QSX

Volume XVIII Issue 10
Editor: Howard; KC2OJO

December 2011

Our next Executive Board meeting is Thursday, December 8th at 7:00 PM. Our General (Holiday Party and Awards Presentation) meeting will follow at 7:30 PM. Upon invitation, members who arrive early for the General meeting may participate (but not vote) in the Executive Board meeting.

Below is the list of our 2012 Officers and Directors as determined at the November General meeting.

Officers

President: Gary K2TVN — **Vice President: Chuck N2JIY**
Treasurer: Roger W2GLE — **Secretary: Howard KC2OJO**

2012-2013 Directors; the third will be appointed soon.

Fred K2LDC — **Scott AC2FV**

It's Party Time!

Join the fun at the Larkfield Amateur Radio Club's Annual Holiday Party. Spend a relaxing Thursday night enjoying good food, drinks (non-alcoholic), desserts and the company of your fellow ham radio operators. All members and their families are welcome.

Minutes of November 10th General Meeting

The November 10th meeting, chaired by Larkfield ARC President, Gary K2TVN started at 7:35 PM with the Pledge of Allegiance.

Howard KC2OJO gave the Secretary's report, and the QSX, website, and mailing list reports. It was reported that the minutes of the October 13th General and Executive Board meetings were published in the November QSX and released electronically on October 25th and via U.S. mail by Rich KA2LHK shortly thereafter. During the previous month, there had been no problems with either the Larkfield ARC website or mailing list. Mailing list subscribers were reminded that they could reach all of the other subscribers by sending an email to "larkfield@mailman.qth.net". The need for stories for publication in QSX and/or the club's website was reiterated.

Roger W2GLE, the club's Treasurer outlined the funds available in each of the club's bank accounts and the total assets that were available to the club.

Steve N2PQJ gave the ARES/RACES report. He reported that the ARES/RACES practice sessions were held each Monday night at 7:30 PM. Each session consists of three parts. The first portion is held via the Larkfield repeater (147.210 MHz, 137.5 PL). The second portion follows in a simplex mode on 147.420 MHz and the final portion is held on the 10 meter HF band using SSB (upper sideband) at 28.420 MHz. All amateur radio operators are welcome to participate. The total time is usually less than 15 minutes. He also informed the members that he was taking CERT classes and had taken the SKYWARN classes and suggested that interested members look into signing up for future classes when they are offered.

Bruno KC2ESI provided details about the new antenna that was purchased for the .210 repeater with the authorization of the Executive Board, The plan is to hold it in storage until we are able to install it on the tower at the lowest possible cost.

Peter WB2PAA gave the VE report. He indicated that 3 candidates had taken exams on October 15th at Huntington Town Hall and that they had all passed their license exams; 1 Technician, 1 General and 1 Extra.

Arnie N2PLS and Howard KC2OJO gave the Daytimers and Nightimers reports, respectively. The Daytimers were generally running 4 - 5 participants and the Nightimers were recently running 5 – 8 participants.

There was nothing reported for Good and Welfare.

Under Old Business, the current list of nominations for Officers and Directors for 2012 was read. No further nominations were received so the nominations were closed. Because there was only one candidate for each position no vote was required. Instead of having a vote, the slate was approved by the Secretary's one vote, per section 11.6 of the Larkfield Bylaws. It was announced that the two Directors and four Officers (described elsewhere) will be installed at the December meeting.

Under New Business, a discussion ensued concerning the Holiday Party. It was informally decided that, as usual, the Holiday party will replace most of the December General meeting. Individual members volunteered to buy and bring the food, soda, coffee, donuts, etc. Volunteers included Stan N2YKT (Deli stuff), Gary K2TVN (Chips and Soda), Arnold N2PLS (soda) and Howard KC2OJO (Coffee and Donuts).

Howard KC2OJO brought up the lack of participation in the Monday night (8:00 PM) Larkfield Info-Chat.

