

From the President's Desk



The coordination of the 146.88 repeater frequency pair is moving along and should be completed by the time you read this. It was delayed, as the 2M coordinator did

not receive the initial documentation Bob, WB6ODR, sent in. As you will see in a picture elsewhere in this newsletter, a plaque was presented to Bill, W2YAV, at the September meeting in appreciation of letting the club use his repeater and then selling it to the club. The board discussed the repeater with Bob at the September board meeting. The consensus was that we will pursue the KISS (keep it simple, stupid) paradigm with the repeater and the "If it ain't broke, don't fix it" policy. A decision was made that the repeater committee has authority to spend up to \$100 without prior board/club approval for repeater expenses. We also discussed re-establishing a repeater fund, as someday in the future, the old Motorola Micor will most likely need to be replaced. The former fund was rolled into the general fund as it was decided the club would not likely be buying its own repeater. The board will be examining this issue.

I would like to thank Richard, KE7DTR, and Ken, WA6AQK, for their efforts in procuring the plaque.

An agreement has been signed by the club and the Guyann Corporation, which owns the stations KTMG FM and KNOT AM, allowing the repeater

to remain in its location in the KTMG, formerly KNOT, transmitting site. The agreement will stay in effect as long as both parties agree to it. It requires a 30-day written notice by either party to terminate the agreement. The agreement provides that YARC will be given ample time to remove the repeater equipment in case the agreement is ever terminated. The club will pay a nominal fee, \$10 a month, for electricity usage.

Elections for president, treasurer and three at-large board members will be held at the November meeting, with nominations being taken at the October and November meetings. The current at-large board members all have agreed to run for re-election. David, K6UWV, volunteered to be a member of the nominating committee to seek out candidates for president and treasurer. We are hopeful of finding a second person to serve on the committee to assist David. With the growth the club has seen, I am hopeful it won't be too diffi-

cult to find two willing candidates for the open offices. Any club member may nominate an individual for a club office or board position and any member may self-nominate him/herself. If you have not served the club as an officer, please consider serving a term as president or treasurer.

73,
John, WB9VGJ

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Bill Kafka, W2YAV, receiving a Plaque for his contribution to our club.

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

YARC Officers for 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 – WA6AQQ
Richard Bozeat – KE7DTR
Walter Schumann – KF6SPS
Newsletter Editor: Joe Oliver, AC6AA

Bob has contacted Rick Tannelehill, the 2 Meter coordinator chairman and submitted our paperwork. Rick indicated preliminary approval, and will work on it later this week. Bob will talk to Rick later regarding the controller frequency.

Repeater replacement parts may be needed in the future, but not now. Bob suggested that money be budgeted for future repeater needs and put into a special fund. This will be discussed at the next meeting.

Bob and Doug would like to upgrade some coaxial cables. \$60-\$100 may be needed. The batteries required replacing, since they could not be recharged. Mark Hill has purchased these on an emergency basis. The other expense will be \$10 per month for electricity. Insurance at this time was not considered cost effective.

Bob felt that it would be wise to monitor the repeater to act as a welcoming group. This will be presented to the membership.

A limit on expenses was discussed, to enable the purchase of equipment as needed. \$100 will be the cap, and if more is needed, it will be discussed with the Board by e-mail.

A permanent linking policy will be discussed at a later time.

Bob was thanked for all his work

Another agenda item was elections. We need a treasurer and president. The election will be held in November. A nominating committee will be formed.

The meeting was adjourned at 18:45.

Respectfully submitted,

Pat, K7DUC, Secretary

Minutes of September 7, 2006 Board Meeting



A Board meeting was held at 1815 on September 7, 2006. Present were John, WB9VGJ; Pat, K7DUC; Dave, K6UWV; Dick, W6CCD; Richard, KE7DTR; Ken, WA6AQQ; Bob, WB6ODR, and Walter, KF6SPS.

The first item discussed was the club's Repeater. Bob, WB6ODR and Doug, KB6TWC visited the Repeater. They will constitute the Repeater Committee, with as needed assistance from Mark Hill, Chief engineer.

Currently, the equipment is working quite well, although some of it is old. Since it runs on low power, the equipment will last longer. At present, it does not have a courtesy tone, but it was felt that one would not be needed, although nice for the future. Time out timers also will be considered for a later date. A \$10 chip has been ordered to transmit our club call sign.

Membership Count:



1st Thurs. in Aug....99
Gain/Loss.....-1
1st Thurs. in Sept.... 98

Minutes of September 7, 2006 General Meeting

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

Visitors: Al Garbyrenti, Mike Ritter, AC7FH, Earl Burden, W9GRX, and Vi Hughes.

New Members: Paul Lucas, N6DMV, was voted in by the membership.

Meeting Minutes: A motion to approve the Board minutes of August 3, 2006 was made by Doug, KV8TD and seconded by Richard, KE7DTR. The minutes were approved pending a date change. A motion to approve the General Meeting Minutes was made by Pete, KD7VBG and seconded by Jim, N5RO. The General Meeting Minutes were approved.

Treasurer's Report: David, K6UWV reported a balance of \$3069.28. A motion to approve the report was made by Bob, WB6ODR and seconded by Ken, WA6AQK. The Report was approved. David will work on rectifying the \$17.00 discrepancy.

