NVARC
Nashoba Valley
Amateur Radio Club

SIGNAL

de N1NC

June 2009 Volume 18 Number 6

This Month's Meeting

This month's meeting program will be by Mike Neilsen, the ARRL EMA Section Manager. We will also have Bruce K1BG talk about Field Day.

Next club meeting is Thursday June 18th.

REMINDER – At the April Board meeting it was decided to change the Board meeting to the first Thursday of the month instead of the second Thursday. This is to allow the Board more time to address issues between the Board meeting and the Regular meeting. As always these meetings are open to all members.

The road clean up will be Sunday June 21st

Meeting site info and maps on the back page and the NVARC Website.

Field Day June 27-29

Remember the possible loss of the Pepperell Community Center for meetings. There should be more information the end of June after a vote on June 29th. We will pass it along via email and newsletters.

Wear your badge to the meeting so new members can tell your name and you can introduce yourself to them. It may be worth your while.

Need a Ride?

Do you need a ride to the club meetings? Do you know someone who does? If you do please contact Bob W1XP 978-448-6559 and leave a message. We'll see that you get to the meeting.

Parker Classic Road Race

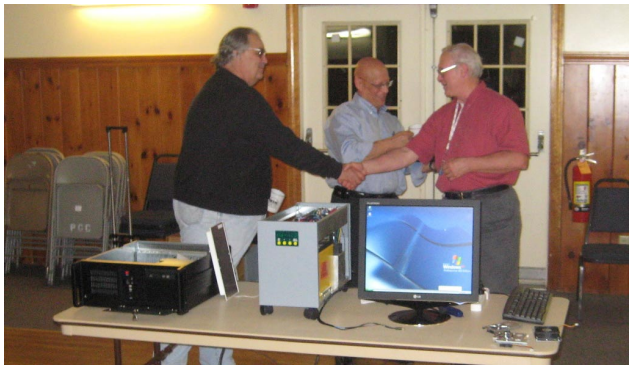
Sunday May 17 marked the 14th annual Parker Classic Road Race on Devens. Eight hams from NVARC and MARA braved the light rain leading up to the Two-mile race. The weather improved to nearly pleasant by the start of the Five-mile race, and held for the rest of the afternoon.

Thanks go out to Gary K1YTS, Nancy KB1KEF, Ray KB1LRL, Barry W1HFN, Stan KD1LE, Larry KB1ESR, John KK1X, and Ralph KD1SM, who served as Net Control.

The Race Committee provided T-shirts and lunch for the hams as a thank-you.

Last Month's Meeting

Last month's meeting presentation was by Grady Research. They presented on a battery backup system for a standard PC. This system is unlike traditional UPS's that supply 115 volts from an inverter running on batteries. This system replaces the 115 PC power supply and provides the necessary PC voltages directly from the battery.



The UPS is composed of a module that replaces the computer power supply and the battery module center.

Stan maintains a frequency list for programming FT8900's that covers all locally used frequencies as well as those used for many public service events. He brought his computer with the software to the meeting and programmed FT8900's that members brought to the meeting with the latest frequency set.

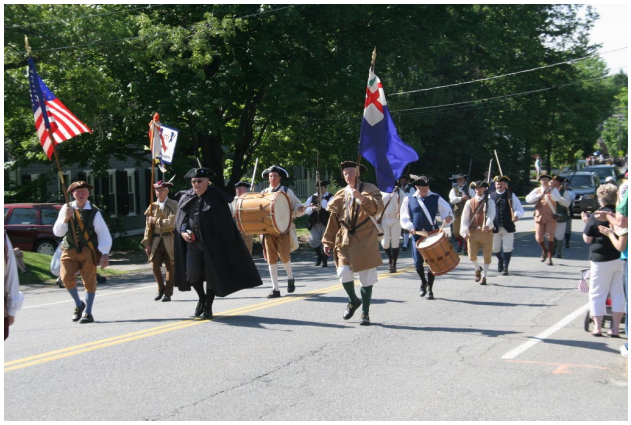
In attendance:

Dwight AA1MT, John Grady, Bruce K1BG, Tom K1NNJ, Gary K1YTS, Stan KD1LE, Ralph KD1SM, John KK1X, Les N1SV, Jim N8VIM, Darryl WA1GON, Rod WA1TAC, Earl WR1Y, Guest Mike Giallongo

