo headphones are widely available and will work perfectly with your HT using a mono to stereo adapter. The headphones also have the advantage of concentrating the communications in your ears, while partially shutting out the outside noise. Headphones will also prolong battery life by allowing the radio to operate at lower audio output. A speaker/mike is not effective in a noisy environment --- it doesn't cut the outside noise, it doesn't save batteries, and where is that HT while you're using the speaker/mike?? (Hint --- see #2!)

6) **Speak slowly and clearly** when transmitting! You may take pride in your ability to run your words together and mumble, but the station on the other end may be in a noisy environment and may not receive your message.

7) **Check out your ability to use simplex.** * Even if the operation is being conducted on a repeater, there may be "dead spots," the repeater may go down, or, sad to say, there may be jamming. Even if you can only work the two or three stations closest to you, a message can still be relayed. To maximize your simplex range, please reread #2 and #3.

See **ARES/RACES**. Page 6

ARES/RACES

With the Public Service Communications season beginning with Whiskey Row Marathon on Saturday, May 6th let's touch on a few ways to improve our operating effectiveness. Some of the tips below are especially applicable to the Marathon as we use the 146.880 repeater in order to have hand-held capability at all of the Water Stations.

Voice Operations

Voice operation is one of the primary modes used in emergency communications. It is the most efficient way to handle the basic short messages used in all types of nets. There are many ways to enhance voice operations and improve both the accuracy and efficiency.

A directed, formal net is the most efficient and accurate method for managing any type of traffic net. The Net Control Station (NCS) will manage the traffic flow and all other types of contacts on the net. Formal operations include the use of the phonetic alphabet, the correct pronunciation of figures, use of procedure words and correct priority of traffic.

Knowledge of the phonetic alphabet and proper pronunciation of figures (numbers) will help during poor conditions and spelling unusual words (medical terms etc...) and with addresses or map coordinates. Understanding the use of procedure words (pro words) will also help improve the quality of traffic handling by helping provide a clear understanding of what is being said.

Call signs are needed to be able to tell who is who. Tactical call signs are basically used in emergency communications to do just that. As hams we are required to give our amateur call signs at the end of every contact. Do not over do it. Too many call signs will just prolong the contact and probably waste valuable air time on a busy net

When a station needs to contact another station in order to pass traffic, first he must contact the NCS and ask permission to do so. To contact net control all one needs to do in a directed net is give his/her tactical call. Net control is the only station you should be calling so doing this will be sufficient. See example below:

Water 2: **Water Two

Control: **Water Two

Water 2: **The lead Marathon runner just passed this point.

Control: **I copy. KC7???

Water 2: **K7???

● **ARES/RACES** *Continued from Page 5*

* For the Marathon, simplex will only be used as a backup if the repeater fails.

8) **Listen to net control** and **direct all communication through him/her**. Identify your station when calling net control and keep all communications direct and to the point.

9) **If you must leave the radio** or the area to which you have been assigned, first seek permission and acknowledgement from the net control station, make your "time off" as short as possible, and check back in with NCS immediately upon your return.

10) **Project a good image** to the non-hams around you that are part of the event/emergency. This means acting professionally, using basic hygiene skills, etc.

11) **HAVE FUN**.....

Whiskey Row Marathon

I am pleased with the response so far to assist with this years Marathon. In all the years we have been doing communications for this event, this is the first time I am able to assign at least two operators to all locations. I will still be taking names at the April YARC meeting to get a list of standby personnel in case someone has to cancel out. My hope is that this is a sign of good turnouts for all of our events this year.

Thanks to all who have signed up so far. ■

Lloyd, WA6ZZJ

Special Offer to ARRL Affiliated Club Members.

Have you wondered about **Radio Frequency Interference**? Exactly what is it, what causes it, and how to get rid of it?

For a limited time, we are offering ARRL affiliated club members the opportunity to participate in the Radio Frequency Interference online course at a \$15.00 discount. (Regular price, ARRL Members \$65.00 Nonmembers 95.00)

- Get tips and suggestions for dealing with RFI problems
- Various types of filters.
- Sources of RFI
- Forms of TV interference
- On-line course, accessible 24/7 during the 16-week session

How to Register: Follow this link:

<http://www.arrl.org/cce/courses.html#ec006>

Enter the discount code **AC42306** on the registration screen

Offer expires April 23, 2006

QUESTIONS?

