



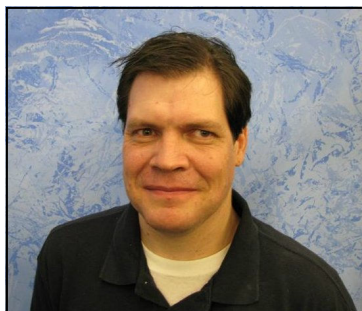
# YAVAPAI SIGNAL



The Yavapai Amateur Radio Club • Prescott, Arizona • DM-34 • Volume 26 - No. 1 • January 2011



## From the President's Desk...



Hello Everyone!

It's that time of year again! It's a time to look fondly back on many of the past year's events and reflect upon what a tremendous year it was. 2010 was a great year for YARC and as we prepare to celebrate our 20<sup>th</sup>

Anniversary we can look back with a measure of pride at the energy and dedication of our membership. Whether it's fox hunts or Field Day, special events or licensing, ARES/RACES, elmering, station construction or the weekly YARC net, we prove again and again that there's a lot to choose from when it comes to the Yavapai Amateur Radio Club.

But why stop there? Let's not rest on our laurels too long. It's time to remind ourselves of the bigger picture and focus our efforts as we continue to grow in Amateur Radio. My hope, this year, is to get more people involved, to get our community involved, and to continue to advance the club so that it is a year of growth and new opportunity.

Specifically, let's remind and rededicate ourselves to those things that make a Special Service club special:

Continuing education - Training and supporting local Amateur Radio efforts in licensing, upgrading and continuing education to ensure that every member is getting the most out of their license privilege and being supported in their technical advancement.

Public relations and service - improving the visibility of Amateur Radio and promoting it as a positive force within the community.

Operating activities in which hands-on radio experience is offered and conducted in areas of particular interest to the club.

...and very importantly...

A healthy dash of fun and social events so that we can continue to advance the tremendous Esprit de Corps that is the heart and soul of Amateur radio.

To that end I'll leave you with a brief reminder of our upcoming Anniversary party on January 15<sup>th</sup> 2011, celebrating 20 years of the Yavapai Amateur Radio Club, to be held at the Hotel St. Michael. Socializing begins at noon and lunch will be served at 1pm. Reservations are required. Reservation forms and details are available online at: [http://w7yrc.org/yarc\\_party.htm](http://w7yrc.org/yarc_party.htm)

It's going to be a great year!

Respectfully,

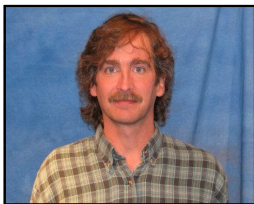
Creighton

AD7YR

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## Minutes of December 2, 2010 Board Meeting



Meeting was called to order at 1815 hrs. by the President, K6VVR. Also in attendance:

AB7NK, KB7TRE, KF6SPS, KA7JAS, WB7UZV, WA6ZZJ, AD7RL and AD7WW.

Discussed reminding members to sign the sign-in sheet.

Reserved parking for special needs appears to be working.

Meeting agenda discussed.

KB7TRE suggested supporting a special event station at Gunsite for the M1911 birthday.

GMMS may not be available for meetings after this spring.

Extraordinary efforts of K7POF to replace the MMRG repeater in time for the NRA birthday special event noted.

Meeting adjourned at 1831 hrs.

Respectfully submitted,  
George Imburgia, AD7RL  
YARC Secretary

## Minutes of December 2, 2010 General Meeting

Meeting was called to order at 1900 hrs. Following the Pledge of Allegiance; extended introductions were made.

**Attendance:** 64 of whom 50 signed in.

**New member** Chauvin Emmons welcomed unanimously.

K6VVR thanked K7POF for remarkable efforts to ensure the 147.000 MMRG repeater was replaced in time to run the NRA Birthday special event station.

KB7TRE spoke briefly and provided form for school donation tax credits.

YARC 20<sup>th</sup> Birthday Party will be held at the St. Michaels Hotel, Jan 15, 2011. Reservations are being accepted by AB7NK at \$25 per person. Deadline to submit reservations is Jan 8, 2011.

**AZWAC:** Certificates are available for anyone who works all 15 counties in AZ. AB7NK reports 5 certificates were issued as a result of the Arizona QSO Party.

**Stickers and Patches** available at the Treasurer's table.

**Treasurer:** report offered by AB7NK. Report accepted as read with no dissenting.

**Minutes** of the August meeting were approved as published, no dissenting.

AD7RL reports the club roster is available at <http://netsecs.us/yarc>

Password available by email: [AD7RL@netsecs.us](mailto:AD7RL@netsecs.us)

### COMMITTEE REPORTS:

**ARES/RACES:** WA6ZZJ reports:

### YARC SPECIAL EVENT COMMUNICATIONS 2011.....

There will be two events asking for our YARC special event communications starting the end of April 2011.