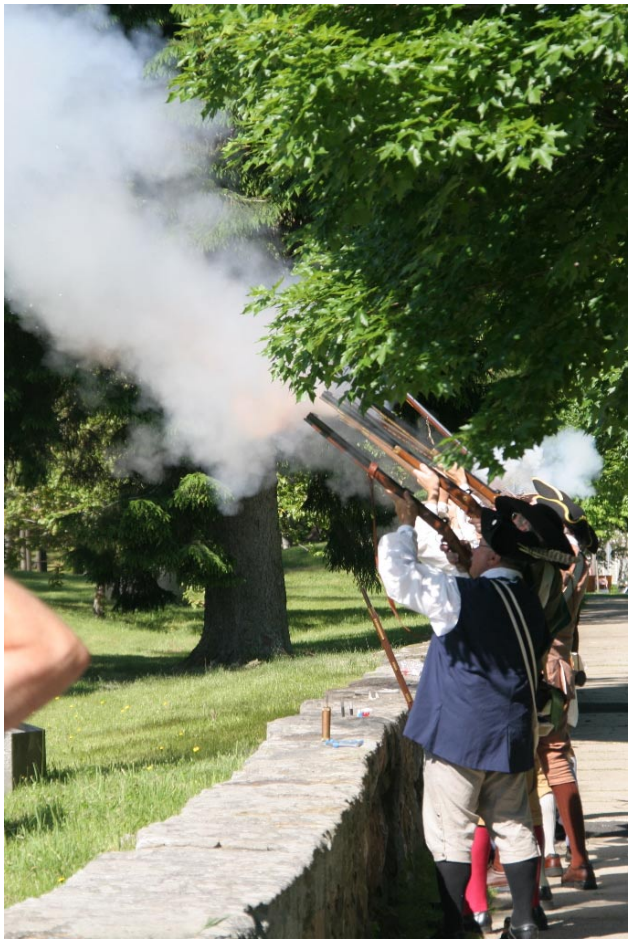
Groton Memorial Day Parade

Several members of NVARC provided public address systems at multiple locations along the parade route and at the Groton Cemetery where more extensive ceremonies were held.

Above Bob AB1CV Parade Marshal and Lt. Cullen the Officer in Charge.



The parade prepares to enter the Old Burying Ground from Hollis St.



The Minutemen fire a salute at the Old Burying Ground.

Stan KD1LE provided a PA system at the Fireman's Memorial on Main St. and Sawyer Common on Hollis St. Ralph KD1SM provided a PA system at Legion Hall for parade organization and for the parade stop at the Old Burying Ground. Earl WR1Y provided a PA system at the cemetery which was the last stop for the parade.

Longsjo

Longsjo Needs You!

This year is a special year for the Fitchburg Longsjo Classic. It is the 50th running of this internationally-known pro-level bicycle race. Some well-known racers in the international circuit are expected to participate.

For over 10 years local Amateur Radio Emergency Service volunteers have provided logistics, health, and safety communications for the Race.

We cover the Wachusett Mountain Road Race and the Fitchburg Downtown Criterium. This year these two events are on Saturday, July 4th and Sunday, July 5th.

One significant change has been made to the Wachusett Mountain Road Race course for this year. Traditionally the Road Race finish line has been at the summit of Mt. Wachusett. The summit road will be impassable during this year's race due to construction aftermath of the December ice storm.

The finish line this year will be in Princeton Center. The Race organizers therefore are expecting a very large spectator turnout in Princeton Center. We may need additional Radio support for this reason.

This is always an exciting event and very good public relations for Amateur Radio. The US Cycling Federation officials each year express their great appreciation for the communications support provided by the Hams.

14 radio operators are needed for the Road Race and 6 for the Criterium. If you are interested in helping, please contact Ralph KD1SM at arrl.net.

PSLIST

Every event needs communications volunteers

July
3-5 Longsjo Classic, Ralph KD1SM
25 Alzheimer's Memory Ride, Ralph KD1SM

We are starting to fill in the 2009 events calendar. Seen www.n1nc.org/Events

Board Meeting

John reported on Parker Classic Race.

We are planning on a club cookout. Need a location

Stan received request for support for Pepperell 4 of July Parade.

Joel reported on band conditions and updated FEMA Courses.

Stan reported on potential changes in the MARS Programs.

The Board meetings will now be the first Thursday of the month to allow the Board more time to deal with issues that need to be addressed prior to the regular meeting.

Though we have moved the board meeting to the first Thursday of the month the newsletter will be closed and published as before.

Discussion of upcoming meeting presentations.

Ralph submitted the Treasurers report for the newsletter. Starting up the book raffle with some new books.

Need more local content needed for the newsletter. They can be general interest, reviews of equipment, stories on activities, or subjects like how you got into Ham Radio.

We held our first Road Cleanup of the year in April. There were eight participants which is a good number.