Gary K2TVN announced that he and Vic WA2ARQ would be manning a Larkfield ARC table at the Ham Radio University scheduled for Sunday, January 8th, 2012. He requested that other members assist in this effort. Alan N2ZUU raised the issue of what we would be offering prospective members and Gary listed some of the available benefits.

The formal meeting was closed at 8:23 PM.

EVENING PROGRAM

Following the formal meeting, Fred K2LDC and a high school student, Anthony KD2BBR, who had just received his technician license, gave a joint presentation describing the detection of Solar Flares by monitoring VLF frequencies (approximately 15 - 30 kHz) for the Sudden Atmospheric Disturbances (SIDs) caused by Solar Flares. More information is available in the article that appeared in the November QSX.

2012 Membership Renewal

Payment is due by January 1, 2012

Name: _____ Call Sign: _____

Address / Phone / email – If Changed:

Address: _____

Phone: _____

e-mail: _____

__X__	**Member Type (X only one Type)**	**Dues**
____	Regular ……	$ 35.00
____	Age 65 or Older ……	$ 25.00
____	Age 17 or Less ……	$ 25.00
____	Disabled ……	$ 25.00
____	Living Outside of Suffolk, Nassau, NYC ……..	$15.00

QSX

____ Please send me QSX by US Mail - **Add** $10.00

Total enclosed: $_____

Make check payable to: **LARC** and send with this form to:

Larkfield Amateur Radio Club Inc. P.O. Box 1450 Huntington, NY 11743

Date Submitted _____

Please get your 2012 Dues in by December 31st so that we all have an early opportunity to make sure that our budget and expenses are balanced. This is particularly important before we erect our new antenna

Minutes of the December Exec. Board Mtg.

Present at 8:05 PM were Gary K2TVN, Chuck N2JIY, Roger W2GLE, Fred K2LDC, Neil KC2TAF, Danny KC2TFS and Howard KC2OJO. After discussion the Board voted to approve the purchase of the Club's annual insurance and a new antenna for the .210 repeater. Adjourned at 7:35PM.

LARKFIELD INFO-CHAT

Monday nights at 8:00 PM on the .210 Repeater (147.420 simplex if the repeater is down)

147.210 MHz, Plus 600 kHz Offset, 136.5 PL Tone

Any topic of interest to club members

THE ISSUE OF PRE-EMPHASIS, DE-EMPHASIS, CLIPPING AND REPEATER AUDIO QUALITY. BY PAUL SEXAUER K3VIX. — PART 1 OF 2 PARTS — Slightly Shortened to Fit

The first question which needs to be addressed is why pre-emphasis and de-emphasis are used. The answer can be found when the properties of FM demodulators are analyzed. If the output of an FM demodulator (discriminator, quadrature detector or whatever) is monitored on an audio spectrum analyzer with no RF carrier input, it will be noted that the response displayed is one which rises at a 6 dB per octave slope. {The mathematics for the FM demodulation process predict this effect} In other words, with a flat RF noise spectrum entering the demodulator, the output will exhibit a noise characteristic which rises with frequency. If an FM signal were applied to the input of the demodulator and the modulating frequency were swept from low to high frequencies, maintaining constant deviation, it would be noted that the signal to noise ratio at the output of the demodulator would degrade as the modulating frequency increased.

To compensate for this, a de-emphasis circuit is used. In it's simplest form, this would consist of an R-C network which would roll off at a rate of 6 dB per octave, canceling out the rising noise characteristic of the demodulator. This eliminates the problem of S/N ratio degrading as the modulating frequency rises, but now results in a rolling off of the audio response if a "flat" FM signal is received. To have a net "transparency" in audio response, it becomes necessary to pre-emphasize the transmit audio at a corresponding 6 dB per octave rate. From this, you can see that de-emphasis came first and created the requirement for pre-emphasis at the transmitting end.

