

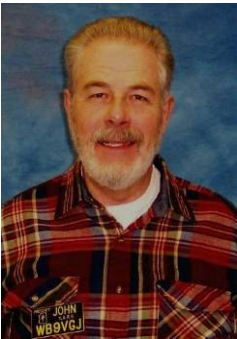


YAVAPAI SIGNAL



The Yavapai Amateur Radio Club • Prescott, Arizona • DM-34 • Volume 21 – No. 7 • July 2006

From the President's Desk



How time flies. We've held half our meetings for 2006. The second half of the year looks like it will be a busy one. The club will have a booth at Gateway Mall the evening of June 22nd. YARC members will be participating with VVARA members for Field Day June 24th and 25th. These events will be history by the time you read this.

September and October will be more challenging. We'll need members to volunteer to participate in manning our booth at the Prescott Valley World Arts Festival September 16th and 17th. Then comes the Prescott Air Show, a.k.a. Prescott Air Fair '06 on Sept. 30th. Following close on the heels of the air fair is the Prescott Rally on Oct. 6th and 7th. On Oct 21st will be the America's Walk for Diabetes on the Yavapai-Prescott Indian Reservation. So, please mark your calendars and give serious thought to participating in these activities.

These activities give us an opportunity to put amateur radio in front of the general public and are great public relations opportunities. Some of them also provide us with the chance to help local organization with their communications needs as well as to help us sharpen our communications skills. No matter how often we participate in nets and public service and emergency events, we can never have too much practice. If practice weren't necessary, professional sports teams wouldn't need training camps where the pros keep practicing the basics. I'm hopeful, with the growth of our club, that

we get more volunteers to participate in these events. They are all fun and worthwhile. They are very beneficial to us as individuals and as a club.

Our club meetings are now on the Tri-City community calendar at <http://www.prescottcity.com/calendar.php>. We are working on having them listed on the City of Prescott's calendar at <http://www.cityofprescott.net/news/events>.

As we head into the vacation season, I hope everyone has an enjoyable, safe summer.

73,
John, WB9VGI

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 1/2 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 ■

HAPPY 4TH OF JULY

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YARC Officers for 2006

President

John Broughton, WB9VGJ
wb9vgj@arrl.org

Vice President

Dick Hughes, W6CCD
w6ccd@arrl.net

Secretary

Pat Oliver, K7DUC
joliver@commspeed.net

Treasurer

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

Newsletter Editor: Joe Oliver, AC6AA

Membership Count:

1st Thurs. in May....98

Gain/Loss.....-1

1st Thurs. in June.... 96

Minutes of June 1, 2006 Board Meeting



A Board meeting was held at 1840 on June 1, 2006. Present were John, WB9VGJ; Pat, K7DUC; Dave, K6UWV; Dick, W6CCD; Richard, KE7DTR; , Ken, WA6AQK, and

Walter, KF6SPS.

Dick, W6CCD was the only member with an agenda item. He requested permission to purchase four more T-shirts to bring the total inventory back up to six. It was moved, seconded, and approved unanimously to purchase the shirts.

There being no more agenda items, the meeting was adjourned at 1845.

Respectfully submitted,
Pat, K7DUC, Secretary

Minutes of June 1, 2006 General Meeting

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

Visitors: Vi Hughes; Carol Hills, KA7LKW; Mark Hills; Michael Damiani, KD7VLK; Irene Ragen, and Lois Diddams.

New Members: Gene Bockman, AB7XW was voted in by the membership.

Meeting Minutes: A motion to approve the Board minutes of May 4, 2006 was made by Ken, WA6AQK and seconded by Bob, WB6ODR. A motion to approve the General Meeting Minutes was made by Jack, KE7FMD and seconded by Bob, WB6ODR. Both were unanimously approved by the membership.

Treasurer's Report: David, K6UWV reported a balance of \$3286.93. The report was approved after a motion by Neil, KA7JAS and seconded by Bob, WB6ODR.

Committee Reports:

- **ARES/RACES:** Mary, AB7NK stated that anyone who has not received a T-shirt from the Whiskey Row Marathon, can pick one up at Lloyd's house or at the next meeting. The reason Lloyd, WA6ZZJ was not at the meeting, was that he was at the EOC assisting with the current wild fires.
- **Newsletter:** Joe, AC6AA asked members who are contributing this month to get their articles in early.
- **IRLP:** Jack, W7JLC stated that the IRLP continues to work well.
- **Public Information:** Jim, N5RO reported that the 1:1 interview with Sandy Moss is to take place June 7,8, and 9th with Lloyd, WA6ZZJ on KQNA at 1130 on the AM dial. Jim is trying to arrange for an interview on Channel 13. A DVD is being put together containing

scenes from field days in various parts of the country. Mayors from the 3 cities have been solicited to proclaim amateur radio week from June 18th to June 25th. This is being done throughout the country. Press releases have been sent to the newspapers. The Community Calendar has been good about announcing our meetings. For field day, there will be a station in conjunction with the Boy Scouts.