Committee Reports:

- **ARES/RACES/Public Service:** Lee, KC7CBK stated that we have quite a few events scheduled for the next two months..
- Upcoming events in September will be on the 9th, the Tour de Pee Vee in Prescott Valley, Sat. 16th, the Groom Creek Community Classic, Sun. Sept 24th, 54 mile loop Fun Ridge ride challenge, Sept. 21-24th, the Yavapai County Fair, and Sept. 30th, the Prescott Air Fair.
- Events in October will be on Oct. 6-7th, the Prescott Road Rally, and Oct. 21st, the Walk for Diabetes. More signups are needed for all these events..
- **County Fair:** Doug, KV8TD stated that more signups are needed. He will send out directions and schedules to those that have signed up.

- **Newsletter:** Joe, AC6AA, thanked those who have contributed and stated that he would welcome more articles and pictures.

- **IRLP:** Jack, W7JLC indicated that the IRLP was going well and was used in Terry's classroom.

- **One Day License Class:** Will be given by Jack, W7JLC and is scheduled for Sept. 23, at Embry Riddle.

- **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 he has one student that probably will get his General Class license.

- **Club Repeater:** Bob and Doug, KB6TWC have been up to the Repeater and found it to be in good working order. The coordination paperwork has been submitted to the 2 Meter Coordinator from ARCA. He said that it is probably fine, and he will work on it and send the paperwork back. Bob has ordered a memory chip to change the call sign, and it will be placed in the Repeater when we get the official OK. A courtesy tone cannot be installed in the equipment.

Bob asked the members to take a day of the week to monitor the Repeater and perhaps have a conversation, in order to make it more friendly.

- **FM Simplex Contest:** Will take place on Sunday, September 10th.,
- **Prescott Valley Art Festival:** John, WB9VGJ would like a few more signups for Sept. 16 and 17.

Old Business:

- **146.880 Repeater:** John, WB9VGJ presented Bill Kafka, W2YAV with a plaque to thank him for his many contributions to YARC. He has been given a lifetime membership to the club.

New Business:

- John, WB9VGJ stated that the election for 3 Board members-at-large, a president and a secretary will be held in November. Dave, K6UWV volunteered to be on the nominating committee.

- Bob, WB7RRQ reported that the latest time schedules and maps for the October Road Rally are on the Internet, and he encouraged signups.

Announcements:

- John, WB9VGJ listed the Program speakers scheduled for the following months.

- Terry, KB7TRE indicated he had 5 kids in the school ham radio club. He thanked Jack, W7JLC and Richard, KE7DTR for demonstrating IRLP to the students.

A motion to adjourn the business portion of the meeting at 1943, was made by Terry, KB7TRE and seconded by Bob, WA7YUL. The motion carried.

The 50/50 drawing was won by Jack, W7JLC, who won \$19.00.

The Program for the evening was to be given by Earl, W9GRX who gave a presentation on the Carrier USS Lexington and the Battle of the Coral Sea.

Respectfully submitted, .

Pat, K7DUC, Secretary
Secretary

Program Speakers

October:



**Lee Cunningham,
KC7CBK**
"Grounding"

November:

Jack Crabtree, W7JLC
"Ham Radio Deluxe" - a FREE
multifunction ham radio software
package (Talk covers PSK31).

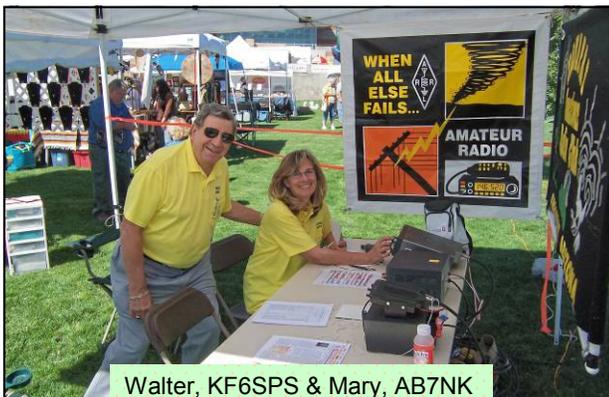
Prescott Valley World Arts Festival

By John, WB9VGJ

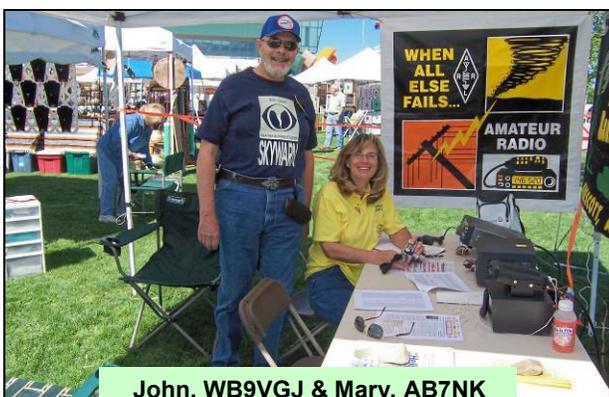
I'd like to thank all those who volunteered to man the club's tent at the Prescott Valley World Arts Festival: Walter, KF6SPS; Mary, AB7NK; Rich, N9CEX; Pat, K7DUC; Loraine, KD6FDA; Cheryl, KD6FCZ; Bob, WB7RRQ; Richard, KE7DTR; Jim, N5RO; Rose, KE7DTY; Jeff, WB7RFY; Ken, WA6AQK; Doug, KV8TD. A special thanks to Mary and Neil, KA7JAS, for loaning their HF rig and an ARES/RACES dual band transceiver and antenna, and to Terry, KB7TRE, for the loan of the club banners and Outbacker antenna.