The Whiskey Off Road Mountain Bike event which looks to be the first event of the year is going to be a three day event running Friday April 29<sup>th</sup>, Saturday April 30<sup>th</sup> and Sunday May 1<sup>st</sup>.

The number of operators that will be needed is:

Friday - it would be nice to have at least 18 operators.

Saturday - we will need 24 operators to comfortably staff the ride.

Sunday - we will once again need 24 operators to comfortably staff the ride.

With the number of operators required over the three days it means that YARC members are going to have to really pull together so this event can be adequately covered. Members who have not participated in our events can sign on and if at all possible they will be placed with veteran special event communicators to assist and see how the events are covered.

Then with only one free weekend between events there will be the 33<sup>rd</sup> annual running of the Whiskey Row Marathon on Saturday, May 14, 2011. This event usually has about 18 operators covering the necessary positions.

Get out your 2011 calendars and mark these dates. We will start compiling a list of prospective operators right after the first of the year. Both of these events have a number of charities that benefit. More information will be forthcoming on these events as the time draws closer.

Thanks for your help.

Lloyd Halgunseth  
Yavapai Amateur Radio Club  
[wa6zzj@cablone.net](mailto:wa6zzj@cablone.net)  
928-717-2706

**Badges:** WB6ODR is accepting orders at \$ 6.75 for the custom engraved YARC badges. [lrsmith@cablone.net](mailto:lrsmith@cablone.net)

**Repeater:** WB6ODR reports the repeater is working well.

**Refreshments:** K6UWV reports coffee, soft drinks and lots of cookies are available.

**Elmer:** WB7UZV, KA7JAS and AD7WW introduced.

**Slow Code** 146.88- 100 Hz PL, Sunday about 7:30pm, WB7UZV thanked YARC for the use of the repeater. Training materials are available from Jim.

**Net control operators** are needed for the weekly YARC net on Wednesday evenings at 7:00 pm on the club repeater, 146.88- (100Hz pl). [http://7yrc.org/weekly\\_net.htm](http://7yrc.org/weekly_net.htm)

**Nets:** KI6AHH reports that the Young & New Hams net is doing well on Sunday nights on the 147.220 repeater. Focus has been on subject matter of interest to new hams. The net will be operational through the holidays.

**Fox-Hunt:** Every Sunday after the monthly meeting; start time 1:00 pm; Arizona Credit Union parking lot adjacent to Walgreen's at Willow Creek and Gail Gardner intersection. Check in on the 146.880 repeater. WB7RFY and WB9VGJ won last month, and will be hiding the transmitter.

AE7AT was presented with a certificate of appreciation for being a Raffle Ticket Seller Par Excellence, and making the YARC club a better club.

AE7AT was presented with another certificate of appreciation by AB7KE for making the job of the VEs so satisfying, by being the youngest new ham tested, and the youngest extra-class licensee.

#### **OLD BUSINESS**

WB9VGJ thanked everyone who participated in the NRA special event station. A total of 321 contacts were made.

#### **NEW BUSINESS**

A special event station will be up to celebrate the 100<sup>th</sup> anniversary of the Colt M1911 .45 pistol on Mar 29. A motion was made to make this a YARC project; accepted unanimously.

Adjourned 2058hrs.

50/50 of \$75 was donated to the club by the KC7BPI.

Respectfully submitted,

George Imburgia, AD7RL

YARC Secretary

## **Welcome to the Yavapai Amateur Radio Club**

The Yavapai Amateur Radio Club (YARC) is an ARRL affiliated Special Service Club. The club participates in many activities in the tri-city area by providing communications for local events, emergency communications, and promotion of the hobby throughout the community.

Membership in the YARC is open to any interested amateur or non-amateur alike. Dues are \$20.00/year (Full-time students \$15). The YARC meets at 7:00 p.m. local time on the first Thursday of every month in the Technology Room 404, at the Granite Mountain Middle School, 1800 Williamson Valley Road in Prescott. It is about ½ mile north of Iron Springs road, and all amateurs and non-amateurs as well are invited. Programs of interest are included as part of the meeting.

The weekly Net is held every Wednesday at 7:00 p.m. local time on 146.880- repeater. All amateurs are invited to participate, and visitors are always welcome.

The Yavapai County ARES/RACES Net is held on Monday nights approximately at 7:00 p.m. local time on the 145.290- repeater on Mingus Mountain. A PL of 127.3 is required.