Please send questions to Jean Wolfgang, WB3IOS at cce@arrl.org.

Adopting a School *By John, KD5IBY (Submitted by Bob, WB6ODR)*

Well here we are in a new electronic revolution, computers, I-Pods, and video games. How can amateur radio compete? How can Amateur radio survive? Kids have no interest in learning about ham radio. Ham radio is for grandpa or grandma- not for the kids. Kids have cell phones, I-Pods, computers, and little time for sitting around tuning a rig to a station half way around the world. For that matter, why learn that dit-dah dit-dah thing that's old hat? Nobody uses that any more.

Well like in nature when you lose one creature, you usually lose 5 more that depended on the fellow to keep those species alive. And technology is not any different.

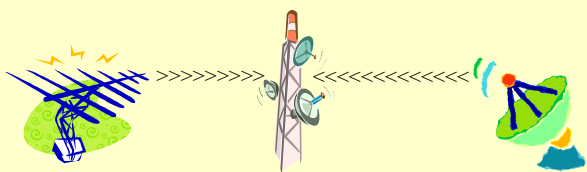
The last ham fest I attended was a sea of gray and very few young folks were there. The ham club I am secretary of is also a sea of gray with the average age between 50 and 90. Our youngest and only young member is 30 years old. So what are we doing wrong as a community of communication?

Maybe we need to get out there and go to grade schools, middle schools and high schools and offer our expertise and promote our hobby to the young children and teach them about amateur radio and where the technology came from for that cell phone or computer.

The ARRL has grants for schools to teach and set up ham radio stations right in the classrooms at no expense to the school or teachers. So why are we not out there promoting ham radio before it dies completely? Every club in America should adopt a school and donate a few hours of time giving these kids a chance to maybe talk to the astronauts, or a country that they may have never heard of.

There is only a hand full of schools across this great land that currently use Amateur radio as a teaching aid in the classrooms.

The importance of amateur radio has been proven over and over in our communities across the country every year that has past since ham radio came into assistance. Hurricane Katrina was a good example of why we cannot let amateur radio pass away. So lets consider adopting a school as a club project. ■



Doubling on a Repeater

Ever wonder why you hear only one station on a repeater when two stations simultaneously transmit? If you listen to HF CW or SSB stations, especially during a contest, all the signals are jumbled together.

It turns out that the ability of a repeater to capture one signal is an intrinsic property of frequency modulation (FM) and receiver design.

Most noise is amplitude modulated. A properly designed FM receiver is immune to this noise, and FM, by its very nature, has noise suppressing characteristics.

To remove amplitude modulated noise, a limiter is used in FM receivers. A limiter is a special type of IF amplifier whose output is constant over a wide range of input amplitudes. Thus, it clips noise peaks present in the signal, greatly reducing the noise level prior to detection.

Even without a limiter, frequency modulation is intrinsically resistant to noise. This is because it takes a strong interfering signal to cause a significant phase shift of the carrier, which results in an improvement in the signal-to-noise ratio.

An interesting consequence of the inherent noise suppression of FM is the "capture effect". If two stations are transmitting on the same channel, an FM receiver will only demodulate the strongest signal, even when the signals differ in strength by only 1 dB. The complete suppression of the weaker signal occurs at the receiver limiter, where it is treated as noise and rejected. When both signals are nearly equal in strength, or are fading independently, the receiver may switch from one to the other. ■

For Sale

Cushcraft Model A270-6S A 2M/440 Dual Band, 3-elements on each band. Can mount vertical or horizontal. Used a short time - like new. **Only \$60 OBO**

3-Element Mini-Beam for 10-12-17-20M (says 6M, but never tried it). 10ft boom; longest element 11'9"; trigonal reflector 48" H; weight 26 lbs; windload 3.1 sq ft; 7 dBi gain on 10M - 6 dBi gain on 20M; power rating 1200 watts. Made by TGM Communications in Canada (see QST ads). Still together (just took elements off boom). Should transport easily. **\$250 OBO**

Yaesu G-450A Rotator— medium duty applications up to 10 sq ft wind load. **\$150 OBO.**

Rich, N9CEX 771-1614 or rnacpts@netzero.com

Program Speakers

April - "The 7th Area QSO Party" John, WB9VGI will give a PowerPoint presentation.