A newspaper article reported a larger crowd Saturday than last year. However, it seemed we got fewer visitors to the tent than I recall last year. This year there were more vendors and the tents were staggered. As we need to be away from main traffic flow and close to an electrical outlet, we were in the same spot as last year, but we had tents in front of us, which we didn't have last year. On the other hand, I was told we had several folks stop by the tent Sunday and a few interested in the hobby. 16 QSOs on HF, all being with stations in Washington operating in the Salmon Run QSO party, and five on IRLP were logged during the two-day event.

This is a fun event that gives the club and hobby some public exposure and allows volunteers to talk about the hobby, browse some very nice arts and crafts items, listen to a wide variety of music and have some tasty, albeit somewhat expensive, food. ■



Walter, KF6SPS & Mary, AB7NK



John, WB9VGJ & Mary, AB7NK

YARC Treasurer's Report for September 2006



By David Passell, K6UWV, Treasurer

INCOME

New Members (see applications for additional information)

Paul Lukas	N6DMY	09//07	08/24/06	1339	20.00
** paid in advance					
			09/07/06	cash	20.00
pending new member application					

Renewals (Update Roster)

Jack Crabtree	W7JLC	06//07	09/07/06	50/50	19.00
				cash	1.00
Joe Oliver	AC6AA	09//07	09/07/06	3638	20.00
Pat Oliver	K7DUC	09//07	09/07/06	spouse	00.00
Walter Schumann	KF6SPS	10//07	09/07/06	cash	20.00

ARRL

none

Other

50/50 drawing	19 tickets		09/07/06	cash	38.00
Jack McAllister,	KE7FMD	T-shirt XXL	09/07/06	cash	23.00

Total Income.....161.00

EXPENSES

Marca Electric	Battery/Charger inv.	760	08/28/06	895	154.20
Ken Severance	Trophy for Bill Kafka		09/07/06	896	89.93
Bob Smith	Paper/printer cartridge		09/07/06	897	27.45
Richard Hughes	T-shirt lettering		09/07/06	898	6.50
Jack Crabtree	50/50 winner		09/07/06	899	19.00*
* Void: Applied to renewal above					
David Passell	Drinks/cookies		09/07/06	900	22.42
Insty Print	Newsletter 33192		09/08/06	901	32.72
Insty Print	Newsletter 31811 (May)		09/08/06	902	30.06

Total Expenses..... 382.28

Cash Flow (Income - Expenses)(221.28)

Deposit 09/11/06.....142.00

Total Deposits \$142.00

PREVIOUS REPORTED CHECKBOOK BALANCE\$3069.28

CURRENT CHECKBOOK BALANCE.....\$2848.00



By Lloyd, WA6ZZJ

ARES/RACES

This month we will continue with more random EMMCOMM tips.

- **Grab a tiger by the tail**

A Tiger Tail can extend the range of your handheld radio. Just attach a quarter wavelength piece of wire to the outer collar of the BNC or SMA connector on your HT antenna. Connectors that work good for this are a 3/8 " solder lug for BNC antenna and a 1/4 " solder lug for SMA antenna.

- **Teach and learn**

Teach others what you know about emergency communications. Friendly suggestions will work better received than forceful instructions or quotes from a rule book. Also, don't be above learning from others. Even the newest beginner can teach you something you didn't know.

- **The value of tactical call signs**

Tactical call signs such as "Shelter 5", "Net Control", and "EOC" are descriptive and give immediate information. They can be very useful during planned events and during emergencies. Do not, however, forget to include your FCC call sign at ten minutes intervals and at the end of each contact.

- **Moist wipes, the duct tape of personal hygiene**

Imagine that you've just finished setting up your antenna in a particularly filthy environment. Or that you've just helped get the generator going. Or that you've just eaten a power bar and your hands are all sticky. Now you have to operate your station. Do you really want to get gunk all over your equipment? Suppose you have to take a message? What will IT look like once you had your dirty hands all over it? Operators who have worked long missions will tell you that having moist wipes in your bag is as important as having duct tape.

- **Listen to the Net Controller's instructions**

One of the most common mistakes on regular nets is that operators assume that they know what the Net Controller is going to say. They miss the Net Controller's instructions and wind up giving inappropriate responses. This can be calamitous in an emergency situation. One way to develop the habit of paying attention is to write down the key elements of what the Net Controller is saying. You might be surprised to find that it's not always the same thing.

- **Learn the proper way to send numbers**

Read each numeral individually. For example, say two three four rather than two hundred thirty four. Enunciate each numeral. Always say zero and never say oh. Pronounce nine as niner.

- **Mobile over hand held**

A hand held transceiver is certainly a lot easier to transport, but ultimately a mobile transceiver is better for field operation. It has more power and can handle continuous usage a lot better than a hand held radio can.

- **You are your own safety officer**

When setting up or operating a station of any size, the very first thing on your mind should be, is it safe? Am I going to irradiate anyone with RF energy? Could my battery spill acid? Can it fall on anyone's foot? Have I created an electrical hazard? Could anyone trip over my feedline or get poked in the eye by my antenna? The safety of your station is your responsibility. Make sure that it cannot harm you or anyone else.

- **Try running a net**

You may be the first amateur radio operator available during an emergency. This would make you the Net Control operator, even if only for a short period of time. To help prepare yourself for this possibility you should try running a local net at least once. Yavapai County ARES/RACES will be happy to give you that opportunity, and will give you all the assistance you need.