### **Club Repeater**

The YARC 146.880- repeater is located on the hill above Willow Creek road and requires a PL of 100.0 Hz. Our deepest gratitude to Bill Kafka, W2YAV for allowing us to acquire the original club repeater. ■

### **YARC Officers for 2011**

<b>President</b> Creighton Grotbeck, AD7YR <a href="mailto:cgrotbeck@gmail.com">cgrotbeck@gmail.com</a>	<b>Vice President</b> Jim Ball, WB7UZV
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<b>Secretary</b> George Imburgia <a href="mailto:ad7rl@netsecs.us">ad7rl@netsecs.us</a>	<b>Treasurer</b> Tom Griswold <a href="mailto:mrgriz@cableone.net">mrgriz@cableone.net</a>
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### **Board of Directors (includes Club Officers)**

Pete Morrison -- K6VVR  
Will Taylor -- AD7WW  
Ellis Rackoff -- KE7NAP  
Neil Vince -- KA7JAS

**Newsletter Editor:** Joe Oliver, AC6AA  
[joliver@cableone.net](mailto:joliver@cableone.net)

## Yavapai Amateur Radio Club

### December 2010 Treasurer's Summary

By Mary Vince, AB7NK

#### Income

11/14	KD7RMV	Jimmy Grimm	3203	R	20.00
11/14	N7CW	Bud Semon	4219	R	20.00
11/14	WB7RRQ	Bob Rosevear comp-2010 party		R	20.00
11/14	KC7MTY	Judy Rosevear	---	F	----
11/14	KB2WPN	John McArthur	3387	R	20.00
11/14	KI7JZ	Erika Schitneck	3203	R	40.00
11/22	KE7IXS	Bill Burkett	2597	R/ARRL/R	67.00
11/22	KE7VWN	Debbie Burkett	---	F	----
11/22	KD7KJL	Mark Parthe	1516	R	20.00
11/22	KJ5CE	Tomi Parthe	---	F	----
11/22	WB7TPH	Don Bauer	3635	R	20.00
11/29	AC7FH	Mike Ritter	2905	R	20.00
12/1	N6KZ	Jim Zimmerman	1116	R	20.00
12/2	KA7LKW	Carol Hills	104	R	20.00
12/2	W7HAM	Ralph Genderon	cash	patches	6.00
12/2	No Call	Chauvin Emmons	cash	N	20.00
12/2	K6ALV	Bud Sumner	cash	R	20.00
12/2		50/50			150.00
12/2	W6KNX	Glen Dechert	cash	R	20.00
12/2	KD7DGT	Mike Paget	1989	R	20.00
12/2	W2JKG	Tom Gregory	1271	R	20.00
12/2	KD6OBC	Ray Shaver	2142	R	20.00
12/3	AD7ZK	John Bednarik	1101	R	20.00
12/3		NRA Sp Event Change			53.73
12/4	KB6CH	Jack Hanny	cash	R	20.00
12/2	No Call	Chauvin Emmons	cash	ARRL/N	39.00
12/7	K7NGK	Don Broadston	289	R	20.00
* 12/11		(bk dep receipt was 715.73 actual receipts 695.73 Additional \$20.00 in repeater fund)			<u>20.00</u>
Totals					\$ 715.73

#### Expenses

11/22		ARRL	1023	R/ KE7IXS/KE7VWN	45.00
12/2	K6UWV	David Passell	1024	refrshmnts	17.31
12/2		ARCA	1025	Renewal	35.00
12/2	KA7JAS	Neil Vince	1026	refreshments	42.12
12/2		Allegra	1027	newsletters	31.01
12/2	KC7BPI	Harold Berthold	cash	50/50 3 <sup>rd</sup> time	<75.00>
12/5		ARRL	1028	N/Chauvin Emmons	24.00
12/11	AB7NK	Mary Vince	1029	2011 Party/supplies/ink/stamps	<u>221.37</u>
Total					\$ 415.81

Beginning Balance	\$ 3,916.00	November ending repeater balance	\$1,151.92
December Income	715.73	December repeater fund	<u>60.00</u>
Expenses	<u>&lt;415.37&gt;</u>		
General Fund Balance	\$ 4,216.36	December repeater fund balance	\$1,211.92
Increase	\$ 299.92		

## Special Test Session

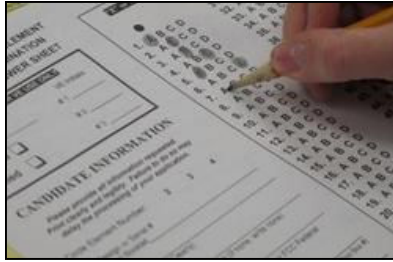
By Mary, AB7NK



Testing for all license classes will be held Friday evening, January 14, 2011 at 6:30 p.m. at the home of Neil – KA7JAS and Mary – AB7NK. If you are planning on testing, please email me, [ab7nk@arrl.net](mailto:ab7nk@arrl.net) to pre-register. Seating is limited and applications will be taken on a first register, first served basis. Questions? e-mail Mary, AB7NK at [ab7nk@arrl.net](mailto:ab7nk@arrl.net)

## New General Class Question Pool

The current General Class question pool will expire June 30, 2011. If you are Considering upgrading to General, now may be the time to do so. Many club members have General Class books that will soon expire. If anyone needs one, please bring it up at the next meeting or email me, [ab7nk@arrl.net](mailto:ab7nk@arrl.net), and we'll get you one.