Brownies were served.

In attendance were Ralph KD1SM, Joel W1JMM, Skip K1NKR, Stan KD1LE, John KK1X.

Adopt A Highway

Sunday May 24 was our second road cleanup. There were six participants.

While we were on the cleanup Erik Piip KA1RV/ES5RV called. He said he would be in town next week. I hope to get to see him. Erik is a former NVARC President. He moved to Estonia a few years ago.

We picket up 12 bags of trash.

Thanks to the following members who helped at the cleanup.

Jim AA1PO, Stan KD1LE, Ralph KD1SM, Larry KB1ESR, Earl WR1Y, John KK1X.

Our next cleanup is June 21st.

We need a minimum of six people by MassHighways rules for a cleanup. We would like eight as that allows us to cover our 2 miles in an hour.

Stan

Treasurers Report

Income for May was $80 in membership renewals, $5.58 in bank interest, and $10 donated from NEARFest sales. Expenses were $16.80 for newsletter postage leaving a net income of $78.78 for the month.

Current balances:

General fund	$4,350.58
Community fund	$2,699.41

Many membership renewals became due in April. Is yours among them? If you don't know, please check the roster circulated at the monthly meeting or ask me. As of 4 June we have 49 members who are current with their dues and 16 renewals outstanding.

Remember, too, that the Club gets a commission on any new ARRL memberships or membership renewals that are submitted through Ralph.

Checks should be made payable to NVARC so that our commission can be deducted before we forward your membership to Newington.

Ralph KD1SM

FT8900 Programming

I have updated the “standard” frequency matrix for the FT8900 mobile radio programming software. The current frequency matrix is dated 090304. If your radio has been programmed in the last few years it has the date code in the alphanumeric display of memory location number one. If you tune to memory one and press the LOW button for two seconds the numeric frequency display will change to alphanumeric. The date code is year, month, and day. The previous version was 080225.

If you cannot select memory number one it means you programmed the radio yourself or it was programmed with the standard matrix before 2007.

I will bring the computer and programming cables to the meeting. If you want to get your rig memory updated bring it and the power cable.

ARRL Letter

HIGH SPEED TELEGRAPHY ON THE WORLD STAGE

The October 1936 issue of QST reported on the first official "Amateur Code Speed Contest" ever held. Eugene A. Hubbell, W9ERU, took home the silver trophy with his wining speed of 52.2 words per minute. Held at the ARRL Central Division Convention that year, the contest required operators to decipher plain language text for two minute intervals that ranged in speed from 25 to 52.7 words per minute. "Only bona-fide amateurs, holding at least an amateur operator's license, were eligible" to compete in the contest, the article stated <http://p1k.arrl.org/cgi-bin/topdf.cgi?id=18072&pub=qst>.

Fast forward to 1995. Competitors from 15 countries on three continents traveled to Siofok, Hungary to show off their CW operating skills in the first IARU High Speed Telegraphy (HST) World Championship. According to Barry Kutner, W2UP, HST has long been considered a sport in Europe, especially Eastern Europe, similar to chess or an Olympic sport. Kutner was the sole US representative at the 2005 HST World Championship in Macedonia. In 2009, he is leading a team of seven this September to Obzor, Bulgaria for the Ninth High Speed Telegraphy IARU World Championship <http://www.hst2009.eu/>.

Kutner said that most of the participating IARU Member-Societies hold a national competition in their country, seeking members to field and sponsor a team to the World Championship. "In some of the

eastern European countries, where they take this very seriously, there are team and/or individual coaches, too," he said. Competitors must be licensed Amateur Radio operators, except entrants in the younger categories may be SWLs. The IARU HST World Championships follow rules set forth by the IARU Region 1 High Speed Telegraphy Working Group.
<http://www.darc.de/referate/dx/archives/hstrules.pdf>

In the US, Kutner said those who wish to participate in the World Championship do so at their own expense. "In past years, there has either been one -- myself in 2005 and Ilya Kleyman in 2007 -- or no US participants," he told the ARRL. "This year, we have a team!"

The US team consists of shortwave listener Brana Kleyman (category A, women 16 and younger); Kody Low, KB3RUP, and Cal Darula, K0DXC (category B, men 16 and younger); Ilya Kleyman, KE7OPG, and Ken Low, NV1P (category H, men age 40-49), and Gary Schmidt, W5ZL, and Kutner (Category I, men 50 and older). "The 2 OM categories are full," Kutner said. "But we are always looking for younger hams, especially young ladies!" There are nine categories, and each country can only send two competitors per category, for a maximum of 18 competitors.