May - "My Stealth Antenna and some Transmission Line Considerations", by Ray Tyrell, N6MY.

June - "FISTS CW Club", by Bob, WA7YUL.

The 7th Area QSO Party! May 6-7, 2006

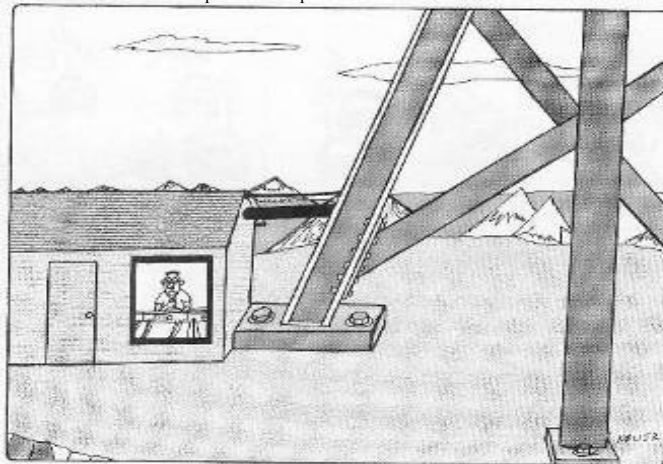


The 7th Call Area QSO Party is designed to encourage friendly competition among the states in the W7 call area and to provide a forum for hams in these states to be "DX" for a weekend. It is scheduled to coincide with the MARAC County Hunter's CW contest in hopes of providing more counties and more activity for both contests and for other state QSO parties running on the first weekend in May.

The operating hours are 1300 UTC Saturday to 0700 UTC Sunday (6 AM to midnight PDT the first Saturday in May).

Details (rules, classifications, scoring, etc.) may be found at <http://www.7qp.org> as well as the Arizona Captain: Bob, K8IA, BobK8IA@aol.com ■

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"Yes, I really am running just 5 watts QRP ... although I suppose I do have an above average antenna system"

YAVAPAI SIGNAL— April 2006

This Month's Featured Ham

By Pat, K7DUC



April's featured ham is **Jack, W7JLC**. We all share the same hobby as Jack, however, Jack is into more facets of ham radio than most of us can imagine.

Jack first got his license as a Novice in December, 1963, when he was 14 years old. He has been active continually since then and earned his Extra Class in 1978. While in the Navy, he remained active wherever he was sent. While in radioman's school, he ended up teaching code, since his code speed was faster than the instructor's.

He operates on 70cm, 2 meters, and the HF bands, except for 160M at this time. He also uses slow scan TV and several digital modes. Jack usually works 2M FM, 70cm IRLP, 75M sideband, and PSK-31. However, occasionally he uses echolink and packet.

Jack participates in some contests in the VHF mode. He goes mountain topping. He has gone on field day for the past four years, and is also in RTTY contests.

Jack has been retired for the last two years. He was a Satellite Communications Engineer for Lockheed-Martin. The last four years of his career, he was assigned to manage Motorola, which is now General Dynamics.

His most memorable contacts were with Barry Goldwater, King Hussein, Antarctica, and the astronauts in the space shuttle.

Jack is into balloon tracking with his wife Sue, NØGUT, and some students. The balloons are equipped with instruments and Jack follows them with GPS while Sue drives.

His last CW contact was on 30 meters at 4 a.m., with the Peter I island DXpedition.

Jack has built balloon payloads, along with many other things.

Memorable related mail was the WAS that he earned on 40 meters with a backpack radio running 20 watts.

Jack's ham related activities include ARES, balloons, volunteering at Embry Riddle with the Society of Women Engineers, who are building a satellite using a ham band and a ground station. He will be running a ham class for the students and faculty over this summer and a one day crash course in April for the Crown King Fire Dept. in conjunction with ARES/RACES. He is also taking the test to become a VE.

