



# Arc Over

Fox River Radio League  
PO Box 673  
Batavia, IL  
60150-0673

November, 2004

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## President's Traffic

*by Bill Schaben, W9AX*

The question at the last meeting was: "With winter and cold weather almost here, are your antennas ready?" Most of the responses were positive in that they were ready, but some of us indicated we still needed to get something done.

The reason for the question was to remind everyone that fall and winter is great for ham radio. Without the summer activities, we can devote more time to the ham projects we've wanted to do. Some great contests are coming up along with some just plain rag-chewing. So, as long as this weather lasts, I need to get out there and get my loop antenna put back together. Hmm, I think I'll get the G5RV back up also.

Don't forget the emergency preparedness of being ready.

On the club scene, the November is when the candidates for the next year are announced. There is still time for you to run for an office. The quality and activities of the club are determined by the officer. If you have some talents that you think the club can use, run and become an officer.

Don't forget two important dates coming up. The first is the annual meeting in December. And the next is the annual banquet, date to be announced. Both are highlights of the year. See you there.

73

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## FRRL Elections in December

*by Dick Illman, AH6EZ*

Per our by-laws, a three member Nomination Committee was formed by the President at the September Board Meeting. Dick Illman AH6EZ, Kermit Carlson W9XA, and Denny Barfuss W9HI have developed a slate of excellent candidates that will be presented at the November general meeting.

The positions of President, Vice-President, Two Directors, Secretary, and Treasurer all have candidates. Each candidate will be asked to stand before the membership at the December meeting to describe their reasons for running, their plans or ambitions, etc.

The bylaws provide that nominations by the membership can be made no later than the November meeting.

Feel free to contact any of us if you are interested in giving back to the FRRL with a little of your time. Write-ins are allowed on the ballots.



## Bill Erickson HF Challenge by Mike Urso, K9FE

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### HF challenge for November

I must apologize for this rushed column. I have been extremely busy getting ready to move a schools computer system on first the 15<sup>th</sup>, then it was changed to the 30<sup>th</sup> of October. As of now it is November 20<sup>th</sup>. Being in a constant state of just total terror about the move for over a month has been a little taxing. Personally I have spent a good deal of time in the car HF mobile working a lot of special events and islands.

Not a lot of changes this month, but Keith N9YA, just passed K9JE Jack in the operator class. Nice going Keith.

In the limited class there have been no moves. Joe NA9A, keeps making little steps that are making him almost unreachable in the QRO class. Keep up the great work Joe!

Contests and QSO parties abound. Get active. I wish I had the time to work radio as much as I would like.

Remember, just because you started in one class doesn't mean you are tied to that class all year. You can go from **Limited** to **Operator** to **QRO** easily. Going backwards poses a problem since

you cannot use your **QRO** contacts for **Operator IF** they were gotten with higher power than the class you want to be eligible to be in. Remember the 250-watt output power limit on the **Operator** category.

Remember to get your updated **totals** to me by the 15<sup>th</sup> of each month to have them included in the **ArcOver**. If you are a day late of so, don't worry, I'll still get them in. Send them to [challenge@frri.org](mailto:challenge@frri.org). Also include a list of rare and not so rare entities you have worked so we can all be a part of the HF hunting. The bands may seem dead, but make sure you try...you never know how the propagation can change.

Good Hunting!  
73 de K9FE Mike Urso

See Page 5 for the standings



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## A TALE OF TWO METERS

by Dave Holdeman, N9XU

### The Past

It was the best of times. It was the worst of times. Shades of Sidney Carton, A Tale Of Two Cities and all that. Seriously, it was early 1974 and I was making good money as an Engineering Supervisor for AT&T. The mid-east oil embargo was winding down, but there were still spot shortages here and there. It was at this time that I decided to drive up to Amateur Electronic Supply (AES) in Milwaukee and take advantage of a sale on 2 meter gear that they had recently advertised.