- **Patches/Shirts/Badges:** David, K6UWV has club patches for \$3.00; Dick, W6CCD has club shirts for \$19, without a name, and Bob, WB6ODR has badges for \$5.75.
 - **License Class:** Bob, WB6ODR stated that a General license class will be starting in August. Jack, W7JLC will be helping with CW.
 - **VE Testing:** Mary, AB7NK said that there will be VE testing on July 15 at Embry Riddle University and another at the Masonic Lodge on September 30th.
 - **FM Simplex Contest:** Bob, W7YUL asked for a date for the contest. September 10th was agreed upon. The rules will be ready by next meeting.
 - **Booth at County Fair:** Doug, KV8TD will be getting together with the County Fair people this month and put in a formal request for a booth. Also, Doug is working on QSL cards for the area.
 - **Pre-Field Day at the Mall:** Rex, N7NGM reported that a pre-field day event will be held June 22 from 5:00 to 8:30 p.m. at the Mall. A sign-up sheet was passed around.
 - **Elmer/Technical Specialist:** Neil, KA7JAS reported that he had received a couple of calls which were taken care of.
- Old Business:**
- **Net control for 2006:** Still need a net control for July.

- **Local Events Calendar Listing:** Club information is available on www.prescottcity.com, which is a tricity information site. Information also will be available soon on www.cityofprescott.net, which is the official city of Prescott website.
- **Computer Needed:** Gene, AB7XW needs a computer and 100 feet of cable for a 3rd field day station. Several computers are available, and cable will be supplied by Bob, WB6ODR.

New Business:

- **Wildfire Information:** Jack, W3IVQ reported that he experienced little information available about local fires. Arizona wildfire yahoo newsgroup has up-to-date information.

Announcements:

- Dick, W6CCD cautioned members to save each page when accessing the ARES/RACES database on the Internet.
- The Prescott Valley Arts Group will have a show to which we are invited on September 16 & 17. A signup sheet will be sent around next month.
- The Jeep Posse is looking for operators in its communications van -- see Jimmy, KD7RMV.
- Jack, W7JLC announced a balloon flight will be launched this weekend out of Maricopa, with four payloads -- one from each of the major AZ universities.
- June 10th, Jack and KC7TIL will be operating a VHF contest from the Mingus Mountain campground.
- June 17th, Jack will be giving one, eight hour cram session for a technician license, with two, 2 hour follow-up classes.
- Air show is scheduled for September 30, 2006. ARES Van and members will be needed.
- John, W5VJH is donating an AV-14AVQ HF vertical antenna to Granite Mountain Middle School.
- Everyone is invited to the field day on June 24-25th, on Mingus Mountain.
- ARRL Kids Day is on June 17th.

A motion to adjourn the business portion of the meeting at 2000, was made by Bob, WB7RRQ and seconded by Bob, WB6ODR. The motion carried.

The 5050 drawing was held, and Frank, WA6JBV won \$24.50.

Tonight's Program will be given by Bob, WA7YUL, on the FISTS CW Club.

Respectfully submitted,
Pat, K7DUC
Secretary



YARC Treasurer's Report for June 2006

By David Passell, K6UWV Treasurer

INCOME

New Members (see applications for additional information)

Gene Bockman	AB7XW	06//07	06/01/06	c	cash	20.00
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Renewals (Update Roster)

Richard Bozeat	KE7DTR	05//07	06/01/06		cash	20.00
Hans Pieper	KB6AH	06//07	06/01/06		1460	20.00
Rex Mauldon	N7NGM	03//07	06/01/06		720	20.00
Ray Stone	K6CMU	05//07	06/01/06		4818	20.00
Robert J. Tilman	K7CJW	06//07	05/18/07		7118	20.00

ARRL

Douglas Freeman & family	KV8TD	new	06/01/06		cash	44.00
Doug Nicholson	KB6TWC	renew	06/01/06		cash	39.00
Pete B. Morrison	K6VVR	renew	06/01/06		852	39.00

Other

50/50 drawing	49 tickets		06/01/06		cash	49.00
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Total Income.....\$291.00

EXPENSES

50/50 winner	Frank, WA6JBV	06/01/06		cash	24.50
David Passell	Ice, drinks, cookies	06/01/01		872	17.41
Joe Oliver	Stamps	06/01/06		873	39.00
ARRL	Douglas Freeman	06/01/06		874	34.00
ARRL	Douglas Nicholson	06/01/06		876*	37.00
ARRL	Freeman (family)	06/01/06		877	8.00
ARRL	Pete Morrison	06/01/06		879*	24.00
Insty Print 3209645	June Newsletter	06/06/06		880	32.72