Jack would like to get kids involved in activities such as 2M simplex and other forms of ham radio.

We next adjourned to the ham shack, which is very well equipped. The IRLP station was the first thing that we saw. An SSTV transmission was coming over one of the units. He has equipment to cover various types of transmissions.

Jack uses a Ham Radio Deluxe program that will do many things, such as tracking space stations, audio grabbing and playing, logging, and other great features.

He also can remotely operate his telescope from his ham station.

His antenna farm contains several types of VHF and UHF antennas, and includes a SteppIR vertical for the HF bands.

Next, Jack showed us his observatory -- a small building containing another hobby, which he integrates with ham radio.

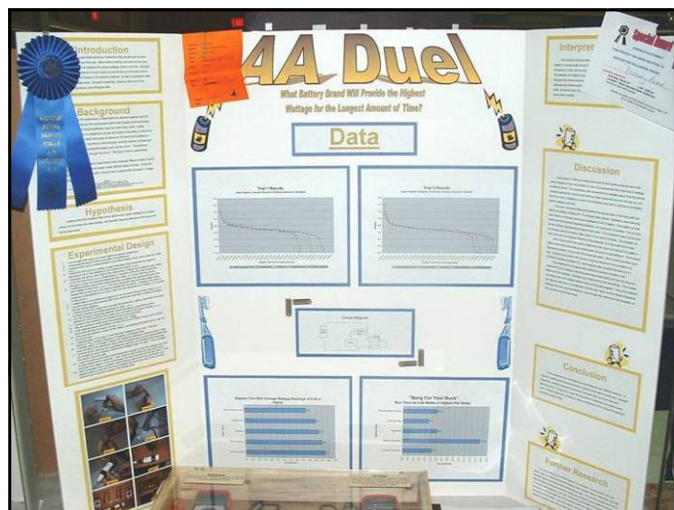
W7JLC is an extremely busy ham, who makes optimal use of ham radio. He is very active and appreciated member of our club. ■



Jack's Observatory

What Battery Brand Will Provide the Highest Wattage for the Longest Amount of Time?

By Joe, AC6AA



We visited the Northern Arizona Science and Engineering Fair, held at Embry-Riddle in Prescott, AZ, in March 2005. There were many interesting science projects prepared by students in K -12th grades. One in particular that struck my fancy was an exhibit on AA batteries (see above photo).

Five brands of alkaline AA batteries were tested to determine their performance under load. Batteries were run continuously in an electric toothbrush. One of the questions the student attempted to answer was: *Does an Energizer battery last longer than others?*

Conclusion: Listed in order from best to worst --

For Performance:

- Duracell Coppertop
- Kirkland Signature
- Everactive
- Energizer Max
- Rayovac Maximum Plus

For Value

- Kirkland Signature (Costco)
- Everactive
- Rayovac Maximum Plus
- Duracell Coppertop
- Energizer Max

- ▶ The Energizer “Bunny Rabbit” battery was not the one that lasted the longest.
- ▶ The longest AA battery time of 5 hours and 30 minutes was from the Duracell Coppertop batteries at a total price of \$1.36 for 2- AA batteries.
- ▶ The best buy, however, was the Kirkland Signature battery, which lasted almost the same length of time, for a cost of 72 cents for 2- AA batteries.

Additional AA Battery Reviews While some student battery tests may not be very scientific in nature, several more methodical battery articles and reports exist. Many reviewers choose Duracell as the longest lasting of the alkaline batteries. However, most experts agree that there is little difference among the popular alkaline batteries and recommend

buying by price instead of brand. A comparison of different types of AA batteries follows.

Rechargeable AA Batteries

▶ **NiMH (Nickel-Metal Hydride):** For most applications, experts say the most economical and long lasting choice is a rechargeable NiMH battery. In one test, the *Energizer 2300** AA NiMH lasted 10.49 hours on a full charge (using four batteries), while Panasonic, Duracell, and Energizer alkalines lasted less than four hours. An alkaline battery still is a better choice for low-drain remote controls and smoke detectors, since an NiMH loses its charge when not being used. Also, NiMH batteries will not perform well in high discharge applications and have twice the self-discharge rate of NiCd batteries.