The NEW question pool will become effective July 1, 2011 and remain in effect until June 30, 2015. The new General pool contains 457 questions, from which 35 are selected for an Element 3 examination.

The current Amateur Extra class pool that was effective July 1, 2008 is valid until June 30, 2012. ■



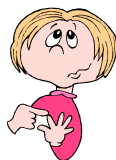
Jack Ragen, W3IVQ's wife Irene died in November after a series of strokes.

Jack was YARC's Vice-President in 2008, until October when he and Irene relocated to Santa Cruz, California.

Jack's address is: 3400 Paul Sweet Rd., Unit A312,  
Santa Cruz, CA 95065  
e-mail address: [W3IVQ@Juno.Com](mailto:W3IVQ@Juno.Com)

### Membership Count:

1st Thurs. in November.....182  
Gain/Loss.....-1  
1st Thurs. in December.....181



## YARC Party Deadline Approaching

By Mary, AB7NK

Reservation forms and payment must be received no later than Jan 7, 2011 for the YARC 20<sup>th</sup> Birthday Party on Saturday, January 15, 2011. Payments will be accepted at the club meeting on January 6, 2011.

Sorry, no walk-ins will be allowed, NO EXCEPTIONS!

## Third Time Is a Charm

The 50/50 winner at the December 4<sup>th</sup> meeting was KC7BPI, Harold Berthold, (and his lucky rabbit's foot). After winning the 2<sup>nd</sup> time, Harold commented, if he should win again, he'd donate the money back to the club. When his number was announced (3<sup>rd</sup> time in 1 year) at the December meeting, true to his word, his share, \$75.00, was donated back to the club. Thank you Harold! ■

## Need a Hand?

If you need assistance, we want to help you. If you are just starting out in ham radio, or simply have run across something that you could use a hand with... technical assistance or answers to questions about the Yavapai Amateur Radio Club, are available from knowledgeable club members.

**Don't Hesitate to Ask for Help!!**

**CALL:**

**Neil Vince**, KA7JAS at: (928) 775-2158

**Jim Ball**, WB7UZV (928) 445-2997

**Will Taylor**, AD7WW (928) 445-1717



**By Lloyd, WA6ZZJ**

## **SPECIAL EVENT COMMUNICATIONS.....**

With the YARC Special Event Communications season beginning in April I am planning a short series of articles on the subject.

The FCC has given the Amateur radio service a fundamental purpose, including "Recognition and enhancement of the value of the amateur service to the public as a voluntary non-commercial communication service, particularly with respect to providing emergency communications\*." (97.1(a), FCC Rules & Regulations.)

\* This can also include Special Event Communications.

### **Special Events...**

‘Special event’ is a term coined by radio amateurs that refers to activities where the public is in attendance as observers and/or participants. They include sporting events such as marathons, bike rides/races and walkathons. These are all affairs of a preplanned, non-emergency nature.

Special events are normally held for the enjoyment of the public and often draw large crowds. They provide golden public relations opportunities for radio amateurs who provide support communications on a complimentary basis. They make our activities visible to non-amateurs. They sharpen our operating skills, and help justify our existence. And besides, operating special events is just plain fun!

Special events don’t just happen. They are well planned in advance. Event organizers look to Amateur Radio to provide a well coordinated and planned communications system to make their event a success.

Special events are preplanned and non-emergency in nature. The important word here is preplanned. As the event is preplanned, so must be our communications effort. Just ‘showing up’ at a special event with a group of radio amateurs and equipment just won’t cut it. “Planning on the fly” is not the way to give a good impression of Amateur Radio.

It is up to you as an Amateur Radio operator to be a part of the effort to make the event a success.

Next, treat every special event as emergency communications training. Have the equipment with you that you might use in an emergency. Bring any equipment recommended by the event communications coordinator. He/she usually knows what equipment is going to be needed for an event. Don’t be afraid to let the event communications coordinator know what equipment you are lacking. Again, he/she can usually plan for any equipment shortfalls.

### **After The Event...**

At the end of the event, there may be some loose ends to clear up. This is the best time to give suggestions and constructive criticism to the event communications coordinator. You may also have suggestions relative to the event itself, which can be passed on to the event organizers. If possible, write all suggestions down for inclusion in an event ‘after action report’.

No two special event operations are going to be the same. Amateur Radio is a hobby activity, but if we exercise professionalism we show the public that Amateur Radio is something special, which is what it’s all about.

## **APRIL WHISKEY OFF ROAD MOUNTAIN BIKE EVENT SCHEDULE.....**

Friday, April 29, 2011...