There are three main competitive events at HST meets: Transmitting, receiving and receiving Amateur Radio call signs via RUFZxp <http://www.rufzxp.net/>; the sending and receiving portions of the competition are referred to as the Radioamateur Practicing Tests (RPT). There is also a pileup competition.

In the RPT, random letters and numbers are sent via Morse code – five characters at a time -- at a high speed. Separate competitions are held for the reception of only the 26 letters of the Latin alphabet, only the 10 Arabic numerals or a mixed content of letters, numbers and some punctuation symbols. Competitors may choose to record the text by hand on paper or by typing on a computer keyboard. The competition starts with one minute of transmission sent at an initial speed defined for the entry category (usually 50 letters per minute for juniors and 80 letters per minute for the other age categories). After each test, the competitors' copy is judged for errors. Subsequent tests are each conducted at an increased speed until no competitor remains who can copy the text without excessive error.

The transmission tests require competitors to send five character groups in Morse code as fast as possible. Competitors send a printed message of five character groups at a specific speed that is judged for its accuracy by a panel of referees. Like the receiving tests, there are separate competitions for sending five character groups of only letters, only numbers or a mixed content of letters, numbers and some punctuation symbols.

Kutner noted that 100 letters per minute is equivalent to 25 words per minute and 100 numbers per minute is equal to 36 words per minute. The mixed category of 100 letters, numbers and punctuation is equal to 29 words per minute.

The Amateur Radio Call Sign Receiving Test uses a software program called RufzXP that generates a score for each competitor. Rufz is the abbreviation of the German word Rufzeichen-Horen that means "listening of call signs." In RufzXP, competitors listen to an Amateur Radio call sign sent in Morse code and must enter that call sign with the computer keyboard. If the competitor types in the call sign correctly, their score improves, and the speed at which the program sends subsequent call signs increases. If the competitor types in the call sign incorrectly, the score is penalized and the speed decreases. Only one call sign is sent at a time and the event continues for a fixed number of call signs (usually 50). Competitors can choose the initial speed at which the program sends the Morse code and the winner is the competitor with the highest generated score.

There is also a Pileup Trainer Test that simulates a pileup situation on the air -- numerous stations attempt to establish two-way contact with one particular station at the same time. This competition uses a software program called MorseRunner <http://www.dxatlas.com/MorseRunner/>. In this test, more than one amateur radio call sign is sent at a time via Morse code that is generated at different audio frequencies and speeds, timed to overlap each other. Competitors must record as many of the call signs as they can during a fixed period of time. They may choose to do this either by recording the call signs by hand on paper or by typing them in with a computer keyboard. The winner is the competitor with the most correctly recorded call signs.

Kutner said that each US team member practices on an individual basis, using both on-the-air and computer generated CW. As the team gears up for Bulgaria, "we are in frequent contact via e-mail, exchanging tips and ideas," he said.

HST has definitely come a long way since 1936 when Hubbell dazzled the crowds with 52.2 words per minute; competitors at the IARU HST World Championships consistently have speeds of more than 500 characters per minute -- 100 words per minute. While it's too late to join the 2009 US team,

it's not too early to think about upcoming events. If you are able to copy and/or send CW at dizzying speeds, why not think about attending the next IARU HST World Championship? For more information on HST events, contact Kutner via e-mail <w2up@arrl.net>.

NASA, NOAA RELEASES NEW PREDICTIONS FOR SOLAR CYCLE 24

An international panel of experts -- led by the National Oceanic and Atmospheric Administration (NOAA) and sponsored by NASA -- has released a new prediction for the next solar cycle: Solar Cycle 24 will peak in May 2013 with a below-average number of sunspots <http://science.nasa.gov/headlines/y2009/29may_noaaprediction.htm?list13 00638>. "If our prediction is correct, Solar Cycle 24 will have a peak sunspot number of 90, the lowest of any cycle since 1928 when Solar Cycle 16 peaked at 78," said panel chairman Doug Biesecker of NOAA's Space Weather Prediction Center. This report clarifies a NOAA report from May 2009 that stated that Solar Cycle 24 would bring "90 sunspots per day on average" <http://www.noaanews.noaa.gov/stories2009/20090508_solarstorm.html>.

The latest forecast revises a prediction issued in 2007 <http://www.arrl.org/news/stories/2008/01/07/100/>. At that time, a sharply divided panel believed solar minimum would come in March 2008 followed by either a strong solar maximum in 2011, or a weak solar maximum in 2012. "It turns out that none of our models were totally correct," said Dean Pesnell of the Goddard Space Flight Center and NASA's lead representative on the panel. "The Sun is behaving in an unexpected and very interesting way."