* 875, 878 voided

Total Expenses.....\$216.63

Cash Flow (Income - Expenses)\$74.37

Deposits	06/06/06	\$266.50
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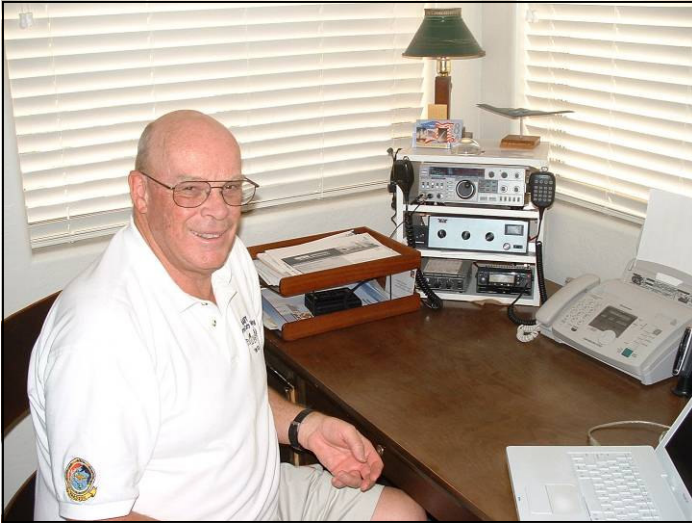
Total Deposits.....\$266.50

PREVIOUS REPORTED CHECKBOOK BALANCE.....\$3286.93

CURRENT CHECKBOOK BALANCE.....\$3361.30

This Month's Featured Ham

By Pat, K7DUC



Doug Freeman, KV8TD

July's featured ham is Doug Freeman, KV8TD.

Doug first got his license in August, 1962 while in the Navy. At that time, he got a Conditional license. His first call sign was K1YLL. While in a Navy hospital in Memphis, TN, he worked 40 and 75 meters from his bed. He used a stacked, portable (sort of) Hallicrafters receiver and transmitter, with a wire antenna stretched from one section of the hospital to the next.

In his Navy days, he was a flight radio operator, based in Argentia, Newfoundland, where he operated as /VO1. While based in Argentia, he deployed to Iceland and held TF2WJA. Later, while aboard the USS America, he ran many phone patches while on a Mediterranean cruise. He was discharged from the Navy in 1967 and earned his Advanced License in 1971.

At present, he occasionally works 75, 20 and 17 meters and VHF/UHF stations. He really enjoys IRLP.

Doug's most memorable contact was with Barry Goldwater, K3UGA, from his D.C. station.

His last CW contact was in the Navy. He now uses phone transmissions, but plans to get on CW sometime.

Doug's most memorable radio-related mail probably was receiving his DXCC certificate.

His ham related activities are ARES/RACES, Prescott Road Rally; possibly will join the Jeep Posse soon. He and his wife Doreen, K7DRV travel in a motor home, in which he

has HF mobile equipment. He enjoys operating his rig from the camp grounds.

In 1973, Doug started the Baja Amateur Radio Racing Association. He participated for 20 years in that activity providing communications for off road racing.

Currently, his equipment consists of a TS-430 and also an ICOM 706 in his motor home. He also has handhelds, and other 2 meter rigs. His HF antenna is hidden inside a flag-pole in his back yard.

Doug's professional life was spent at TRW, where he worked for 29 years. He started as a system test inspector and worked up to a senior systems engineer. He also trained employees in Redondo Beach, California, and worked for a time, in Australia and was active as VK8TD.

He feels that the club is currently progressing well, and is glad we are getting more involved in field day. He currently is heading the group that will participate in the County Fair.

Doug is very involved with our club and we are very fortunate to have him. ■

Local Emergency Management Information

submitted by Jack, W3IVQ

Internet Sites

Regional Alert Info for Yavapai County

<http://www.regionalinfo-alert.org/>

Fire Incident Info for the Southwest Region

<http://tinyurl.com/oemhy>

Yavapai County Radio Frequency References

<http://tinyurl.com/kaqv>

Fire Command Frequencies

Prescott Fire.....153.860 MHz
Yavapai County Fire.....154.160 MHz
US Forest Service.....168.175 MHz
Prescott Tactical Fire.....154.340 MHz
Arizona State Land Fire...151.400 MHz
Mutual Aid Fire.....154.280 MHz

Police FM Frequencies

Prescott Police.....154.800 MHz
Arizona State Police.....460.425 MHz
Yavapai County Sheriff.....154.725 MHz
Prescott Valley Police.....155.875 MHz



What is the Difference Between RACES & ARES?



By Lloyd, WA6ZZJ

RACES

The Radio Amateur Civil Emergency Service (RACES), which is administered by local, county and state emergency management agencies is supported by the Federal Emergency Management Agency (FEMA) now a part of the Homeland Security Agency of the United States government. RACES is a part of the Amateur Radio Service that provides radio communications for civil-preparedness purposes only, during periods of local, regional or national civil emergencies. These emergencies can include natural disasters such as fires, hurricanes, floods, earthquakes, hazardous materials incidents and acts of terrorism.

RACES is a radio communications service, conducted by volunteer licensed amateurs, designed to provide emergency communications to local or state civil-preparedness agencies. RACES operation is authorized by emergency management officials only, and is strictly limited to government communications in the event of an emergency communications situation. RACES stations may only communicate with other RACES stations. All of the authorized frequencies and emissions allocated to the Amateur Radio Service are also available to RACES on a shared basis.