Going to the transmitting side, we have two seemingly different modulation schemes available: FM and PM. The major difference between these two schemes is that a phase modulator has a 6 dB per octave rising audio response (i.e. pre-emphasis is inherent in PM systems with no added circuitry). In a phase modulator, the total deviation is a function of both the modulating signal amplitude as well as frequency. In a direct FM modulator (i.e. in one where the modulating signal is applied across a varactor to vary the oscillator frequency) the deviation produced is a function of the modulating signal amplitude only. To achieve pre-emphasis, a series R-C network needs to be inserted into the audio path.

A sidelight here is that if you look at the mathematical representations of a PM signal versus an FM signal, the difference is that the modulation component in a PM signal is the mathematical derivative of the modulating signal in the FM signal. If you add the series R-C circuit ahead of the FM modulator, the signal at the output of the R-C network is the mathematical derivative of the applied signal. In other words, by adding the series R-C (pre-emphasis) circuit, the output of the FM modulator is now identical to the output of the phase modulator. The output of a direct FM transmitter with pre-emphasis can not be distinguished from the output of a PM transmitter with no added pre-emphasis circuit. The pre-emphasis circuit effectively "makes" an FM transmitter into a PM transmitter.

In the early days of FM, there were no varactor diodes so it was difficult, at best, to produce a direct FM modulator. PM modulation was, however, easy to achieve which is the reason that it was the "standard". The rising audio response of the phase modulator did cause some problems for manufacturer's. Since the audio response fell off at the low end, phase modulators had a hard time when it came to modulating them with PL tones. Direct FM modulators, being flat, had no such problem. With the advent of data communications, direct FM was the only way to modulate a carrier with baseband data.

Now, since the FCC (and the similar authorities in other countries) mandate that FM transmitters must not exceed their assigned bandwidth allocations, some means of limiting the deviation was needed. Along came the clipper circuit. The purpose here was to ensure that the modulating signal amplitude never exceeded a certain specific value (that which produces rated deviation). Of course, clipping an audio signal produces major distortion in the signal and this must be minimized. Therefore a "splatter filter" is inserted after the clipper. This splatter filter is simply a low pass filter and is designed to roll off the harmonics created during the clipping process. Note that the splatter filter does not "undo" the effect of the pre-emphasis circuit. The splatter filter does not "kick in" until the upper end of the audio range.

Part 2 of this article (recommended by Bruno KC2ESI) will appear in the next issue of QSX. Want to see the complete article, fast?
Go to http://www.repeater-builder.com/tech-info/fmtheorydiscussion.html

Ham Radio University 2012
Sunday, January 8, 2012

Briarcliffe College 1055 Stewart Ave Bethpage, NY 11714

Spreading Ham Radio Knowledge and Know How

A day of education to share ideas, experiences, knowledge and fellowship among Amateur Radio operators

Featuring Keynote Speaker --- Norm Fusaro W3IZ
ARRL Assistant Manager Member and Volunteer Programs

Suggested donation $3 - no preregistration is required!
Doors open at 7:30 AM with first forums at 9:00 AM

Forum Schedule as of November 11, 2011

Time	Room A	Room B	Room C	Room D	Room E	Room F
9:00am – 9:50am	Scanner Forum	Political Advocacy in NYC/ LI	Six Meters during Cycle 24	Transmitter Hunting	Remote Station Operating	
10:00am – 10:50am	Antenna Forum	NLI EmComm	Intro to DXing	QRP low power fun	Software Defined Radios Overview	
11:00am – 11:50am	Intro to D-Star	The Nat'l Traffic System in NYC/LI	DXing II	Working Satellites with your HT	Ham Radio Deluxe	
12 noon – 1:00pm					Keynote Speaker Norm Fusaro W3IZ	
1:30pm – 2:20pm	Advanced D-Star Build it Yourself	Telefunken – Long Island Wireless History	Contesting 101 –What Newbies Need To Know	Emergency Power for home	Dealing with Radio Frequency Interference	VE Session
2:30pm – 3:20pm	Meet your local radio clubs	Young Ham Forum	Logbook of The World	Grounding for the Ham Radio Station	IRLP	VE Session (continued)

Please contact info@HamRadioUniversity.org for further info.