▶ **NiCd (Nickel-Cadmium):** NiCd rechargeable batteries are very durable and reliable. NiCd cells have a very low internal impedance that makes them perfect for high-current draw applications. They also work well at extreme temperatures. The downside to NiCd batteries is that they contain cadmium, which is not environmentally friendly (presents landfill problems).

▶ **Li-Ion (Lithium-Ion):** AA Portable Power Corp. produces an AA size (14500) 3.6V 750mAh rechargeable cell with less weight and higher energy density than any rechargeable battery. The Li-Ion has no memory effect and has a longer storage life than a NiMH battery. However, Li-Ion batteries may explode if charged or discharged incorrectly, so a special DC Charger must be used.

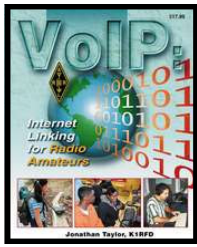
Disposable AA Batteries

▶ **Oxyride:** Tests show that the new *Panasonic Oxyride** now is the best disposable battery for high-drain applications like digital cameras. The Oxyrides last twice as long as standard alkaline batteries and do not cost any more. However, for low-drain applications, the Oxyrides have no particular advantage over regular alkaline batteries.

▶ **Alkaline:** The *Duracell Ultra** alkaline battery slightly outlasts other brands. However, since they cost twice as much as an off-brand, you may be better off selecting alkaline batteries by price. Alkaline batteries have a shelf life of about five years and are great for smoke detectors and other low-drain devices. For these applications, the Duracell Ultra alkaline battery can outlast the new Panasonic Oxyride.

▶ **Lithium:** The *Energizer e2* Lithium* (Lithium-ion) battery may last longer than alkalines and NiMH batteries, and perform better at low temperatures. However, they are twice as expensive and only last about 50% longer than the other types...after which they are thrown away. There are disposal concerns if moisture enters a cell. For most uses, a rechargeable battery is still more economical for the long run. ■

* Top-rated batteries



Node Talk

By Rex Mauldin/N7NGM

IRLP AND EchoLink Compared

I have written about IRLP thus far in this column, so this time around, I will discuss Echo Link and the similarities and differences between the two in the limited space this column allows. There is actually quite a bit that can be written about these two, and there has in fact been numerous articles written about either one which can be obtained in past issues of QST, not to mention books that are for sale through the ARRL bookstore.

For our purposes, we shall compare the two from an operators point of view, which can be complicated if access to a computer is limited or non-existent. This is because information is listed on web sites that post node numbers, owner names, a call sign and other general information such as frequency used, PL tones, web address and station location.

Without a computer, a user would not be able to view the information Echo Link and IRLP provides, which is important if a trip is being planned to another city or town. One difference between the two, to note at this point, is that unlike IRLP, Echo Link does not list all nodes within a geographic area at all times. The listings seen on the Echo Link status web site ([//www.echolink.org/links](http://www.echolink.org/links)) show only those stations currently available. If someone turns off their computer or drops the link, the station information goes away.

This means that careful planning must be done days, if not weeks in advance, of an excursion to a location, so that the node number, frequency used, if connected to a radio, and contact person is known. The only alternative is to connect with someone while on the road and ask for the information, which can be tricky since not all hams are aware of or interested in IRLP or Echo Link.

With IRLP, once a station is registered, it stays posted unless pulled from the roster. Although the connection status might show the node to be offline at the time, you the user will at least be reasonably sure of the node number.

With Echo Link, the person using Echo Link might switch from a computer connection to a link or repeater mode, which changes the node number. An example of this is my PC Echo Link node number, which is 213142. When I select a link mode, my number changes to 266050 while the repeater node number I have been assigned is 266090.

With IRLP ([//www.irlp.net](http://www.irlp.net)), the node number stays the same, although the only change might be the frequency used. Since IRLP does not use a PC connection such as with Echo Link, you can be sure that a ham radio is used at the

other end, making it harder for a hacker to access ham radio via a computer.

