



Arc Over

Fox River Radio League
PO Box 673
Batavia, IL
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October, 2006

President's Traffic

By Dick Illman, AH6EZ

Many members enjoyed the DSP receiver program put on by W9XA at the September meeting. We had an extended social time at the meeting which was enjoyed by everyone. It goes to show that the FRRL has a lot to offer our members. We continue to have more than a third of our members attend our meetings.

At the September meeting we announced a restructured Repeater Committee that included operators who were more regular repeater users and attentive to some of the recent interference and improper operation on the repeaters. We have also added several control operators to help out.

At the September meeting we announced the nominating committee consisting of outgoing director W9YBH, and returning directors KC9DAO and K9FBI. They are already working on a slate to be announced at the November meeting in preparation for the December meeting. When they contact you, please consider how you can offer your support for the FRRL in the one year term positions of President, Vice-President, Secretary, Treasurer, and two Directors with two year terms.

Hopefully you are making preparations for the Illinois QSO Party on October 22. It should be great fun as a Field Day like opportunity to operate mobile or portable at a distant county or county line border for the short 8 hour duration of the contest. The FRRL made a good showing last year and we hope to continue that trend this year.

We are looking for people to add their creative skills to the St. Charles Scare Crow Festival on October 7. We have an operating event scheduled at Kermit W9XA's house but hopefully we will also have a radio-active scare crow on display to remind the public about the FRRL. When you are not raking leaves, get on the air and continue to make a good showing in the HF Challenge. Even though we are in the bottom of the sun spot cycle, there is still lots of HF activity.

If you need to upgrade your CW skills for a General class license, join in on the classes being put on by our Education Chairman, N9CHA late in October and early November. Contact N9CHA for details.

That's it for this month. See you at the meeting.

October Program Note

By Kermit Carlson, W9XA

The October meeting will feature a presentation on D-STAR by Mark Thompson, WB9QZB.

D-STAR is a digital protocol developed by the Japanese government and Japanese Amateur Radio League. Icom is the first manufacturer to manufacture D-STAR-compatible radios, although the protocol is open to anyone.

D-STAR enables simultaneous digital voice and data transmission. At present, digital voice can be sent on 144, 440 & 1.2 GHz (4800 bps) concurrently with low speed asynchronous data (950 bps) in a narrow 6.25 KHz channel. High speed data (128 kbps) can be sent concurrently using TCP/IP on 1.2 GHz in a 130 KHz channel.

D-STAR repeaters are connected via the Internet, which enables worldwide connections across the D-STAR network. Imagine having a broadband Internet connection via your mobile rig.

Among the many possible applications, D-STAR promises enhanced emergency communication handling - the efficiency of simultaneous voice and data communications, as well as graphic and other large file transfers that are difficult or impossible with current packet technology.

Mark, WB9QZB, will present the D-STAR system in detail, with an update on Icom technology, the radios currently available that support D-STAR, and what is in development. Mark has been actively involved for many years in local packet and digital radio activities, and has been featured on Hap Holly's RAIN Report.

September Program Update

By Kermit Carlson, W9XA

There were questions after the September meeting's presentation on DSP techniques about the use of the quad-multiplexer chip, FST-3253, as the quad-detector circuit in the SoftRock receiver. This scheme is called a Tayloe detector after the inventor Dan Tayloe N7VE and it is covered by one of a dozen patents that he holds. In his paper Tayloe describes that the circuit should be applicable through 10 Ghz.....

Quoting here from Sakari Mattila, VK2XIN / OH2AZG;

"The Tayloe detector is a direct conversion detector, which appeared on several mailing lists in mid October, 1998. The inventor, Dan Tayloe, N7VE call is switched integrator. It bears close resemblance to switched capacitor filter.

The basic idea is to store average voltage of each four parts of a cycle of incoming RF into four capacitors. If the RF is pure carrier, constant voltages will be produced. Modulated RF produces slowly variable voltages, which corresponds I (phase) and Q (quadrature) signals in a quadrature detector. If the RF is audio modulated, I and Q signals will be audio signals.

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September Program Update

(Continued from page 2)

It is known, that all modulation types can be decoded from I and Q signals within detectors bandwidth. A stereo DSP processor will be needed for universal detector. Dan Tayloe used phasing type decoder for SSB signals.