I took off for AES at 7:00 AM on a Monday morning from my home in Hanover Park, IL. The trip under normal weather conditions should have taken no more than two hours, but I ran into a horizontal ice storm en route that made driving nearly impossible. I arrived at AES about 1:00 PM and bought an SBE model SB144; a 12 channel crystal controlled 10 watt transceiver with an S meter which doubled as a power output indicator.

Shortly after leaving AES, the electric power failed in the Southern Wisconsin area and I was unable to refill the car's gas tank for the trip home because of lack of power at the gas pumps. I was driving on fumes on interstate I-294/94 towards home with my heart in my mouth and I heard on the car radio that electrical power

*(Continued on page 3)*

## Share the Excitement!

by Dick Illman, AH6EZ

Here is what I have heard of recently. If you had fun with ham radio, share it. If you have not been having fun with ham radio, why not?

AH6EZ. Dick worked VK0DX in Antarctica on 30m CW the other evening. Not bad with a non-resonant inverted vee and the low sun spot cycle.

KC9DMS, Lloyd is having fun with his new TS2000, although he needs to get an HF antenna connected so that he can see what he is missing by just operating 2m.

KB9YSI, Bill is continuing to pound out the QSOs with his trusty FT817 QRP rig.

KC9FPD, Joe is learning all about satellite antennas with a deadline of Thanksgiving for having an operational setup on the air.

Let me know of fun you are having with ham radio by email ([AH6EZ@aol.com](mailto:AH6EZ@aol.com)), on the Fox Repeaters, or telephone 630-584-4388. I will share it in the next Arcover. If I do not receive any input for this column, I may discontinue it.

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## November Program Notes

by Dick Illman, AH6EZ

I am working on a two part program about antennas. The first session will be at the November meeting and the second session will hopefully at the January meeting. Since the program will be done the week after election night, you can come to the meeting and be entertained and informed instead of bored with the political rehash of the election results. The December meeting will include our traditional Christmas Party led by K9LU Lou Petkus.

## IRLP Note

Did you know that our node recently passed the 6000 mark on Internet connections? Connection 5998 was a VK# who turned out to be an engineer who used to design a BPL solution for the Australian marketplace. It had a center frequency of 7 MHz but is now out of business. I wonder why. If you are not on UHF and using our IRLP node, you are missing out on a lot of fun. When was the last time you had a real long ragchew with a DX station?

## 2 METERS

(Continued from page 2)

had just been restored to Union Grove, WI. Luck was with me as I spotted the Union Grove exit ramp just ahead. I reasoned that if the power was newly restored, there should be gasoline in town. Sure enough, I coasted into the first gas station I could find and the station had plenty of gas. The proprietor said that I was his first customer that day due to the storm.

I arrived safely home just before dark and installed the radio in my nearly new 1973 Mercury soon after. About two weeks later, the radio was stolen from my car before I had much of a chance to enjoy it. It was later recovered and was turned over to my insurance company, but that's another story. It ended up being sold to another ham.

## The Present (30 years later)

On May 2, 2004, I spotted an identical transceiver at the Dekalb County, IL hamfest. It carried a \$35.00 price tag which I thought was too high. About an hour later I offered the seller \$10.00 for it (I'm not sure why, maybe nostalgia was affecting my brain) and he accepted my offer.

The next day I examined my purchase and noticed the following:

1. The power receptacle on the rear of the chassis was broken and the positive contact was rubbing against the metal.
2. The top and bottom covers were scratched and the crackle finish was chipped in various places.
3. The top cover had four extra holes drilled in it.
4. The mounting bracket that came with the radio was not original.
5. The radio had no operator's manual.
6. The radio was equipped with six pairs of crystals; only four of which were useful in my area.

I performed an internet search for an operator's manual and had five replies in about one half hour's time. Some had extra crystals, but they weren't suitable for this rig.

Ed Lambert (K1ZOK) made me a nice legible copy of his manual and an enlarged diagram so it was easy to discern what modifications would be necessary to make the radio function in this modern age.