To wrap up, lets take a look at New Mexico and see what stations would be available for use. At the time I am writing this article, a look through the current Echo Link status site shows two stations currently connected which are KC5ORO in Socorro New Mexico and N03Y located north of Gallup and east of Farmington, a location generally northwest of Albuquerque. The Socorro station operates on 2 meters while the N03Y station operates on 70 cm. A look at the IRLP site shows four stations, one of which is currently down and two of the four located in Albuquerque.

This means if you were planning a trip along I-40 from the eastern portion of Arizona to Albuquerque and beyond, you would have three opportunities to make a connection to a fellow ham operator back home to coordinate an HF frequency with which to talk to your friend. You would have two other opportunities, if the trip meant heading south through Socorro and on to Truth or Consequences New Mexico, where there is another IRLP node.

During a short stay in Parker Arizona a few months ago, Bob Shipton, K8EQC, used Echo Link to connect back to the Prescott area, since IRLP is not used in the area he was at. This meant he could coordinate HF usage among his friends over here and not tie up a repeater or link between himself and a computer.

For those without a computer, either the library or a friend can help you make note of stations located along your trip path, so that you too can expand your ability to use ham radio by mixing technology in an interesting manner. ■

"Hello" Campaign to Promote Ham Radio


The first components of the ARRL's "Hello" Amateur Radio public relations campaign now are available. "This campaign will give hams the tools they need to reach out in their communities to non-hams and influence their perception of Amateur Radio," says ARRL Media and Public Relations Manager Allen Pitts, W1AGP, who conceived the campaign and is its principal Headquarters contact. The "Hello" campaign is aimed at recasting Amateur Radio in the light of the 21st century and focusing on its universal appeal. At the same time, it will mark the 100th anniversary of what Many historians consider the first voice radio broadcast in 1906 by Reginald Fessenden.

Tools include a distinctive "Hello" Web site <http://www.hello-radio.org/> and radio and TV public service announcements.

The national "Hello" campaign can bring curious people into contact with ham radio groups, but it will be up to local radio amateurs to make them truly welcome. ■

CQ DX de YARC – APRIL 2006

By Dick Diddams, W7QHE

DATE		DXCC ENTITY	CALL	QSL VIA	REPORTED BY	INFORMATION	--- MONTHLY HIGHLIGHTS --- ANDAMAN IS. – VU4 Number 8 of the 100 Most Wanted
START	END						
2006 Apr01	2006 Jul31	Congo	9Q	ON7KEC	425DXN 20060311	By ON7KEC as 9Q/ON7KEC; spare time operation; begin and end dates are estimates	 <p>It's recorded that Marco Polo was the first official visitor to the beautiful Andaman and Nicobar islands, a tropical archipelago of 572 islands. India is composed of 28 states and 7 union territories; one of the union territories is Andaman and Nicobar Islands.</p> <p>Isolated in the Indian Ocean and little known in the western world, these islands are covered by tropical rain forests and only a handful of them are inhabited. The land area is 3,184 sq. miles with the highest point being 2,395 ft. The islands are the tops of an Indian Ocean mountain range, and most of them are hilly, with heavy rain forests. Historically, farming and fishing were (<i>and are</i>) the main revenue sources here, however, increased tourism (<i>especially from scuba divers and beach lovers</i>) is providing another source of much-needed income.</p> <p>Note that travel to the islands is restricted, and only Indian nationals engaged in research may visit. Some exceptions are made for tourists with special permits. The Indian Navy uses the Andaman Islands to counter Chinese influence in the Indian Ocean and prevent them from patrolling its prized sea-lanes.</p>
2006 Apr05	2006 Apr06	Honduras	HR5		EA1APV 20060305	By EA1APV as HR5/EA1APV fm the Copan Ruins	
2006 Apr07	2006 Apr14	Honduras	HR6		EA1APV 20060305	By EA1APV as HR6/EA1APV fm Roatan Island (NA-057)	
2006 Apr07	2006 Apr16	Mauritania	5T6BT	EA4URE	EC8AUA 20060308	By EA1BT; all bands	
2006 Apr08	2006 Apr17	Puerto Rico	KP4	K3TRM	OPDX 20060306	By K3TRM as KP4/K3TRM; 80-6m; CW SSB RTTY PSK31	
2006 Apr08	2006 Apr22	St Lucia	J6		OPDX 20060227	By WB5ZAM as J6/WB5ZAM or w/ a J68 call; focus on 30 40m	
2006 Apr11	2006 Apr16	Western Sahara	S01R	EA5RM	K7LB 20060305	160-10m; SSB CW digital	
2006 Apr12	2006 Apr19	Grenada	J3	Home Call	SM0CCM 20060305	SM0CCM SM7XB1 probably as J3/homecall; all bands; SSB CW RTTY	
2006 Apr15?	2006 Apr20	Andaman & Nicobar Is.	VU4 #8/100	W3ADC	K3LP 20060131	By K3LP perhaps as VU4/K3LP; 160-10m, 30m incl.	
2006 Apr18	2006 Apr23	Andaman & Nicobar Is.	VU4 #8/100	LotW	DK5WL 20060312	By DK5WL; 160-10m, focus on 40 30 20m; all modes, focus on CW	
2006 Apr01	2006 Jul31	Congo	9Q	ON7KEC	425DXN 20060311	By ON7KEC as 9Q/ON7KEC; spare time operation	
2006 Apr22	2006 Apr25	Liechtenstein	HB0	Home Call	IZ1DSH 20060312	By IZ1DSH IK1WEG as HB0/homecall fm Gaffei; 80 40 20 17 15m; CW SSB RTTY	
2006 Apr26	2006 May04	Jersey	MJ0DOL/p		OPDX 20060312	By M0DOL fm EU-013; will activate castles	
2006 Apr30	2006 May03	Ogasawara	JD1	JM1LJS	425DXN 20060311	By JM1LJS as JD1BLK and JM1LJS/JD1 fm Chichijima Is (AS-031); 80-6m; CW SSB FM	