The minimum detectable signal depends on audio amplifiers, like in any direct conversion receiver. The dynamic range is much better than in commercial receivers. Thus Tayloe detector seems to be good for measuring instruments.

The electronic switch must be fast enough to switch at four times the received frequency. Internal resistance of the switch must be small, much less than 50 ohms. The suggestion is 74CBT3253, which should work up to 100 - 150 MHz. The original detector did not have any RF amplifier, but I would add it, because there is high-level noise coming out of the switch at four times received frequency and harmonics. "

This brings up an additional test I need to check and that is to measure the output - via the antenna lead from the SoftRock - what frequencies would be radiated back out from the Tayloe detector to the antenna and their relative power ! I'll let you know what I find !

While the Softrock receiver series is the most well known implementation of the Tayloe detector: it appears that the AMSAT SDX (Software Defined Xponder) will use an implementation of this circuit for the next generation of Linear Transponders that AMSAT will fly due to it's low-power consumption and excellent performance.

A complete paper by Dan Tayloe can be found at (http://www.norcalqrp.org/files/Tayloe_mixer_x3a.pdf). A homebrew HF receiver design by Bozidar Pasaric 9A2HL, Croatia that also uses the Tayloe detector can be found at <http://www.hanssummers.com/electronics/gallery/4/> .

FRRL Club Nets

The regular weekly FRRL 2 Meter Net takes place every Tuesday evening at 7:30 pm local time, except on meeting nights, on the W9CEQ repeater, 147.210 MHz. +600 KHz, 103.5 access tone.

The Next Gen Hams Nets take place on the 2nd and 4th Wednesday evenings of each month at 7:00 pm local time on the FRRL repeater, W9CEQ—147.210 MHz. +600 KHz, 103.5 access tone.

Erickson HF Challenge Update

By John Spasojevich, K9COE

It's time for a review of how this all works in preparation for the annual rush to max out our year-end scores. If you are participating in the HF Challenge and you don't see your call or score in the ArcOver or on the website, that means either you didn't send me a score update or it got lost in the vastness of the internet or somebody messed up.

The way this works is like this: you send your score to challenge@frrl.org. It should then be forwarded to me automatically. I double check the calculations and enter the scores in my spreadsheet, and then send the monthly update to Tom for posting on the web and Bill for publishing in the Arc Over. Tom and Bill then do their magic, and things get updated. However, transcription errors can occur at any step in the process, so you might want to double check things for accuracy once in a while.

Just after December 31st you will need to mail your hard copy score sheets to Joe, NA9A, otherwise known as the Challenge Administrator, for verification and preparation of the award certificates which are presented at the Club Banquet at the end of January. The final standings for the year will be published after the Banquet, so don't look for them in the January ArcOver. We don't want to spoil any surprises by announcing the winners in advance.

On the update front, I had a pretty good run in the CQ WW RTTY Contest picking up a bunch of new ones for this year. Nothing earth shattering but I finally made up some of the distance between me and my competition.

Cyd, KC9JNP, is really going to town, she's definitely going to make a good showing, and with three months left in the contest, who knows...! For a new General she is making fantastic progress. You old pros had better watch out.

If you are a technician working or wanting to work on your code, there is a great opportunity to learn and practice at the upcoming technician course October 21st & 28th and November 4th & 11th in Oswego at the Church of the Good Shepard located at the corner of Route 34 & Washington Street in downtown Oswego. Code practice will be from 11 AM to 12 Noon. Check the FRRL website for the mp3 files of the code lessons, and contact Greg for more specific information.

This month's Challenge updates are on page 5, and are also available on the FRRL website.

Bill Erickson HF Challenge – September, 2006 Standings

Here are the current standings for the 2006 HF Challenge. If you did not submit a score sheet your score has not been updated. Remember to email your 2006 updates to challenge@frrl.org by the 15th of each month.