The K7RA Solar Report — 11/18/2011

This week geomagnetic indices quieted a bit, as did solar activity in general. On November 9, sunspot numbers reached a high of 220, and this week, they declined, rose to 176 and then declined again. The average daily sunspot numbers slipped 8.4 points to 145, while the average daily solar flux dropped 12.5 points to 161.2. Sunspot numbers for November 10-16 were 152, 127, 155, 142, 176, 137 and 126, with a mean of 145. The 10.7 cm flux was 178.6, 173.9, 168.8, 155.3, 161.1, 148.3 and 142.3, with a mean of 161.2. The estimated planetary A indices were 3, 2, 2, 0, 0, 6 and 2, with a mean of 2.1. The estimated mid-latitude A indices were 3, 3, 3, 2, 3, 7 and 3 with a mean of 3.4

The most recent forecast predicts a bit lower activity than we've seen recently. The predicted solar flux from NOAA and USAF shows flux values of 150 on November 18-19, 155 on November 20-23, 150 on November 24, 145 on November 25-28, and then rising to 165 on December 4-7, which is just a few days before the **ARRL 10 Meter Contest**. The predicted planetary A index for November 18-19 is 7 and 8, then 5 on November 20-25, 7 on November 26-27, and 5 on November 28-December 8. Geophysical Institute Prague has their own take, with unsettled conditions November 18, quiet to unsettled November 19 and quiet November 20-24. Conditions should be good for the **ARRL November Phone Sweepstakes Contest** this weekend, which runs from 2100 UTC Saturday, November 19 through 0259 UTC Monday, November 21.

Space.com has an **interesting article** concerning whether or not the Sun is really headed for a grand minima as some have suggested. The study they cite suggests that an increase in solar activity over the next few decades is just as likely as a decrease. In other words, nobody knows!

There was lots of fun to be had on 10 and 6 meters this past week. Chuck Dennis, WA5ZTD, wrote: "Your article about 10 meters being open was sure right. On November 11 at around 9 AM PST, using just 100 W and a buddipole up about 20 feet in Hillsboro Oregon, I was able to work IK4WKU in Northern Italy, I heard a station in Northern Ireland, Argentina and Brazil. I sure hope it lasts a while."

The K7RA Solar Report was extracted from and is courtesy of the ARRL.

For the full report go to:

http://www.arrl.org/news/the-k7ra-solar-update-191

Packet Radio Assignment

WA2PNU (0-15)	145.070	BBS; FlexNet Gateway
WA2PNU-4	145.070	Local area PBBS
KC2COJ (0-15)	145.050	-4 = BBS
KC2COJ –4	144.050	BBS
NY2LI (0-7)	145.050	BBS=WA2PNU-4
NY2LI (8-12)	144.930	BBS=WA2PNU-4

Members of the Larkfield Amateur Radio Club are invited to use the W2RGM Repeater System:

2 meters
147.075 MHz out/147.675 MHz in
1.25 meters
224.560 MHz out 222.960 MHz in
70 centimeters
448.525 MHz out 443.525 MHz in
114.8 Hz PL

These machines are linked cross band also

448.500 MHz out 443.500 MHz in
448.475 MHz out 443.475 MHz in

The Larkfield Amateur Radio Club Operates:

WR2ABA HUNTINGTON REPEATERS

2 meters
147.210 MHz out/147.810 MHz in
4z/136.5 Hz PL
Linked cross-band with
70 centimeters
448.675 MHz out/443.675 MHz in
114.8 Hz PL