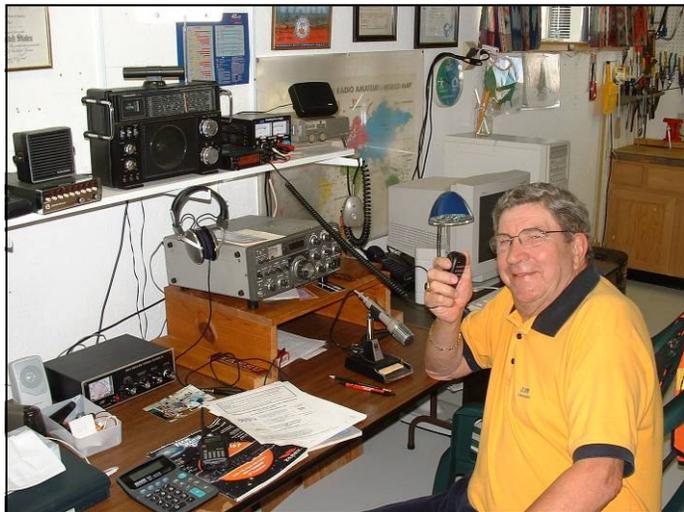
- **Accuracy is crucial**

Richard Palm, K1CE, is the editor of the ARES E-Letter. He recently wrote: "A few weeks ago, I handled a radiogram on one of the local VHF nets routed via a major HF net in the Northern Florida section. The message had a simple preamble, address, text, and signature, and yet it was garbled significantly from the original.

See ARES/RACES Page 6

This Month's Featured Ham

By Pat Oliver, K7DUC



Walter Schumann, KF6SPS

October's featured ham is Walter Schumann, KF6SPS.

Walter got his first license in September 1998, while living in Downey, California. He passed his General exam twice, once in 2002 and again in 2005. He will take the code test in October.

Walter operates on 2 meters, 6 meters, and 70 centimeters. He listens and/or participates in the RACES/ARES net, the YARC net, and the Knobby Knee net. He also enjoys using IRLP, and has worked Australia and the Eastern part of the United States. He is a member of ARES/RACES and has a certification for driving the van.

He has worked on the Road Rally, the County Fair, and the Prescott Valley Art Festival.

His most memorable contact, like most of us, was his first one. He used an HT and it was quite an experience just talking to someone using a radio.

Walter has built a 40 meter QRP kit. He has this in his shack alongside his Kenwood TS-530, MFJ49E tuner, 8100 Yaesu, and other equipment. In his auto, he has a tribander antenna and Kenwood TK6015.

Walter was born in Berlin, Germany and lived there until he was 18 years old, when he moved to Canada in 1953. He was drafted into the U.S. Army in 1958, and served in the Signal Corps (voice only) prior to becoming a U.S. citizen in 1963.

Prior to retirement, Walter worked in construction for 40 years as a carpenter and also refueled atomic energy reactors. The last 15 of the 40 years, he worked with the Los Angeles Housing Authority.

In addition to ham radio, Walter is quite active in kayaking and skiing.

Walter currently is a Board member-at-large, and like most of us, feel that the club is moving in the right direction. ■

• ARES/RACES (Continued from Page 5)

If there is one thing that we must do right (as) ARES operators, it is to send a message accurately. It is more important than timeliness, or any other feature of message-handling. Take the time to send it right. We hang our hats on that."

• Alfa Romeo Echo Sierra

Use standard International Telecommunications Union phonetics (Alfa, Bravo, Charlie, Delta, Echo, Foxtrot, Golf, Hotel, India, Juliet, Kilo, Lima, Mike, November, Oscar, Papa, Quebec, Romeo, Sierra, Tango, Uniform, Victor, Whiskey, X-Ray, Yankee, Zulu)

The above EMMCOMM tips were compiled from various ARRL Courses and other EMMCOMM Operators...

Training Meeting...

The next quarterly ARES/RACES Training Meeting is scheduled for Saturday, November 4, 2006 and will be held in Cottonwood.

Public Service...

Saturday, September 16th was a nice morning for a public service communications event in the forest. The sun was shining and temperatures were cool for the running of the Groom Creek Community Classic 10K run, 5K run and 2 mile run/walk. Net Control was set up at the Groom Creek Fire Station and operators were at the 2 mile turn, 5K turn and 10K turn points and a quad mobile was roaming on the race course.

Operators involved were: KC7CBK, N7CW, KD7VBG, KD6ZHG, KC7AGL and WA6ZZJ. Thanks to all who participated.

Future events include:

The Prescott Road Rally. Bob, WB7RRQ, is putting this event together so if you haven't already signed up, give Bob a call and offer your help.

The America's Walk for Diabetes. Contact John, WB9VGJ, if you can help on this event.

Remember, Public Service Communications is good practice for Emergency Communications and it puts the Yavapai Amateur Radio Club and Amateur Radio in the public eye.....■