YARC Elmer Signup Sheet

If you are willing to help someone in a ham-radio related area, please fill out the information below and check each item you can provide help with.

Name: _____

Call Sign: _____

Contact Phone: _____

E-mail: _____

TOPIC	
1. ATV (Fast Scan TV)	___
2. Antennas and Towers	___
3. Awards	___
4. Club and ARRL Activity	___
5. Computers	___
6. Contesting	___
7. CW	___
8. DF (Direction Finding)	___
9. Digital Modes (PSK-31, RTTY, etc.)	___
10. DXing	___
11. Echolink	___
12. EME (Moonbounce)	___
13. EMI	___
14. Emergency Communications (ARES/RACES)	___
15. HF Contesting	___
16. HF Mobile	___
17. HF Station Planning and Setup	___
18. Homebrew (Construction)	___
19. IRLP	___

TOPIC	
20. License Upgrade and Renewal	___
21. Linux for Radio	___
22. Mobile Installation	___
23. Mountain Topping	___
24. Operating Practices	___
25. Public Service Events	___
26. Packet Radio	___
27. QRP	___
28. Repeater Construction and Maintenance	___
29. RFI	___
30. Satellite Communication	___
31. Slow Scan TV	___
32. Software Defined Radio	___
33. Spread Spectrum	___
34. Traffic Handling	___
35. Using Test Equipment	___
36. VE Testing and Training	___
37. VHF/UHF Contesting	___
38. VHF/UHF Station Planning and Setup	___

Weekly Breakfasts



Tues. & Thurs. Morning Breakfast – 7:00 a.m. at Michael's Restaurant
(In the Safeway Shopping Ctr., Hwy 69 Prescott Valley)
 (N 34°35'13.33" W112°19'44.6")*
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, 2nd Floor; above Bank of America)
informal – all are invited

* Location data (per WGS84) provided
 by Fred Zimmermann, N7PJJ

Area Repeaters

Frequency	PL	Location	Owner/Club	Auto-Patch	Rem. BaseOr Linked	Vo IP	Notes:
52.560-	100.0	Mt. Union	N7NGM				-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	W2YAV/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	
448.475-	100.0	Flagstaff-Elden	ARA	Yes			
448.500-	100.0	Prescott	KB6TWC	Yes	RB to White Tank 146.940		E-mail owner for instructions
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/
- www.azrepeaters.net

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