I replaced the broken power receptacle with a

(Continued on page 4)

## **2 Meters**

*(Continued from page 3)*

small metal plate and rubber grommet (See Figure 1 on page 9 of the web version of the ArcOver). Through the grommet I wired in a new power cable with a modern tee connector. The rubber grommet was large enough to pass a small coaxial cable along side the power cable for connection to the phase modulator for the insertion of sub-audible (PL) tones. I had an old Com-Spec 32 bit tone encoder in my junk box. After connecting the transceiver to my dummy load, I was heartened to see that the power output measured between 10 and 12 watts. .

I cleaned the unit with ammonia and cotton swabs and it started to look pretty spiffy. My son who runs an auto body shop, plugged the unwanted holes in the covers and painted them a nice charcoal gray using automotive enamel and clear coat. Since the covers used metric threads, I replaced the old grimy screws with shiny computer hard drive mounting screws which made a nice contrast with the charcoal gray. Now the unit looked better than new.

Before ordering crystals, I checked the output frequencies with my counter. The transmit crystals that were common to my area were put on frequency and the unneeded ones removed. Two receive crystals were off frequency when I used my synthesized hand held transceiver as a signal generator. I performed an internet search for crystal manufacturers that were familiar with the SB144 specifications and would still make 2 meter crystals at a reasonable price. I settled on the Bomar Crystal Company of Middlesex, NJ and the Sentry Manufacturing Company of Chickasha, OK. I have used them in the past and have found them to be of good reputation. I placed an order on June 7, 2004.

Finally I examined the mounting bracket that came with the radio. I found that it would work with the transceiver satisfactorily if I drilled two extra holes and used small felt spacers between it and the radio mounting screws. I stripped the old finish from the bracket and found out that it was nicely plated underneath. It probably won't have to be repainted at all. I will probably never use the mounting bracket, but just in case, I tapped out the original threaded mounting holes in the sides of the radio from their original metric threads to 8-32 to match 4 knurled screws that I found at Ace Hardware. They are called clamp screws, come in various sizes and are quite attractive. The mounting bracket arrangement is shown in figure 2.

On July 21, 2004 I installed my new crystals in ascending order by frequency. I noticed that transmitting positions one and two were oscillating on the wrong frequency and were very unstable although the power output seemed OK. I realigned the transmitter and that cleared up the trouble. I believe I had parasitic oscillations on those two channel positions.

There are three common PL frequencies used in my area. It was necessary therefore to come up with an arrangement to make the changing of PL frequencies easy. In order to do this, I removed the tiny DIP switches from my junk box PL deck and replaced them with miniature toggle switches. I mounted the whole shebang in a small modem case, bringing the toggle switches out through the front panel. At the same time, I added an LED to remind me if the PL deck was on or off. Voltage for the PL was obtained from a regulated DC wall plug that I found at a surplus store. I then velcroed the PL case to an old metal book end. The bottom edge of the book end fits under the transceiver which holds the PL case vertical. The PL case assembly is shown in figure 3.

If one is adding PL to an old transceiver, it is normally good engineering practice to connect it to the modulator via the center terminal of the deviation potentiometer. I was unable to access the deviation pot, but was able to connect to the modulator transistor's base via a 10 K series dropping resistor and a one mfd capacitor. I mounted these components in the PL case.

The SB144 is capable of 15 Khz deviation and has no automatic audio level control circuitry. To set the deviation to approximately plus or minus 5 Khz, I used the following set up: To the output of my scanner, I connected a low impedance VU meter. I then clamped the microphone of my synthesized 2 meter base station rig about one foot away from the speaker output of an audio oscillator. I connected the RF output of the synthesized transceiver to a dummy load and tuned the scanner and the synthesized rig to a frequency that is common to one of the transmit frequencies of the SB144. I turned on the audio oscillator, keyed the synthesized transceiver and used the volume control on the scanner to set a reference value on the VU meter attached to

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Erickson HF Challenge Standings as of 9/15/04

Ragchew Class	States/Provinces	DX Countries	Total
K9COE	43	21	64
AH6EZ	31	18	58
K9FE	23		23
W9DTR	19		19
K9IH	12		12
NA9A	6/0	4	10