CQ DX de YARC – OCTOBER 2006

By Dick Diddams, W7QHE

DATE		DXCC ENTITY	CALL	QSL VIA	REPORTED BY	INFORMATION	--- MONTHLY HIGHLIGHTS --- MAYOTTE – FH
START	END						
Now	2006 Oct05	Corsica	TK	EA4BT	OPDX 20060904	160-10m; SSB CW RTTY PSK	Mayotte is 82 on the 100 Most Wanted Country listing. The IARU does not maintain records for the number of permanent amateur radio stations on the island. Most of the stations operating on the island are French government or military personnel. DXpeditions are the main source in activating this small African country. This country is twice the size of Washington D.C. with a population of just over 200,000 with unemployment of 33%. Per capita income is \$2,600. The religion is 97% muslim. Mayotte was ceded to France along with the other islands of the Comoros group in 1843. It was the only island in the archipelago that voted in 1974 to retain its link with France and forego independence. Economic activity is based primarily on the agricultural sector, including fishing and livestock raising. Mayotte is not self-sufficient and must import a large portion of its food requirements, mainly from France. The economy and future development of the island are heavily dependent on French financial assistance, an important supplement to GDP. Mayotte's remote location is an obstacle to the development of tourism. Major products produced by Mayotte are vanilla, ylang-ylang (perfume essence), coffee and copra. The other industries are lobster and shrimp harvesting and construction
Now	2006 Oct06	Namibia	V5		F5NQL 20060504	By G3RWF as V5/G3RWF	
Now	2006 Oct09	Crete	SV9	G8VHB	VA3RJ 20060620	By G8VHB as SV9/G8VHB FM EU-015; 20-10m; dipole	
2006 Oct01	2006 Oct27	Madagascar	5R8	DJ7RJ	AA1M 20060915	By DJ7RJ FM AF-057; 160-10m; CW SSB	
2006 Oct02	2006 Oct10	Papua New Guinea	P2	G3KHZ Direct	425DXN 20060617	By G3KHZ SM6CVX G0LMX CW & SSB	
2006 Oct03	2006 Oct07	Mozambique	C91BWW	CT1BWW	425DXN 20060909	By CT1BWW FM Maputo; 160-6m; CW SSB RTTY PSK31	
2006 Oct05	2006 Oct17	Mayotte Is. 82/100	TX6A	REF Buro	F6AML 20060803	By F6AML; 80-10m; CW SSB; focus on NA + Japan	
2006 Oct06	2006 Oct10	Palau	T80W	JM1LJS	VA3RJ 20060727	By JM1LJS FM OC-009; callsign may be T88LJ	
2006 Oct07	2006 Oct14	Mozambique	C98BWW	CT1BWW	425DXN 20060909	160-6m; CW SSB RTTY SSTV PSK31	
2006 Oct11	2006 Oct14	Papua New Guinea	P2	SM6CVX Direct	425DXN 20060617	CW SSB; perhaps 6m	
2006 Oct07	2006 Oct21	Belize	V31LL	WO0Z	OPDX 20060904	By WO0Z; 80-10m; CW SSB, perhaps RTTY	
2006 Oct17	2006 Nov03	Revilla Gigedo	XF4DL	See Info	NN3W 20060831	By DL + XE team; NA QSL via N6AWD, others via DL9NDS	
2006 Oct21	2006 Nov19	French Polynesia	FO	F5JFU	F5NQL 20060905	20 15 10m, perhaps 40m; SSB CW	
2006 Oct23	2006 Nov02	Malta	9H3JC	DL5AUA	OPDX 20060911	all bands; CW SSB; 100w; wires	
2006 Oct25	2006 Nov01	Grenada	J37	See Info	AC8G 20060730	J37K, J37T, and J38AA,	
2006 Oct26	2006 Nov02	Montserrat	VP2MSR	G3USR	OPDX 20060911	By G3USR; mainly 40 20m; SSB; holiday style operation	

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“No, Grieg went to the ham auction today to get rid of a couple old radios that were cluttering up the place...Oh, I think I hear him pulling in now....”

What do frogs and batteries have in common?

In 1780 Luigi Galvani noticed that when his scalpel touched the nerves in the leg of a frog he was dissecting, the leg jumped. He hypothesized that there was electricity in the frog's muscle that was released when in contact with metal.

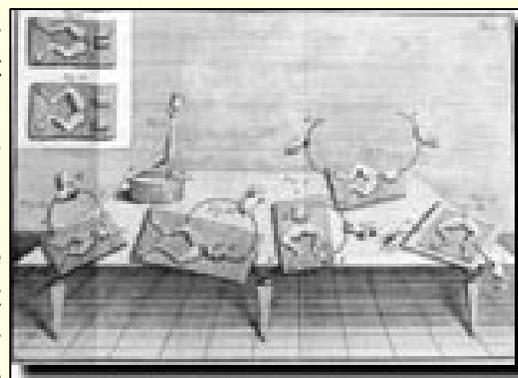
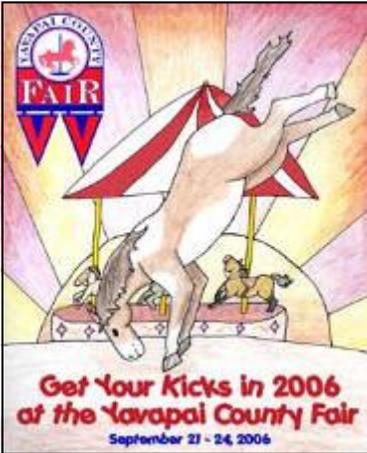


Illustration from Galvani's *De Vinibus Electricitatis in Motu Musculari, 1791*

An animal, he concluded, was essential for producing electricity. Volta disagreed. They and their supporters argued about it for years, but it was Volta who produced the first voltaic cell at the end of the 18th century. It included copper, zinc, and paper dipped in sulfuric acid, but absolutely no frogs. And it worked.

Radio Trivia from the American Museum of Radio and Electricity

Yavapai County Fair 2006



Verde Valley Amateur Radio Association (VVARA), the Yavapai Amateur Radio Association (YARC), and ARES/RACES joined forces, under the leadership of Doug Freeman, KV8TD, to staff an Amateur Radio booth at the Yavapai County Fair (September 21st through the 24th).