Ragchew Class	States/Provinces	DX Countries	Total
W9DTR	-	-	66
N9CHA	-	-	19
AL9A	-	-	19
K9FBI	-	-	17
AH6EZ	-	-	17
K9COE	-	-	16
K9IH	-	-	16
NA9A	-	-	2

Operator Class	States/ Provinces	DX Countries	Total
W9DTR	49/10	113	172
K9JE	42/4	125	171
K9FBI	50/6	86	142
N9YA	50/11	80	141
KB9YSI	45/5	48	98
N9CHA	44/7	41	92
W9YBH	19/1	21	51
KC9JNP	24/2	24	50
K9IH	11/4	3	18

Limited Class	States/ Provinces	DX Countries	Total
K9ARZ (PSK)	46/8	94	148
K9COE (RTTY)	50/10	84	144

QRO Class	States/ Provinces	DX Countries	Total
AH6EZ	50/11	167	228
AL9A	50/15	118	183
NA9A	32/6	131	169
W4CEO	50/8	91	149
J68AR	46/7	71	124
J68MS	38/5	34	77

Equipment Donation

By Dick Isely, W9GIG

Former FRRL member Don DeVilbiss, WB9YIN, passed away around 2001 or 2002. His spouse Pat DeVilbiss now has his call sign and moved to Ohio earlier this year to live with her daughter. The remnants of Don's ham radio estate have been given to me to dispose of as I see fit. The remaining large item, a Kenwood 820-S HF transceiver has been donated to the ARRL for sale in its on-line auction in late October.

I intend to give away the rest of the equipment at the October FRRL meeting. All items are "as is" with no guarantee of operating condition. I do not intend to bring anything back to my house. What is not taken at this meeting will go in the trash.

Here is a list of items to be given away. Depending on demand, we may institute a raffle for the more popular items.

- * Drake Model 2-B HF Communications Receiver
- * Midland Model 13-510 2 Meter FM Transceiver
- * Heath Solid State Volt Meter
- * Heath Vacuum Tube Volt Meter
- * Heath Vector Scope
- * Trionyx Frequency Counter
- * 2 Meter mobile antenna parts
- * Hickok Tube Tester
- * Assorted vacuum tubes
- * Lots of bits and pieces

NOTE - No private showings ahead of the club meeting.

General Class Question Pool Trivia

Selected from the current General Exam Question Pool

G0D01

Considering RF safety, what precaution should you take if you install an indoor transmitting antenna?

- A. Locate the antenna close to your operating position to minimize feed line losses
- B. Position the antenna along the edge of a wall where it meets the floor or ceiling to reduce parasitic radiation
- C. Locate the antenna as far away as possible from living spaces that will be occupied while you are operating
- D. Position the antenna parallel to electrical power wires to take advantage of parasitic effects

Answer on Page 8

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, March, 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 \$14.00. (The FRRL receives no portion of this fee.)

The next exam session is scheduled for November 21, 2006, at the Prisco Center.

FRRL Dues

Annual dues are payable no later than the January Club Meeting each year. New members 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 an additional \$10.00.

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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info@frrl.org

Web Site:

<http://www.frrl.org>

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Vice President

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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.frrl.org>

Handy Web Links

Send Address Corrections to:
 Fox River Radio League, Inc.
 40W981 Bridle Creek Drive
 St Charles, , Illinois
 60175

FRRL Event Calendar

October, 2006

FRRL Board Meeting..... 1
 FRRL Meeting..... 8
 License Class 21
 IL QSO Party..... 22
 License Class 28

November, 2006

License Class 4
 FRRL Board Meeting..... 7
 License Class 11
 FRRL Meeting..... 14
 VE Testing 21

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

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 arcover@frri.org or via U.S. Mail. Contact the Editor for details and submission guidelines.

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Local Area Repeaters/Nets

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—147.060 Mhz. (New Freq.)

+600 KHz (147.660)
 Owned by NIARC

KC9OEM—145.470 Mhz. (Kane Co. SKYWARN)

-600 KHz, 103.5 access tone
 Owned by Kane County OEM

W9XA — 224.40 Mhz, +1.6 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 on the FRRL 2 Meter repeater.
- Next Gen Youth Ham Net— 7:00 pm on the 2nd and 4th Wednesdays of each month. On the FRRL 2 Meter repeater.
- KC OEM Amateur Net— Wed. Eves, 7:00 pm on the KC9OEM repeater.