There will be a 15 Proof (miles) fun ride in the afternoon (starting time to be determined) on the same route as last year. 18 operators will be needed.

Later in the afternoon will be a ‘Fat Tire Criterium’ race which is a race over a closed circuit (typically about a mile through city streets). This leads to tight groups with frequent turns, which makes the possibility for crashes more frequent than traditional road races. This event will be run on city streets near downtown Prescott. 8 operators will be needed.

Saturday, April 30, 2011...

Two races beginning in the morning. A 50 Proof starting first followed by the 25 Proof both on the same routes as year. They are expecting well over 1000 riders for these events. 24 operators will be needed.

**See Special Event Communications, Page 7**

## • Special Event Communications (continued from Page 6)

Sunday, May 1, 2011...

This is the day for the Professional Racers. There will be two groups (1 male and 1 female) and they are expecting 100 riders. This will be run on the 50 Proof route with the men starting first and the females ½ hour later. 24 operators will be needed.

Sign up sheets will be available at the January, February, March and April YARC meetings. Check your calendars and become involved in YARC Special Event Communications.

Continued next month..... ■

### **Wednesday Evening Net**

Join us on Wednesday evenings at 1900 MST on the 146.880 – pl 100Hz repeater for our weekly net.

#### **Volunteers**



#### **Needed**

Net control(s) are needed for the month of January.

You may sign up for a week or the entire month.

Contact Neil, KA7JAS at [ka7jas@arrl.net](mailto:ka7jas@arrl.net) or call: (928) 775-2158 to volunteer.

### **Need Cards Checked for ARRL Operating Awards?**

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

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

Jim's QTH is at: 778 Grapevine Lane,

### **Upcoming Events**

- **January 15, 2011** - YARC Birthday Party at Hotel St. Michael.
- **April 29, 30 & May 1, 2011** -Whiskey Off Road Mountain Bike event.
- **May 14, 2011** - Whiskey Row Marathon.

### **From the Editor...**

It doesn't seem that long ago that I took over as Editor and Publisher of the Yavapai Signal. The year was 2005. With great apprehension I volunteered to assume responsibility for our club's newsletter. There was certainly concern about gathering enough material to fill 8 pages each month. Never having published a newsletter, also added to my concern.

Sixty seven issues later, I can look back and see that most of my apprehension was unfounded. YARC members came to my assistance and provided articles, pictures, and other material, such that after a short time, the newsletter was expanded to 12 pages instead of the original 8. The number of pages has remained at twelve, primarily because when printed, that is the maximum number that can be mailed with a first class (44 cent) stamp.

Since good newsletters are found in good radio clubs, it is important for a successful club to have an interesting newsletter written and produced on time – one which contains a variety of important club news, recognizes members who stepped up and made things happen, and is an informal history of the organization. These are some of the features we have tried to include in the Yavapai Signal.

Many thanks to all newsletter contributors -- especially those of you supplying articles on a regular basis. Your help and ideas are greatly appreciated. I hope that all members will continue to provide information of interest to our group via the club newsletter.

With so many talented YARC members, perhaps it is time for someone else to try his/her hand at publishing the Yavapai Signal. If anyone is interested, I would be pleased to "pass the baton" and give another person the opportunity to express his or her creative talents as Editor of the Yavapai Signal.

Looking forward to another successful year for the Yavapai Amateur Radio Club!

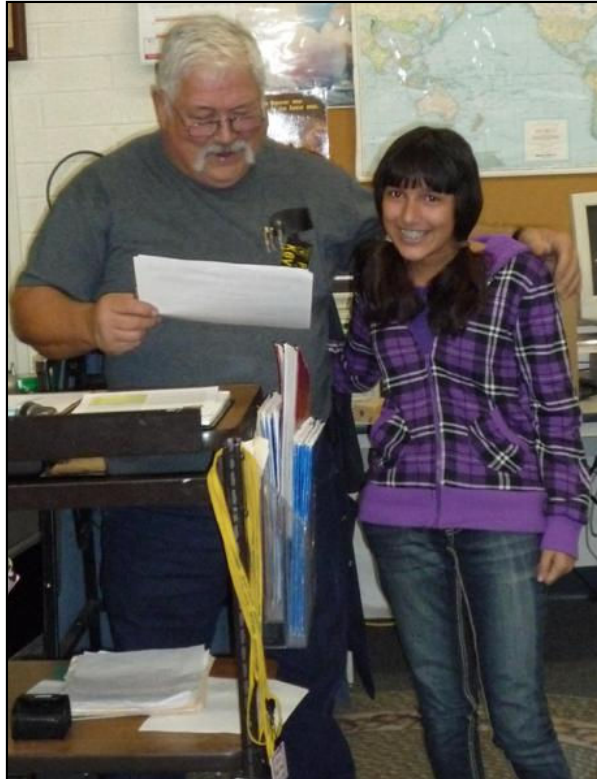
73 and have a wonderful New Year!