This was a great opportunity to introduce amateur radio to the public. Over 30 volunteers from the two clubs were able to discuss amateur radio with fairgoers and to demonstrate communications on HF, VHF, and UHF bands.



Doug, KV8TD, Pat, K7DUC, and Erika, KI7JZ discuss ham radio with interested Fair attendees.

Antennas for HF and 2 meters were set up on the roof of the Grandstand, which housed the ham radio booth on the second floor. The booth contained transceivers for the various bands, club brochures, banners, QSL cards, displays, and other giveaway items showing the many uses and fun of ham radio.

Congratulations to all who participated in this event, and especially to Doug, KV8TD, for organizing and overseeing this exhibit.

A special thanks to the antenna crew, KC6UUG, WA6AQK, KC8BOB, and WB9VGJ, and to KA7JAS,



Station consisted of transceivers for HF, 2-Meters, and 440 MHz IRLP (440 MHz antenna hidden behind flag).



G5RV strung between poles on roof of the Grandstand.



2 Meter antenna being installed on Grandstand rooftop.

WB6ODR, and KC6UUG for the loan of their equipment.

25 HF contacts on 80 through 17 meters, including an EA5 and OH8, and 22 IRLP contacts were logged over a period of three days. There were also a large number of personal contacts made with people stopping by.

For more photos of the Fair, go to <http://tinyurl.com/o4u8l>

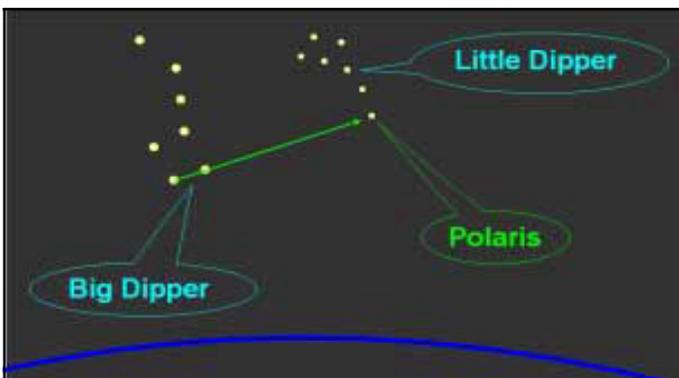
Where in the World is North?

Reprinted with permission from Mike Murphy, WA4BPJ

Hams with directional antennas want to know where true north is from their location. Rotors and beams need to be aligned and you might want to erect a directional but stationary antenna pointed at Europe or a rare DXpedition. The heading for your antenna, in degrees, is with respect to true north or the northern end of the earth's rotational axis. But which way is north? What follows are three ways to find north so you can be sure your antenna is aimed squarely at the target.

A compass needle points to magnetic north which is generally not the same direction as true north. The difference between magnetic north and true north is called magnetic declination. Its exact value varies with location and time. In the Raleigh area, a compass will point about 8 degrees to the west of true north. If you want to know more, there are several good websites you can visit. To learn more about magnetic declination try <http://www.ngdc.noaa.gov/seg/geomag/jsp/struts/calcDeclination>. There is also a declination calculator at <http://www.ngdc.noaa.gov/seg/geomag/jsp/struts/calc> that takes your zip code and returns the correct magnetic declination. When using a compass, keep it away from steel or other magnetic objects. Remember that true north will be 8 degrees east of where the compass is pointing.

Polaris, the north star, lies very close to the northern projection of the earth's rotational axis. As the earth rotates, a time lapse photo of the night sky shows the stars making concentric circular trails in the sky. In the northern hemisphere Polaris is very close to the exact center of star rotation (within a degree) so throughout the night it appears stationary in the sky. The spot on the horizon directly below Polaris is the direction of true north. For our location, Polaris will be about 35 degrees above the horizon. It's at the end of

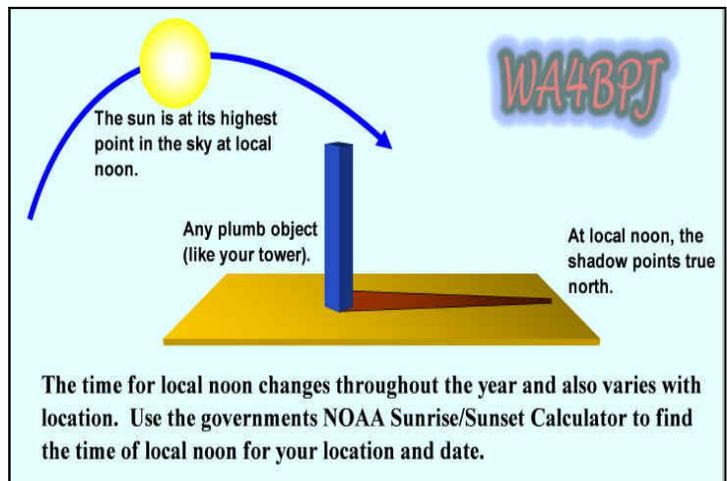


the handle of the Little Dipper. The pair of stars at the end of the big dippers cup lie on a line that points to Polaris.

The shadow cast by any plumb (perpendicular to the earth's surface) object will point to true north at local or solar noon. Solar noon is the time when the sun is at its maximum elevation in the sky and is the time half way between local sunrise and sunset. It also varies with location and time of year. Local sunrise and sunset times are usually included with the daily weather information in newspapers. It's also readily available on the web. One such site is:

<http://www.srb.noaa.gov/highlights/sunrise/sunrise.html>.