Amateurs operating in a local RACES organization must be officially enrolled with the local emergency management agency having jurisdiction. Operation is conducted by amateurs using their own primary station licenses and operator privileges are dependent upon, and identical to, those for the class of license held in the Amateur Radio Service.

ARES

The Amateur Radio Emergency Service (ARES) consists of licensed amateurs who have voluntarily registered their qualifications and equipment for communications duty in the public service when disaster strikes. Every licensed amateur, regardless of membership in the ARRL or any other local or national organization, is eligible for membership. The possession of emergency-powered equipment is desirable, but is not a requirement.

There are four levels of ARES organization - national, section, district and local. National coordination is by the ARRL. In Arizona, the section level covers the entire state and is coordinated by the Section Emergency Coordinator (SEC) who is appointed by the Section Manager (SM). Our district level covers all of Yavapai County and is coordinated by the District Emergency Coordinator (DEC) who is appointed by the SM. Lloyd Halgunseth, WA6ZZJ, is the DEC for Yavapai County. The local level is coordinated by the Emergency Coordinator (EC) who is appointed by the SEC upon recommendation of the DEC. Yavapai County is divided into three local areas. Lee Cunningham, KC7CBK, is the coordinator for West Yavapai County, Mary Vince, AB7NK, is the coordinator for Southeast Yavapai County and Al Barber, AA7OV, is the coordinator for Northeast Yavapai County. They all have one or more Assistant Emergency Coordinators (AEC) working with them. Operating as ARES we are able to provide emergency communications for non-government disaster organizations such as the American Red Cross and Salvation Army.

ARES and RACES

Even though RACES and ARES are separate entities, the ARRL encourages dual membership and cooperative efforts between both groups whenever possible. ARES members who are also enrolled in and certified by RACES can operate in an emergency with greater flexibility. Using the same operators and the same frequencies, an ARES group also enrolled as RACES can 'switch hats' from ARES to RACES and RACES to ARES to meet the requirements of the situation as it develops. An example would be ARES operating during a non declared emergency under ARES, but when an emergency or disaster is officially declared by county, state or federal authority, the operation can become RACES with no change in operators or frequencies.

YAVAPAI COUNTY ARES/RACES

Yavapai County ARES/RACES was formed in early 1998 and comprises all of Yavapai County operating under the Yavapai County Office of Emergency Management. There are currently over 75 amateur operators countywide enrolled with dual membership.

ARES/RACES MAINTAINED INSTALLATIONS AND EQUIPMENT

Mountaintop repeaters:

- o K7YCA the ARES/RACES 147.260+ 103.5 pl on Mt. Union
- o K7YCA the ARES/RACES 145.290 - 127.3 pl on Mingus Mountain
- o Two Packet Radio nodes on Mt. Union (145.010, 145.710 MHz)
- o One 144.390 MHz APRS digi-peater on Mt. Union in cooperation with the Yavapai County Sheriffs Jeep Posse

• **ARES/RACES**, *Continued from Page 5*

Emergency Communications Van:

- Fully equipped CommVan owned by Yavapai County and maintained by ARES/RACES

Permanent radio equipment installations:

- Yavapai County Emergency Operating Center (EOC)
- Prescott City EOC (also an alternate Arizona State EOC)
- US forest Service Fire Center at the Prescott Airport
- Yavapai Regional Medical Center
- American Red Cross on Sandretto Dr.
- Black Canyon City Fire Station
- Crown King Fire Station
- Sedona Fire EOC

Portable radio equipment installations:

- Prescott Valley EOC
- Yavapai County Community Health Services
- Cottonwood EOC
- Verde Valley Fire Department

Dual band antennas installed on:

- Almost all Prescott and CYFD Fire Stations
- Prescott Police Station
- Jerome Fire Station.

Future repeater and equipment installations are planned for other areas.

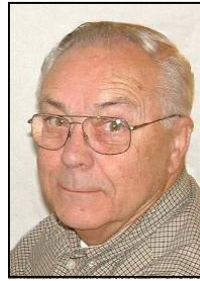
ARRL Amateur Radio Emergency Communications Courses... It is highly recommended that all amateurs whether enrolled in ARES/RACES or not take at least the Level I Amateur Radio Emergency Communications course offered by the ARRL. Enrollment for the Level I course opens the 1st Monday of the month at 12:01 a.m. eastern time.

WILDFIRES

Arizona has had its share of wildfires so far this year. Here in Yavapai County we have been fortunate in that only two wildfires have had evacuations called for. We have had several fires, but due to the quick response of the very capable fire fighting agencies in our area disasters have been avoided. We are by no means 'out of the woods' even though hopefully the monsoon season is just around the corner.

Keep your batteries charged, your vehicles full of fuel and your 'go-kits' packed.....