Operator Class	States/ Provinces	DX Countries	Total
N9YA	50/12	113	175
K9JE	48/10	109	167
W9DTR	50/11	76	137
K9COE	50/11	75	136
NT3J	44/8	68	120
KB9YSI	38/8	63	109
J68AR	33/8	62	103
W4CEO	37/4	47	88
W9XA	38/4	37	79
K9IH	39/6	23	68
KA9OBH	0/1	36	37
W9DNJ	11/1	3	15

Limited Class	States/ Provinces	DX Countries	Total
K9MMS	49/7	93	149
M/AH6EZ	3/0	28	31
MM/AH6EZ		11	11
KB9YYX	7	0	7

ORO Class	States/Provinces	DX Countries	Total
NA9A	40/6	236	282
AH6EZ	50/13	181	244
WB90	38/4	101	143
K9FE	21/4	22	47
WOHED	36/2	2	40

## **2 Meters**

*(Continued from page 4)*

the scanner. I then connected the SB144 to the dummy load and clamped the SB144 microphone in place of the synthesized rig's microphone. I then keyed the SB144's microphone, and adjusted the deviation potentiometer on the SB144 to get the same reference level on the VU meter attached to the scanner. I set the PL level by listening to the output of the scanner and backing it off until it was slightly below the audible point.

The radio looks like something out of the 70's (which it is) with its chrome plated trim and shiny front panel. It and the PL case look very attractive and make a nice addition to the shack (See Figure 4).

I have been using the radio when I run our local net and have gotten nothing but praise for its rich audio. The SB144 uses a frequency multiplication of 24 which probably contributes to good audio linearity.

One never knows what one might find at a hamfest. I just recently picked up a Regency HR2B, but what am I going to do with another 2 meter transceiver?

Dave Holdeman, N9XU

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## **Solar Flux**

*by Bill Muhr, KB9YSI*

Thanks to Dave, N9XU, for the nice article on his 2 meter rig. You can see the accompanying photos on the web version of the ArcOver.

A couple of people have mentioned the possibility of doing away with the columns in the online version — they say that makes it hard to read. So, as a test, I'm doing a mixed version this issue. Take a look and let me know which layout you think is best for reading (in print and online).

November is ARRL Sweepstakes month, and the CW portion of CQWW is the last weekend in November. If you are into contesting, or just getting started, these are great contests to play in. Check out the ARRL web site for more info and the exact dates.

Don't forget the election nominations at the November meeting, and the actual election in December. If you want the club to reflect your concerns and focus on your interests you need to do your best to see that your interests are represented. You do that by voting.

This month's radio images are from Kenwood.

Have a good month, and 73,

Bill,  
KB9YSI

## About the FRRL

The Fox River Radio League, Inc., is a general interest amateur radio club serving the central Fox River Valley area. Records indicate the club has been in existence since at least 1924, and has functioned continuously ever since. We are an ARRL Special Service Club, an Illinois not-for-profit corporation, and a 501©(3) tax exempt organization as specified in IRS Statutes.

We sponsor training classes for new hams,

license examination sessions, an annual hamfest, and participate in various public service events. If you have a specialized amateur radio interest, chances are you can share it with one or more of our club members.

The Fox River Radio League meets on the 2nd Tuesday of every month at the Prisco Community Center in Aurora, Illinois. The meeting begins at 7:30 PM. After conducting business, coffee and

snacks are served while we socialize. Following the break, a program of interest will be presented. All persons interested in amateur radio are invited to attend. Families are welcome. *We hope to see you there!*



## License Exams

The Fox River Radio League, Inc., in conjunction with the ARRL VEC, conducts amateur examinations on the 3rd Tuesday of January, Marcy, May, September and November in the basement of the Prisco Community Center, 150 W. Illinois Street, (South East corner of Lake and Illinois) in Aurora, IL. at 7:30 PM. No advance registration is required, but please be sure to

bring your license (if you have one) and a photocopy of it, original CSCES and a photocopy (if needed), some form of photo identification, and the fee of \$12.00. (The FRRL receives no portion of this fee.)