Joe Oliver, AC6AA

# Caitlyn and Ken Line Honored at December Meeting

By Mary Vince, AB7NK

Caitlyn Line, AE7AT and her Grandpa, Ken Line, W7MHW were honored at the final 2010 club meeting with a cake (Figure 1) and many well wishes. Ken has been busy moving things to their new location in Idaho (Ken did take out time to get a couple antenna's up and working). What a guy!!!



Their new QTH is ¼ mile from the Snake River and 35 miles west of Boise, ID.

Pete Morrison, K6VVR, presented Caitlyn with an award from the club for being 'a raffle ticket seller par excellence,' as well as an award from the Volunteer Examiners 'for making their job so satisfying as well as youngest Extra Class licensee in YARC history.'

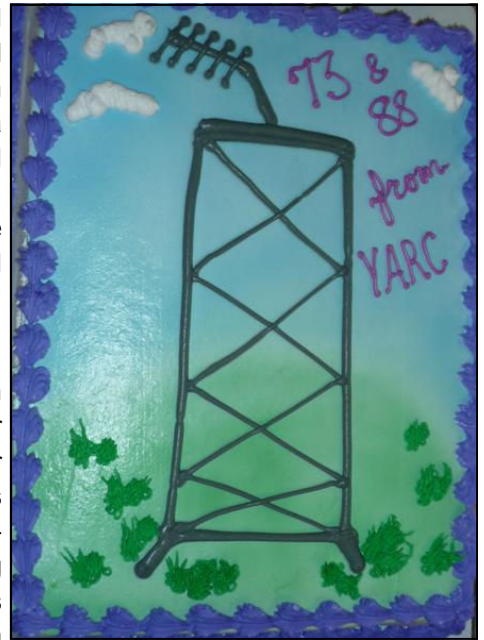


Figure 1

It has been a great joy to have Caitlyn as a part of the ham radio family. When on the radio, she handles the pileups in a very professional way. Everyone wants to work her! Words can't express how extremely proud this young lady has made me.

Pete Morrison, k6VVR presents an Award to Caitlyn Line, AE7AT

Ham radio brought us together, ham radio will keep us together. 73 and 88 my dear friends.

Stay safe and God Bless!

## January Program



YARC will be hosting a guest speaker who will review CPR and basic lifesaving techniques.

## Arizona Worked All Counties

Have you checked your logs lately? If you've worked all fifteen Arizona counties, email [az-wac@w7yrc.org](mailto:az-wac@w7yrc.org) for an application and rules.





# Essential<sub>2</sub> light

Reprinted from the "PCARA Update", November 2008 issue, courtesy of Malcolm Pritchard, NM9J

September 2008 marked the third anniversary of the American Chemistry Council's "Essential<sub>2</sub>" campaign. Over the past three years, *Essential2* has sought to explain how modern life is improved by chemistry. Whether it's in medicines, electronics or water treatment, chemistry is often involved in making life better. The American Chemistry Council released two new television advertisements as part of its essential2 program. The new ads focus on chemistry's contributions to things that protect and connect us, such as seat belts and cell phones, and also highlight the strengths of plastics in everything from a firefighter's protective outerwear to the space shuttle's external tank.

A recent print advertisement in the "essential2" campaign features a small dog covered in soap suds with the tag line "essential<sub>2</sub> cleaner". The copy continues: "It helps keep our four-legged friends odor-free, flea-free, germ free and fancy-free. It is American Chemistry." No doubt this refers to dog shampoos containing -- *inter alia* -- pyrethrins that provide flea and tick control.



NY Times Magazine,  
Sept 28, 2008

There was another anniversary to celebrate in September. Altuglas International, part of Arkema, marked the 75th anniversary of Plexiglas® acrylics with a gala event at the National Constitution Center in Philadelphia, PA, on September 19, 2008.

The story of acrylic plastics begins in the early 20<sup>th</sup> century with Otto Röhm who was investigating polymerization products of acrylic acid at Röhm & Haas in Darmstadt, Germany. Röhm found a method to cast

methyl methacrylate between two plates of glass and to polymerize it inside this cell. Röhm patented the process in 1933 and trademarked the crystal-clear, break-resistant plastic as Plexiglas® the following year. The early manufacturing technique could only produce small plates, and these were used to manufacture watch glasses and lenses for protective goggles. Sheet sizes increased, and by 1936, forming and machining of these larger sheets was producing curved windshields for buses and automobiles, which were more shatter-proof than glass.

In the 1930's, acrylic plastics were also being developed in the UK and USA. In the USA, DuPont named their acrylic "Lucite", and began selling it to the medical industry as a break-proof replacement for glass in medical instruments. In the UK, Imperial Chemical Industries (ICI) had begun working on the polymerization of ethylene, but gained more immediate commercial success with an acrylic sheet trademarked as Perspex. It was first used in windscreens for cars and aircraft.