The WRAL weather page also carries sunrise and sunset times.



How accurately does a directional antenna need to be pointed? Depending on construction and height above ground, a typical 3 element HF yagi can have a 3db beam width in the range of 60 to 90 degrees. At the other end of the scale, a long boom UHF yagi with 40 elements or more might have a beam width approaching 15 degrees. Most rotors pointing accuracy is no better than about 5 degrees.

The HF yagi might be off course 20 degrees or more before you begin to hear a difference. The same error for the UHF long boom an-tenna could easily put a weak to moderate signal completely below the noise. To the question of how much time and effort to invest in achieving pointing accuracy, only you can be the judge of the point of diminishing returns for your system.

You can find a summary of finding north on my website at:

http://www.wa4bpj.com/Ham_Radio/Ham_Radio_Tech_Info/true_north.htm ■

A simple multi-band wire vertical

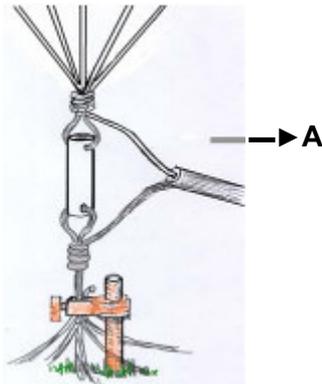
By Bruce Randall, W1ZE

If you are a back-packer, Field Day operator or just want a simple wire antenna to get on HF and even work some DX, the following simple wire vertical may be for you.

I have used the following design several times and the thing works. When I first moved to Maine in 1978 I lived at the in-laws QTH in Winthrop until the family arrived from California. While there I put up a 20-15-10 meter ground mounted vertical made out of hook-up wire purchased at the Radio Shack shop in Augusta and some insulators made out of a 4-foot length of $\frac{3}{4}$ -inch OD PVC pipe from my father in-law's scrap bin. With that antenna I was able to maintain a 20 meter schedule with WB6PQH, WA6YCG and W6JBO in California every Sunday morning plus chase DX too.

The following design can be built as a single band or as a multi-band antenna. The one described here is for a 20-17-15-12-10 meter. Each vertical element is $\frac{1}{4}$ -wave long for the desired bands.

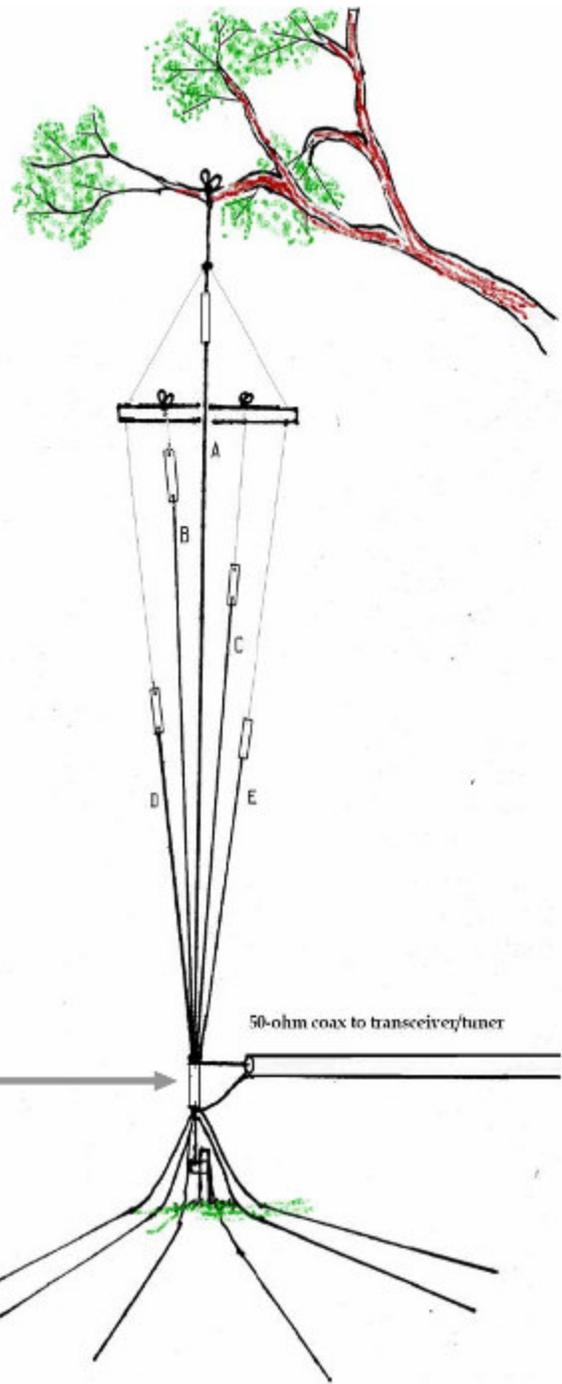
At the base of the antenna is a tent stake to tie down the array, but if your application is a little more permanent, sink a four to eight foot ground rod in lieu of the stake.



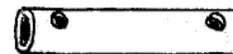
Since the radial system is placed on the ground, there is no need to cut them to resonance. Just lay down as many as you can, the more the better with lengths from 8 to 17 feet.

In my applications I used nylon string as a halyard line over a tree branch to support the top end of the antenna.

Step one is to make the insulators and spreader bar. The spreader bar is a 3-foot length of $\frac{3}{4}$ -inch PVC pipe with 5 small holes drilled through the pipe with one hole in the center. Drill outside holes 1-inch from each end. Half way between the center hole and the end holes drill two more holes.