The next exam session is scheduled for Tuesday, November 16, 2004, at 7:30 pm at the Prisco Center.

## FRRL Dues

Annual dues are payable no later than the January Club Meeting each year. Persons joining during the year will have their first year's dues prorated to the nearest yearly quarter.

Regular dues are \$20.00 a year, Senior Citizen dues are \$12.00. Family dues are \$30.00. You can also help support the FRRL Repeaters by joining as a combined Club/ Repeater member for \$30.00. Repeater dues are \$20.00.

Check with the Treasurer for details and additional dues rates.

## Nets

Net Name	Freq.	Day	Time
FRRL	147.210	Tuesday	7:30 PM Local
10-10 CW	28.150	Monday	8:00 PM Local
10-10 SSB	28.720	Monday	8:30 PM Local

## Fox River Radio League

Founded 1924

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FRRL CLUB MEETINGS ARE HELD AT THE PRISCO COMMUNITY CENTER AT 150 WEST ILLINOIS STREET IN AURORA. PLEASE CHECK THE FRRL WEB SITE FOR A MAP TO THE MEETING LOCATION .

<http://www.frri.org>

Send Address Corrections to:  
 Fox River Radio League, Inc.  
 29-W-458 Candlewood Lane  
 Warrenville, Illinois  
 60555-2639

## FRRL Event Calendar

### November, 2004

FRRL Board Meeting ..... 2  
**FRRL Meeting** ..... **9**  
 VE Testing ..... 16

### December, 2004

FRRL Board Meeting ..... 7  
**FRRL Meeting/Party** ..... **14**  
**Merry Christmas** ..... **25**  
**Happy New Year** ..... **31**

## Handy Web Links

FRRL Web Site	<a href="http://www.frri.org/">http://www.frri.org/</a>
ARRL Main Site	<a href="http://www.arrl.org/">http://www.arrl.org/</a>
ARRL Central Div. Site	<a href="http://www.central.arrl.org/">http://www.central.arrl.org/</a>
ARRL IL Section Site	<a href="http://www.central.arrl.org/illinois.html">http://www.central.arrl.org/illinois.html</a>
ARRL IL Section News	<a href="http://www.arrl.org/sections/?sect=IL">http://www.arrl.org/sections/?sect=IL</a>
ARRL Contest Page	<a href="http://www.arrl.orgcontests/">http://www.arrl.orgcontests/</a>
Contest Calendar	<a href="http://www.hornucopia.com/contestcal/">http://www.hornucopia.com/contestcal/</a>
Callsign Lookup (QRZ)	<a href="http://www.qrz.com/">http://www.qrz.com/</a>
Vanity Callsign Info	<a href="http://www.vanityhq.com/">http://www.vanityhq.com/</a>
IRLP Main Page	<a href="http://www.irlp.net/">http://www.irlp.net/</a>
AMSAT	<a href="http://www.amsat.org/">http://www.amsat.org/</a>
FCC Services	<a href="http://wireless.fcc.gov/services/amateur">http://wireless.fcc.gov/services/amateur</a>
SMC Contest Club	<a href="http://www.w9smc.com/">http://www.w9smc.com/</a>

## ArcOver FRRL Newsletter

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The ArcOver is published monthly by the Fox River Radio League, Inc. Articles and letters are always welcome. The normal deadline for material is six days prior to the end of the previous month. Articles can be sent by email to kb9ysi@arrl.net or via U.S. Mail. Contact the Editor for details and submission guidelines.

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The opinions expressed in the ArcOver are strictly those of the authors and do not necessarily represent those of the FRRL, Inc. or its sponsors.