Lloyd, WA6ZZJ



Tech Notes

By Ray Tyrell, N6MY

This is the second part of a series of short technical articles. This month's topic is:

"RF Currents on the Outside of Coaxial Cables"

RF currents on the outside of coaxial cable shields can cause deleterious effects. Some of these are:

- Reduction of signal radiated from antenna
- Imbalance of antenna currents
- Erroneous readings from SWR meters or other measurement devices

By intelligent design using good engineering practices, we can minimize these effects and greatly improve the performance of our ham radio systems.

Discussion

Ideally, all of the RF current conducted by a coaxial cable would be confined to the inside of the cable and no RF currents would exist on the outside of the shield. Under these ideal conditions, the coax cable would be a balanced feed line. Some of the conditions under which this could occur are:

- Perfect shield with 100% coverage – no holes or gaps
- Outside of shield presents a high impedance path to RF current
- No RF current induced from nearby radiators such as an antenna

High quality coaxial cables offer excellent shield integrity, usually in the area of 95% to 100% shield. I use CQ118 (RG-8x Certified Quality) with 100% shield from The Wireman¹. Other brands such as Belden also offer excellent choices. Always consider the shield parameters when choosing a cable. You get what you pay for.

If we could take an instantaneous picture of the RF current flowing inside the coax cable between the source (transmitter)

and the load (antenna), we would discover the following:

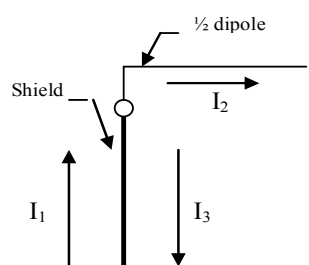
- Current flowing in the center conductor
- Current flowing in the inside surface of the shield
- These two currents would be equal and flowing in opposite directions

There is a phenomenon called “skin effect” which says that RF current flows close to the surface of a wire at a depth that varies inversely with frequency -- low frequencies penetrate deeper than high frequencies. At 10 MHz, the skin depth in copper is about one-thousandth of an inch.

Skin effect explains why RF current does not reach the outside surface of the coax shield by penetrating from inside to outside (we are still assuming a 100% shield integrity). Up to this point in our discussion then:

- The inside and outside of the shield look like two separate conductors due to skin effect
- There would be no current flowing on the outside of the coax – yet.

The picture changes when we connect a load such as an antenna to the output end of the coax. There are now three paths for the shield current to take: I_1 , the source current flowing on the inside of the shield; I_2 , the current into one side of the antenna; I_3 , a new current flowing on the outside of the shield. (For clarity, we are only looking at the shield.



Of course, there is also a source current flowing in the center conductor).

Kirchhoff's Current Law states that the sum of the currents flowing into a node (junction) is equal to the sum of the currents flowing out of a node (junction).

Accordingly,

$$I_1 = I_2 + I_3$$

You can see that the current flowing into the dipole element, I_2 , is reduced by the current flowing on the outside of the shield, I_3 (because the source current, I_1 , must be split up between I_2 and I_3). This implies that we should take steps to reduce or eliminate the current flowing in the out-

side of the coax in order to maximize the current in the antenna element.

There are several techniques commonly used to reduce the shield current such as baluns (balanced to unbalanced transformers). My favorite method uses ferrite beads strung on the coax, called a “bead balun”. When it is located at the antenna it forms an effective “current balun”; that is, it forces current feeding the antenna to be equal and balanced. You can see this by looking at the above equation. Eliminating I_3 forces I_1 and I_2 to be equal.

I have tested bead baluns at HF frequencies and found that a typical configuration can raise the impedance of the outer surface of the shield to about 800 Ohms to 1,200 Ohms. The developer of this technique, Walter Maxwell, W2DU, has published reports of his extensive tests³. Bead balun kits² can be purchased for around \$7.50 to \$15.00.

It is worth noting that the bead balun is relatively inexpensive and doesn't possess many of the disadvantages inherent in toroidal core baluns, including losses due to saturation or self-resonance.

An “old school” technique is the choke balun formed by winding several turns of coax into a coil. I have used this method with success, but it doesn't work as well as the bead balun.

Another source of RF on the coax is caused by induction of currents from the antenna due to its physical proximity to the coax. Fortunately, this can also be reduced by bead baluns. I place a bead balun right at the transmitter as well as one at the antenna. You can liberally “sprinkle” them throughout without concern about adding losses. This eliminates any induced RF that might find its way into the shack, riding on the outside of the coax. ■

¹ The Wireman: www.thewireman.com

² Palomar Engineers: www.palomar-engineers.com

³ Walter Maxwell, “Some Aspects of the Balun Problem” QST, March 1983 and Walter Maxwell, Reflections II book, WorldRadio Books