Next step is to cut six lengths of 3-inch long PVC pipe to be used as end insulators. Drill a small hole through the PVC pipe $\frac{1}{2}$ -inch from each end of each insulator.



Step three is to cut the 5 vertical wire elements. Wire size is not critical. I have used #20 insulated hook-up wire for the Winthrop antenna but later models I used #14 and #12 stranded wire from the hardware store.

See **Vertical**, Page 11

Burrrrrr... It Was a Cold Cold War

Reprinted with Permission From
Rich – KR7W

When I was a kid growing up in Eastern Washington (near the Hanford Project) in the late 50s and early 60s... I had friends (from more affluent families) whose parents had built bomb shelters either in their basements or back yards.

Back in those Cold War days, it was reported that Senator Alexander Wiley, the chair of the Foreign Relations Committee viewed amateur radio operators as a “potential security risk” and called for restrictions on amateur radio operations for “security reasons”. Also, in 1953, Senator Joe McCarthy suggested that Hams had a “tremendous potential for passing out improper information for espionage” over the air waves. I guess that you never know who might be listening.

Ham radio operators dealt with the Cold War (McCarthy-ism) turmoil through cautionary editorials in ham magazines and self policing behaviors.

If I remember my history correctly... it was reported that the Japanese found their way to bomb Pearl Harbor by “homing in” on broadcast stations. So, during the Cold War days... in times of war, ham radio stations and most broadcast stations were required to go off the air.

Well, you wouldn't want your AM phone (before SSB became popular) transmitter to be the recipient of a guided missile which was using your antenna as a homing device, now would you?

Those Cold War days provided many kinds of “protective devices”. One of those devices was provided to the ham radio community by the Heath Company... the manufacturer of Heathkits. The **CA-1 CONELRAD** (**CON**trol of **EL**ectromagnetic **RAD**iation) **Al**arm kit was designed to shut your ham station down at the “first sign of incoming attack”. So, how'd it work?

The Heath CA-1 was connected to your AC or DC broadcast radio, with AGC (automatic gain control) circuit, that was turned on when your ham station was powered up. As long as the broadcast receiver was receiving it's tuned in station then AC power was provided to your ham transmitter. If the broadcast station went off of the air (if the event of an attack)... then the CA-1 detected the loss of AGC voltage from the broadcast receiver and the CA-1's internal 6 amp relay released and your station's transmitter shut down to avert the missile homing in on your antenna. Your shack would most certainly cool down quickly if those heaters in your AM transmitter went off.



The Heath CA-1 was manufactured from 1957 to 1960 and sold for \$13.95. ■

• Vertical (Continued from Page 10)

The following are lengths for the phone portion of each band. When cutting each length add 6 to 8-inches to allow for connections and adjustments.

A. 20M (14.20 MHz) = 16'6"

B. 17M (18.12 MHz) = 12'11"

C. 15M (21.25 MHz) = 11'0"

D. 12M (24.90 MHz) = 9'5"

E. 10M (28.40 MHz) = 8'2"

I found the antenna to be broad enough to not exceed 2:1 at the band edges on 20 and 15 meters. I experienced very low SWR across the entire 17 and 12-meter bands. SWR on 10-meters was low from 28 to 29 MHz.

This antenna can be built to cover the 40 and 30-meter bands using the same concept. You may not see a flat 1:1 SWR on 40-meters because the input impedance is much lower (15-20 ohms) than the 50-ohms coax feeding it, but you can get pretty close with a 2:1 bandwidth of 150 KHz more or less. If you build a multi-band wire vertical that includes 40-meters you do not have to install a 15-meter element because the 40-meter element acts as a $\frac{3}{4}$ -wave vertical on 15-meters. ■

73, W1ZE

Weekly Breakfasts



Tues. Morning Breakfast –

7:00 a.m. at

Back Burner Cafe

8400 E. Long Mesa Drive

& N. Robert Road

Informal – all are invited.

Wed. Morning Breakfasts:

7:00 a.m. at

Iron Horse Restaurant

(Hwy 89 in Chino Valley)

(N 34°43'56.5" W112°27'15.4")*

informal – all are invited

8:00 a.m.

Masonic Lodge

(1280 Willow Creek Road,

2nd Floor; above Bank of America)

informal – all are invited

* Location data (per WGS84) provided

by Fred Zimmermann, N7PJM

Area Repeaters

Frequency	PL	Location	Owner/Club	Auto-Patch	Rem. BaseOr Linked	Vo IP	Notes:
52.560-	100.0	Mt. Union	N7NGM			Echo	-500KHz Offset
53.040-	None	Prescott Airport	WB7BYV				-1MHz Offset
145.290-	127.3	Mingus Mtn.	ARES/RACES				
146.780-	91.5	Williams Mtn.	BWARC			IRLP	
146.880-	100.0	Prescott	YARC				
146.980-	162.2	Flagstaff	CARC				
147.000+	162.2	Mingus Mtn	MMRG				
147.040+	100.0	Prescott Heights	W2YAV				
147.140+	162.2	Flagstaff/-Mt. Elden	ARA		Linked to Mt. Ord 147.360-		
147.220+	162.2	Mingus Mtn	VVARA				
147.260+	103.5	Mt. Union	ARES/RACES				
442.150+	100.0	Mingus Mtn	W1OQ/Northlink				
442.350+	100.0	Glassford Hill	N7KPU			IRLP	
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

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- www.azrepeaters.net
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Many thanks to Bob Smith, WB6ODR, our Webmaster