W2LRC SMITHTOWN REPEATERS

2 meters
145.430 MHz out/144.830 MHz in
4z/136.5 Hz PL
1.25 meters
224.620 MHz out/223.020 MHz in
70 centimeters
448.425 MHz out/443.425 MHz in
These 3 repeaters are linked cross band

The Larkfield Amateur Radio Club
Affiliated with American Radio Relay League

Officers (one year terms)

President Gary McDowell K2TVN (2011)
Vice-President Chuck Hartley N2JIY (2011
Secretary Howard Stern KC2OJO (2011)
Treasurer Roger Rapp W2GLE (2011)

General Directors (two year terms)

Neil Harris	KC2TAF	(2011-2012)
Pat McPartland	WS2A	(2011-2012)
Steve Hines	N2PQJ	(2011-2012)
Daniel Harris	KC2TFS	(2010-2011)
Fred Kruger	K2LDC	(2010-2011)
Ed Ebert	KC2E	(2010-2011)

WA2PNU Station Trustee Roger Rapp W2GLE
WR2ABA Station Trustee Roger Rapp W2GLE
W2LRC Station Trustee Roger Rapp W2GLE

Larkfield ARC December Birthdays

Call	Name
AB2BN	Donald Clark
KC2LTX	Robert DelGatto
K2JX	Jack Fisher
KC2TON	Richard Johnston
WA2WNY	Richard Yabsley

Our .210 Repeater is at full power
Thanks to Jack K2JX and Bruno KC2ESI.

The repeaters have been relocated to a better location and this has given the club the opportunity to upgrade equipment and antennas. The repeaters affected are the 2 meter repeater on 147.210 and the cross linked 70 centimeter repeater on 448.675. The WA2PNU packet antennas have been reinstalled.

General Meetings

January 13, 2011	June 9, 2011
February 10, 2011	September 8, 2011
March 10, 2011	October 13, 2011
April 14, 2011	November 10, 2011
May 12, 2011	December 8, 2011

Board Meeting

January 13, 2011	June 9, 2011
February 10, 2011	September 8, 2011
March 10, 2011	October 13, 2011
April 14, 2011	November 10, 2011
May 12, 2011	December 8, 2011

GOOD AND WELFARE

Attention members: Our Good and Welfare Chairperson is Helene Lazarus (XYL of Arnie N2PLS). Please inform her (499-2837) of news about club members so she may make submissions to this publication.

ARES/RACES NET

Attention to all members: The weekly ARES/RACES net is active, meeting every Monday evening at 1930 on 147.210. Check in with our net control, John Allocca WB2LUA, at www.wb2lua.com to learn of any ARES/RACES news and to help maintain your proficiency in emergency communications procedures.

2012 DUES SCHEDULE

Regular Membership: $35.00
Members Age 65 or older: $25.00
Members Age 17 or less: $25.00
Disabled Members: $25.00
Living Outside Club's Operating Sphere: $15.00

Add $10.00 if you want QSX via U.S. Mail

Make your check payable to: LARC

And Mail to:
Larkfield Amateur Radio Club Inc.
PO Box 1450
Huntington, NY 11743

VE SESSION SATURDAY JAN. 14th
HUNTINGTON TOWN HALL
100 MAIN ST., ROOM 114
WALK-Ins WELCOME

Team Liaison is Ed KC2E. Contact is Stan N2YKT. Fee is $15. All elements will be offered and exams start at 9:00AM.
Must have 2 forms of ID, one of which includes a photo. If upgrading, bring an original and a copy of your license and an original of any CSCEs.

The next Executive Board and General meetings will be on Thursday, December 8th at 7:00PM and 7:30PM, respectively.

The weekly Larkfield Info Chat is on Mondays at 8:00 PM on the 147.210 repeater (+0.6 MHz offset, 136.5 tone) or on 147.420 MHz simplex if the repeater is down.

Larkfield Amateur Radio Club, Inc.
Post Office Box 1450
Huntington, NY 11743