## Local Area Repeaters

**W9CEQ—147.210 Mhz. \***  
 +600 KHz, 103.5 access tone  
 Owned by FRRL

**W9CEQ—444.300 Mhz. IRLP Node # 4850**  
 +5 Mhz, 114.8 access tone  
 Owned by FRRL

**W9ZGP—146.580 Mhz.**  
 +1.08 Mhz (147.660)  
 Owned by NIARC

**KC9OEM—145.470 Mhz.**  
 -600 KHz, 103.5 access tone  
 Owned by Kane County OEM

**W9XA — 224.40 Mhz, +5 Mhz, IRLP Node #4846**  
 — **443.65 Mhz, +5 Mhz**  
 — **1292.00 Mhz, -20 Mhz (1272.00)**

\* Weekly FRRL Net—Tues. Eve. at 7:30 pm local time.





Fig 1. The replaced the broken power receptacle, showing the new metal plate and rubber grommet .

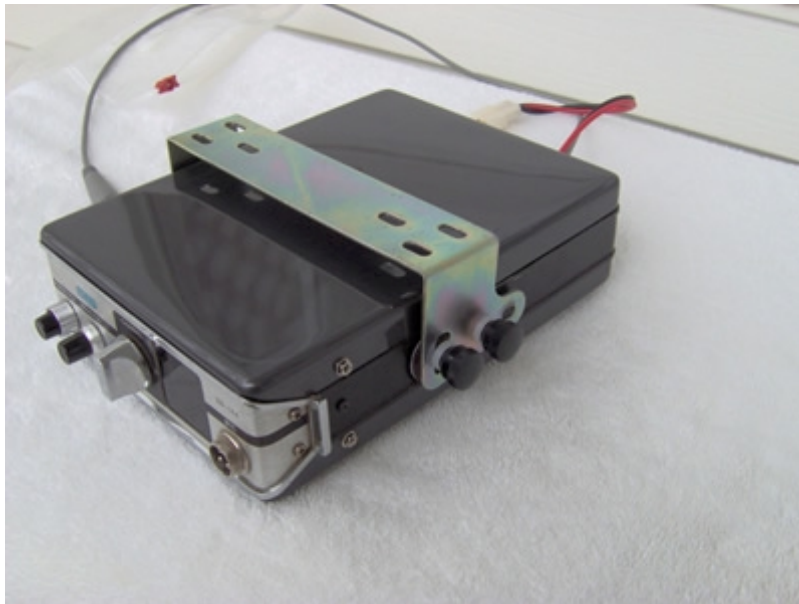


Fig 2. The mounting bracket arrangement .

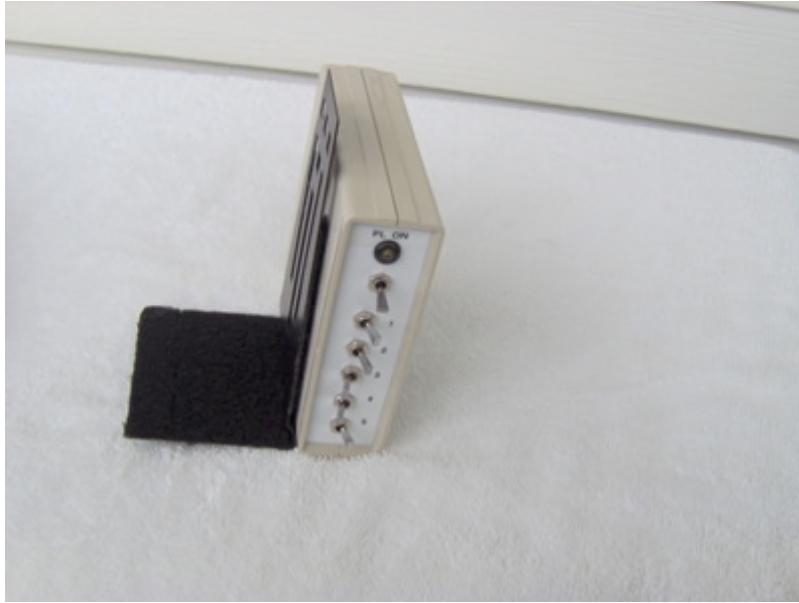


Fig 1. The PL case assembly with the fancy 'bookend' mounting bracket .



Fig 2. The complete SBE model SB144, outboard PL assembly, speaker and microphone. Everything old IS new again!