Good source of antenna/transmission line info: ARRL Antenna Book

CQ DX de YARC – JULY 2006

By Dick Diddams, W7QHE

DATE		DXCC ENTITY	CALL	QSL VIA	REPORTED BY	INFORMATION	<p align="center">- - - MONTHLY HIGHLIGHTS - - -</p> <p align="center">EAST MALAYSIA – 9M6</p>
START	END						
Now	13 Jul	Mozambique	C9	K5LBU	K5LBU 20060326	By K5LBU/C91CF W5KDJ WW5L; QRV for IARU Contest	<p>According to IARU, there are 381 operators in Malaysia of which 135 reside in East Malaysia. World-wide there are in excess of 2.7 million "hams" and over 1.3-million are from Japan and 675K from the USA. Germany is in third place with 75K.</p> <p>East Malaysia consists of the Malaysian states of Sabah and Sarawak, located on the island of Borneo to the east, across the South China Sea from West Malaysia which is located on the Malay Peninsula. While East Malaysia is less populated and relatively less developed than West Malaysia, its land mass is larger and has notably more natural resources, which are chiefly oil and gas reserves.</p> <p>During the late 18th and 19th centuries, Great Britain established colonies and protectorates in the area of current Malaysia; these were occupied by Japan from 1942 to 1945. In 1948, the British-ruled territories on the Malay Peninsula formed the Federation of Malaya, which became independent in 1957. Malaysia was formed in 1963 when the former British colonies of Singapore and the East Malaysian states of Sabah and Sarawak on the northern coast of Borneo joined the Federation. The first several years of the country's history were marred by Indonesian efforts to control Malaysia, Philippine claims to Sabah, and Singapore's secession from the Federation in 1965.</p>
Now	31 Jul	Congo 74/100	9Q	ON7KEC	425DXN 20060311	Spare time operation; begin and end dates are estimates	
Now	25 Nov	Haiti	HH	PS7EB	PY2HS 20060405	All HF bands; CW SSB + digital; multiband vertical	
Now	31 Jul	Qatar 98/100	A7200 6	EA7FTR	425DXN 20060527	By A71EM A71BX + others; Asia Games	
Now	31 Jul	Dodecanese	SV5	IK2WZD	OPDX 20060605	By IK2WZD as SV0XAN/5 fm Lipsi Is (EU-001); all bands	
Now	31 Jul	Afghanistan 67/100	T66T	OH6MKL	20060610	By OH6MKL; 160-10m; CW SSB	
6 Jul	20 Jul	Crete	SV9	IZ8CCW	IZ8CCW 20060620	By SV1EJD as SV9/SV1EJD fm EU-015; SSB & RTTY	
7 Jul	10 Jul	East Malaysia	9M6	JA Buro	JA1ELY 20060418	By JA3EGZ JA3DFM as 9M6/homecall; 80-6	
6 Jul	10 Jul	Crete	SV9	CX3AN	OPDX 20060612	By CX3AN as SV9/CX3AN; 100w; vertical	
7 Jul	10 Jul	Mariana Islands	KH0	Home Call	425DXN 20060602	By JK1FNL 7K4QOK JE1KUC as NA80/KH0 KG8RP/KH0 and N1KU/KH0; 80-6m;	
7 Jul	13 Jul	Cyprus	5B	WB2REM	OPDX 20060619	By WB2REM as 5B/WB2REM; 40-6m; CW SSB	
7 Jul	14 Jul	Tanzania	5H1DN	S57DX	425DXN 20060610	By S57CQ fm Zanzibar Is (AF-032)	
27 Jul	10 Aug	Samoa	5W0	5W0/K8A QM	K8AQM 20060107	Focus on 160-30 + 17m; CW SSB digital	

AMATEUR RADIO COUNCIL OF ARIZONA



**ARRL ARIZONA STATE CONVENTION
& HAMFEST**

*Presented by the Amateur Radio Council of Arizona
and the City of Williams*

JULY 7, 8, 9, 2006




Williams Rodeo Grounds, 800 Rodeo Road, Williams, AZ

Gates open at 5 P.M. Thursday, July 6 for set-up

Hamfest opens at dawn Friday, July 7.

Hall opens at noon Friday, July 7.

FREE ADMISSION!


Program Speakers



July: "Miniature Horses",
By Bob, WB6ODR

August: "Grounding",
By Lee, KC7CBK

Have a Question or Need a Hand?

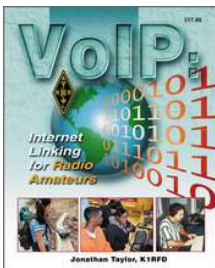


If it is on a subject related to Ham Radio, technical assistance is available from knowledgeable club members. Contact **Neil Vince, KA7JAS** at: (928) 775-2158 or ka7jas@arrl.net



Happy 4th Of July





Node Talk

By Rex Mauldin/N7NGM

Echolink Setup Tips

Thus far, I have written about interesting aspects of Echolink, such as how it can be used to reach into areas of the world as a supplement to HF operations, how interesting people both within and outside the United States can be discovered, and how Echolink compares with IRLP.

This month's column is directed towards those amateurs who are considering having their own node and would like to have guidance as to what settings to use. I have found the website ([//www.echolink.org](http://www.echolink.org)) to be helpful, but there are some areas in the site that lack a good explanation (if described at all), which is why I have written this article.

The main area that I want to bring your attention to that is important, and I have yet to find any meaningful reference to, is the section within the SYSOP SETTINGS tab, which is located under the Tools portion of the main toolbar.