Mercedes omnibus with curved  
Plexiglas roof lights (1937).

## Light and strong

Acrylic sheet played an important role in World War II as bullet-resistant glazing for aircraft. It was found to be light and very strong and could easily be formed to fit the structural designs of airplanes. Tens of thousands of aircraft were produced with Plexiglas noses and canopies during the war, including the B-17 Flying



Royal Air Force Avro Lancaster  
bomber with nose cupola and  
other glazing made from Perspex.

Fortress, and the Avro Lancaster. The acrylic material in these old planes is still clear and free from yellowing, and the material is used in aircraft windows to this day.

After the war, use of acrylic plastic sheet expanded to include safety glazing, electrical and chemical applications, skylights and windscreens, fish tanks, light fittings, protective screens around machine tools, car number plates, laser-disks, and coffee tables. Colored acrylic finds widespread application in outdoor illuminated signs.

In amateur radio, Plexiglas has some special uses of its own. If you ever want to protect an elegant, lettered front panel, you can cut a thin sheet of Plexiglas to size, drill holes for the controls then place it over the metal panel. If the glass in a meter should become cracked, you can cut a sheet of Plexiglas to fit.

Plexiglas has good electrical and RF characteristics. Its dielectric strength is 15-40 kV/mm, so a thin sheet can make a good insulator. Plexiglas is relatively easy to fabricate -- it can be drilled and sawed, or you can scribe it with a sharp knife prior to snapping it. If you need a dipole center insulator, an end-insulator or spacers for open wire feeder, then you can make them yourself from Plexiglas sheet and rod. Plexiglas is lightweight and has excellent weathering characteristics, so it can be exposed outdoors without problems. The only disadvantage to using Plexiglas as an insulator is its low softening point of around 110 deg C. Beware of circumstances where conductors could run hot, for example in an ATU inductor with heavy circulating current.

Some radio amateurs have replaced a pane of glass in the shack window with a sheet of Plexiglas. The Plexiglas can then be drilled to allow feeders to pass through the window. When the shack is eventually decommissioned, the original glass plate can be replaced.

Acrylic sheet can be found in your local Home Depot. Look for the glazing section, where sheets of glass are stocked. In our Cortlandt Town Center store, this section is tucked away behind the Andersen double glazing. Alongside the panes of glass, you will find GE Lexan polycarbonate sheet and GE Crystalite acrylic sheet in various sizes and thicknesses.



**Glazing section of Home Depot with glass, acrylic sheet and polycarbonate sheet available.**

### How it's made

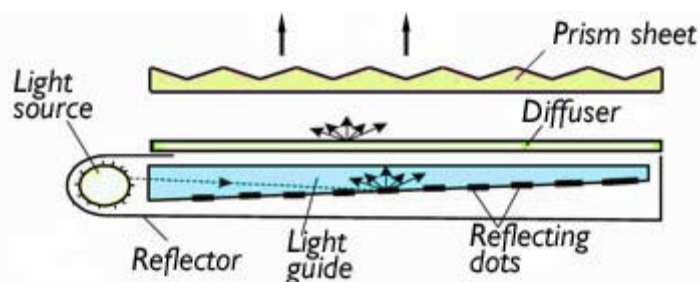
Manufacture of methyl methacrylate,  $\text{CH}_2=\text{C}(\text{CH}_3)\text{O}_2\text{CH}_3$  begins with methacrylic acid, which is prepared by reacting acetone  $\text{CH}_3\text{COCH}_3$  with sodium cyanide  $\text{NaCN}$  to produce acetone cyanohydrin  $(\text{CH}_3)_2\text{C}(\text{OH})\text{CN}$ . The acetone cyanohydrin is then reacted with methyl alcohol  $\text{CH}_3\text{OH}$  to produce methyl methacrylate. Acrylic polymers are formed by reacting monomer, such as methyl methacrylate, with a catalyst. A typical catalyst would be an organic peroxide. The catalyst starts the reaction and keeps it going, but does not become part of the resulting polymer. Acrylic plasticsheets are formed by the process of bulk polymerization in which the monomer and catalyst are poured into a mold where the reaction takes place.

Organic peroxide initiators for acrylic polymers (and many other polymers) are manufactured by the company I work for. A couple of other links with acrylics -- in the 1970s I worked on reaction products of acrylic esters with tin -- the resulting organotin compounds are useful as PVC stabilizers. And earlier this year, the original developer of Perspex -- ICI -- was bought by my company.

### Light 'em up

I'll finish with a couple of modern applications of acrylic plastics. The first is the "optical lightguide" that is part of the flat panel liquid crystal display in PC monitors, notebooks and cell phones. The light source is usually a cold cathode fluorescent lamp or an LED. Light is fed

from the lamp into the edge of the lightguide, which must then distribute the illumination evenly across the entire surface of the panel without loss, even in long lightguides. The material for the lightguide must be pure and show high transparency -- for which Plexiglas is ideal.