The following information will only be helpful to those of you who are actively setting up a node and will therefore make sense to you. I would advise keeping this article handy for future use or to share with a friend of yours who is setting up an Echolink node, as they will thank you for it someday (at least I would hope so).

The path to the section I am going to describe is as follows: <Tools>, <Sysop settings>, <DTMF>. In the upper left hand selection labeled INTERVAL, select all the boxes under the 'min interdigit' time portion. To the right is a tab labeled ADVANCED. It is this tab that is not clearly explained within the Echolink website where I had to make numerous changes before I was able to get my node to work. Here are my settings, which you may want to use as a starting point other than the default selections (which did not work for me), and are as follows: FINE TUNING, -1, FREQ TOLERANCE, 2, S/N RATIO, 12 and TWIST, 4.

A friend of mine with a node in Kingman, had suggested fine tuning to me, but didn't think to tell me to try a negative number. The settings that are used for the 147.22 repeater are different than mine and do not use a -1 in FINE

TUNING. The last thing I changed for my settings was Fine Tuning from 0 to -1 and from then on, my node became operational.

I still do not fully understand what the Advanced settings relate to, but it really doesn't matter. You might find slightly different settings with your node too, so this area is very important and is why I am sharing it with you. Other areas that are somewhat explained in the website relate to your audio card. I found the default settings needed to be changed for my particular sound card. It is for this reason that I am not going to describe my settings, because there are far too many different models on the market, which would differ from mine, and is easy to change settings until your system is working.

The information I have provided however, is not found in the web site, nor from a search using Google or Yahoo, so I do hope it is of help to those of you considering a node of your own. In my case, I sometimes switch my node from the 52.56 repeater to 50.3 FM simplex so that I can walk around the house and monitor incoming stations or call someone and chat without tying up the repeater which is sometimes hard for me to reach with a 2 watt HT.

Six meters is not an ideal HT band and is better suited for mobile and portable operations. Since most of the hams in our area have 2 meters, I would suggest any number of simplex frequencies to use. For a while, here in the Chino Valley area, a few local hams carried on conversations on 146.55. If one of them had Echolink set up on this frequency, they would have enjoyed occasional contacts with people from other places while monitoring the frequency.

If they had used a 6 meter simplex frequency such as I use, occasional conversations due to band openings could also be enjoyed. This is the subject of an upcoming article I plan to write about, using Echolink as a sort of 'beacon' by encouraging others from eastern Texas or the Pacific Northwest to connect to my node and listen for themselves while engaged in a conversation with me via Echolink. Since with Echolink, entire countries can be blocked in addition to repeaters and/or links, you can limit who connects with you to a very select few stations. This helps cut down on constant contacts and interruptions while you seek to do other things around the house, with family friends and so forth.

Hope this helps.

Rex Mauldin

VVARA/YARC Field Day, June 24, 2006

By Bob Thompson, KC8BOB

Saturday dawned clear and cool. Preparations for Field Day were complete, and now it was a matter of waiting for 11 AM to begin twenty-four hours of DX operations. The YARC and VVARA collaborated this year to observe Field Day together on Mingus Mountain and operated two stations and a "Get On The Air" (GOTA) station throughout the day. A Kenwood TS-570S and a Kenwood TS-690S were each connected to G5RV's strung between ponderosa pines. Bob, WB6ODR, came up Friday to launch arrows with line attached over the trees. Bob exhibited a fine degree of marksmanship as the arrows sailed over the very tops of the trees. Bob's aim was too good on his first shot as the arrow found its mark.....dead-center in the tree trunk. Steve, KC7TIL, tested the first station by tuning to the 20 meter band, and immediately made contact with a station



Dynamic Duo

afternoon, the storage batteries had more than enough capacity to last through the night. Operating the power supplies off of the AC inverter avoided the need to run long, heavy gauge DC power cables with the attendant line losses, while providing 13.8 volts DC at the transceiver.

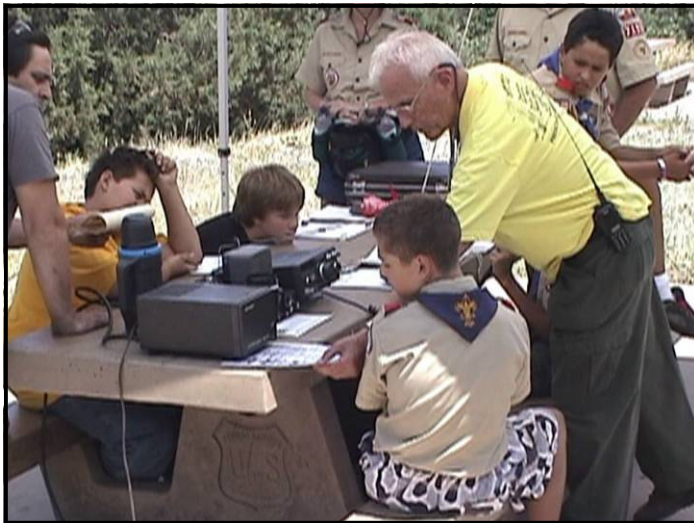
By early afternoon, the parking lot was full, and members of both clubs were busy socializing, operating, and having a good time. As 1 PM rolled around, we fired up the grill, and Bob, WB7RRQ began grilling the first of more than one hundred hamburgers and hotdogs. With all the side dishes that members provided, there was plenty of food, and everyone ate their fill.

The sun was bright, and the day was warm so the ice cold drinks were in great demand. Even the boy scouts, using their best scouting skills, discovered the food and drink. Many members sought out shade and spent several hours visiting with friends, all while others were racking up the DX contacts.



Total Solar Power

See **Field Day**, Page 11



Jim, N5RO and Scouts

near Munich, Germany! Not too bad! The second radio also found the Munich ham. Jim, N5RO brought the YARC Kenwood TS-120 and Outbacker vertical to set up as the GOTA station. Jim was control operator, and enabled scouts from the Verde Valley, and Prescott Valley to experience ham radio making contacts around the country. Gene, AB7XW provided linked laptops for computerized logging and to prevent duplicates. As 1100 approached, operators tuned their rigs, one to 20 meters, and the other to 40. The two stations coordinated band usage, alternating between 20 and 40 meters. Bill Jackson, W6HDP, set up a CW station using an Icom-718 and a Valor vertical on 20 meters. Bill, 87 years young, made a number of contacts.

The stations were powered from an inverter operating off storage batteries in Mark, KD7KJL's solar trailer. Under full sun, the solar panels provided 19 amps of charging current to the batteries. Despite clouds that rolled in late in the

A Rotator From Another Era...

By Joe, AC6AA

It was the late 1940s and I was a high school student living with my parents in San Jose, California. I had received my call sign, W6YQN, and was anxious to get on the air. My dad allowed me to have a corner of our small garage for a ham shack, but was not too keen on the idea of me putting up an antenna. We finally came to an agreement -- he would help me and supervise the construction, if I could provide the material.

As most of you know, after World War II, tons of surplus military equipment appeared on the market. A lot of War surplus equipment ended up at our local salvage yard and was being sold by the pound. With my very limited income, there wasn't much that I could afford. However, I did manage to acquire several items for my antenna at the salvage yard, i.e., aluminum tubing for Yagi elements, 1/4" pipe for a mast, and a small prop pitch motor (see Fig. 1) for a rotator.



Fig. 1 - Prop Pitch Motor



Fig. 2 - Bottom View
(Beveled Gear Rotates)

The units that Radio Amateurs commonly refer to as "prop pitch motors", actually consist of an electric motor and gear box, and were used on WWII aircraft for controlling the pitch angles of their propellers. Most of these units were built by Curtiss-Wright Aircraft Co. The small prop pitch motor purportedly sold from the factory in the mid-1950's, when they went out of production, for around \$3200.

A prop pitch motor makes a very powerful, reliable rotator when properly prepared, and many are still being used by hams around the world -- especially for large antenna arrays.

The electric motor for the small prop pitch motor is a 24V

DC motor. The gear box's 9576:1 gear ratio eliminates the need for a motor brake when used as an antenna rotator. However, rotating your antenna with such a high gear ratio can be a very slow process. Since I couldn't afford to purchase or build a 24V DC power supply, I ran the motor using 120V AC with a 1000 watt heating element in series. That solved the "slow rotation" problem, but certainly didn't help prolong the life of the motor.

We welded a pipe flange onto the beveled gear (fig. 2), screwed it onto the 1/4" pipe, supported the prop pitch motor on the ground, and supported the pipe with a bearing near the peak of our house. Mechanically, everything worked great.

Unfortunately, my dad limited the height of the completed antenna to about 24 feet, so with trees and other objects in close proximity, the antenna never was a very good performer. However, the reliable prop pitch motor continued to perform well over the years -- even though it was powered by a rather unorthodox 120V AC. ■



• Field Day (Continued from Page 10)

Several hams worked DX into the night and early morning hours. While we are still transcribing the logs and totaling our score, we do know we made nearly five hundred contacts, and Jim, N5RO helped the scouts earn their merit badges and make contacts. We had reporters from the Verde Valley Independent, and the Prescott Valley Tribune stop by, photograph, and interview participants. By Sunday morning, those remaining were DX'd out, and we began taking down the stations before it got too warm. By 10 AM, everything was packed up, picked up, and we were on our way home. No, we didn't last the full twenty-four hours, but we made a lot of contacts and a lot of people had A LOT OF FUN!

More Field Day photos can be seen at:

<http://community.webshots.com/album/551760578DsPqka>
or <http://tinyurl.com/l6v9e>

<http://community.webshots.com/album/551677932mjTeoE>
or <http://tinyurl.com/kjb2t> ■

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, N7PJJN

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	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
- www.azfreqcoord.org/listings.htm

YAVAPAI AMATEUR RADIO CLUB

P.O. BOX 11994

PRESCOTT, AZ 86304

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

Many thanks to Bob Smith, WB6ODR, our Webmaster