**Backlight for liquid crystal display contains a "Light guide" made from Plexiglas acrylic polymer.**

The second application is plastic optical fiber or POF. Optical fiber used for long distance communication is usually based on glass fiber. However, for short, consumer-grade fiber optic cables, a 1mm fiber made of polymethyl methacrylate is perfectly adequate as the core material. The thin cladding over the core is composed of fluorinated polymers. ■



**Clear TOSLINK plastic optical fiber cable for digital audio applications.**

-NM9J

## A "Real" Ham's Test

1- *Aliens from a highly advanced planet visit earth and you are the first person they encounter. They give you a small metallic disc that can eliminate all disease, bring world peace, and stable economy. Do you*

- A - Give it to the President of the United States.
- B - Deliver it to the United Nations.
- C - Take it apart to see how it works.

2- *As you grow older, what quality of your youthful life do you miss the most?*

- A - Boundless energy.
- B - 39 cents per gallon gas.
- C - Peak sunspot cycles.

### 3 - *When is it OK to hug another male?*

- A - When it's your father and you haven't seen him in over a year.
- B - When you are performing the Heimlich maneuver.
- C - When the homebrew antenna you and your buddy just put up actually works.

### 4 - *In your opinion the ideal pet is:*

- A - Cat
- B - Dog
- C - A parrot that can ID for you every 10 minutes without prompting.

### 5 - *One weekday morning your XYL tells you she is not feeling well and asks you to get the 3 children ready for school. You reply:*

- A - "We have three kids?"
- B - "Is there anything special they need to take to school?"
- C - "Sorry, I'm net control at 0700 for the Old Ragchewers Net".

### How to Score:

Give yourself 20 points for every time you answered C and 10 points for any other answer.

100 Points - A real Ham.

80 Points- You have the potential of becoming a real Ham.

60 Points - Better start reading QST, CQ and the ARRL Handbook.

50 Points or less - No hope. Better donate your equipment to a school radio club and take up another hobby like yard work, collecting paper clips, or go shopping with the XYL.

## Plan to Join the ARRL or Renew Membership ?



Ask our Treasurer for a special ARRL Club Membership Application or download the Application from the YARC Website. Complete the Application and return it to the Treasurer with the application fee.

There is no extra cost to you, and our club gets to retain a portion of the dues.

## Weekly Breakfasts



### Tues. Morning Breakfast:

**7:00 a.m. at**  
**Back Burner Cafe**  
 8400 E. Long Mesa Drive  
 & N. Robert Road  
*Informal – all are invited.*

### Wed. Morning Breakfasts:

**7:00 a.m. at**  
**Iron Horse Restaurant**  
 (Hwy 89 in Chino Valley)  
 (N 34°43'56.5" W112°27'15.4")\*  
*informal – all are invited*

**8:00 a.m.**  
**Masonic Lodge**  
 (1280 Willow Creek Road,  
 2<sup>nd</sup> Floor; above Bank of America)  
*informal – all are invited*

\* Location data (per WGS84) provided  
 by Fred Zimmermann, N7PJN

## Area Repeaters

Fre- quency	PL	Location	Owner/Club	Auto- Patch	Rem. BaseOr Linked	Vo IP	Notes:
52.560-	100.0	Mt. Union	N7NGM			IRLP	Node 3301
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				
147.140+	162.2	Flagstaff/-Mt. Elden	ARA		Linked to Mt. Ord -		Mt. Ord=147.36
147.220+	162.2	Mingus Mtn	VVARA				
147.260+	103.5	Mt. Union	ARES/RACES				
224.080-	156.7	Mt. Union	WA7JC				
442.150+	100.0	Mingus Mtn	W1OQ/Northlink				
442.350+	100.0	Glassford Hill	N7KPU			IRLP	
448.475-	100.0	Flagstaff-Elden	ARA	Yes			
448.875-	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.		P mtn=927.3875
449.725	110.9	Mingus Mtn	WA7JC				
449.750	91.5	Williams	K7NAZ		Linked to Win-Sys		
927.0875-	151.4	Mingus Mtn	WB7BYV				
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 Tone of 100.0 Hz**

For more Repeater Information & Listings refer to:

- [www.w7ara.org/Web/](http://www.w7ara.org/Web/)
- [www.azrepeaters.net](http://www.azrepeaters.net)
- [www.azfreqcoord.org/listings.htm](http://www.azfreqcoord.org/listings.htm)

## YAVAPAI AMATEUR RADIO CLUB

P.O. BOX 11994

PRESCOTT, AZ 86304

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

Many thanks to Pete Morrison, K6VVR, our Webmaster