In 2007, experts varied in their predictions on when the solar cycle would peak and how strong it would be. In April of that year, NOAA, in coordination with an international panel of solar experts, predicted that the next 11-year cycle of solar storms "would start in March 2008, plus or minus six months, and peak in late 2011 or mid-2012" <http://www.swpc.noaa.gov/SolarCycle/>. In the cycle forecast issued in April 2007, half of the panel predicted a "moderately strong cycle of 140 sunspots, plus or minus 20, expected to peak in October 2011. The other half predicted a moderately weak cycle of 90 sunspots, plus or minus 10, peaking in August 2012. An average solar cycle ranges from 75 to 155 sunspots. The late decline of Cycle 23 has helped shift the panel away from its earlier leaning toward a strong Cycle 24. The group is evenly split between a strong and a weak cycle."

At a meeting of the American Geophysical Union in San Francisco in December 2007, David Hathaway of NASA's Marshall Space Flight Center, along with colleague Robert Wilson, said that Solar Cycle 24 "looks like it's going to be one of the most intense cycles since record-keeping began almost 400 years ago." They said they believe the next solar maximum should peak around 2010 with a sunspot number of 160, plus or minus 25. "This would make it one of the strongest solar cycles of the past 50 years -- which is to say, one of the strongest in recorded history." Four of the five biggest cycles on record have come in the past 50 years. "Cycle 24 should fit right into that pattern," Hathaway said.

Right now -- June 2009 -- the solar cycle is in a valley, the deepest of the past century. In 2008 and 2009, the Sun showed some of the lowest sunspot counts on record, as well as weak solar winds and a low solar irradiance, going more than two years without a significant solar flare. "In our professional careers, we've never seen anything quite like it," Pesnell said. "Solar minimum has lasted far beyond the date we predicted in 2007."

In recent months, however, Pesnell said that the Sun has begun to show some small signs of life: Small sunspots and "proto-sunspots" are popping up with increasing frequency. Enormous currents of plasma on the Sun's surface are gaining strength and slowly drifting toward its equator. Radio astronomers have detected a tiny but significant uptick in solar radio emissions. All these things are precursors of an awakening Solar Cycle 24 and form the basis for the panel's new, almost unanimous forecast.

Pesnell cautioned optimism, telling the ARRL that there is an "error bar of ± 20." This means Solar Cycle 24's sunspot number could be as high as 110, or as low as 70. "Based upon my own personal research, I don't think we'll see 90 [sunspots in Solar Cycle 24]," he said.

When asked if such a low number foretold the beginnings of a Maunder Minimum <http://en.wikipedia.org/wiki/Maunder_minimum>, Pesnell said that a Maunder Minimum takes several cycles to appear: "Sunspots [in solar cycles] leading up to the Maunder Minimum took several cycles to disappear. I really can't predict what will happen in Solar Cycle 25. What we're seeing now is something that looks like a sunspot, but it looks as if someone has come along and 'stomped' on it, creating a multitude of little things. We don't have a name for this and we've never seen anything like it before."

There could be more surprises, panelists acknowledge -- and more revisions to the forecast. "Go ahead and mark your calendar for May 2013," Pesnell said. "But use a pencil." -- Some information from NASA

ARRL FIELD DAY TIPS AND TECHNIQUES THAT EVERYONE CAN USE

Many amateurs treat ARRL Field Day (June 27-28) as a contest, even though it isn't one <http://www.arrl.org/fieldday>. But if your idea of Field Day fun is to go for the highest score possible, ARRL Contest Branch Manager Sean Kutzko, KX9X, offered the following suggestions at the ARRL Field Day Forum at the 2009 Dayton Hamvention.

1) You will get many more stations in your log by calling CQ than by tuning the dial and answering CQs; however, if you're calling CQ and not getting any replies, keep calling. Most major contesters call CQ for several minutes at a time before giving up. Giving up after three or four CQs is giving up too soon.

2) Keep your CQs short and to the point: "CQ Field Day, CQ Field Day, Whiskey-One-Alfa-Whiskey, Field Day." Wait about 5 seconds between CQs -- this gives stations enough time to answer you.

3) Use standard phonetics. "Cute" phonetics don't always get through and they can confuse newer operators.

4) When working a station, you should give your exchange information only once and keep it simple. "Whiskey-One-Alfa-Whiskey, copy three Foxtrot Connecticut, QSL?" If they didn't get all of the exchange, they will ask for a repeat.

5) If you are running a pileup: Once you have pulled a call out of the pileup, give your exchange information first. Here's an example: "Whiskey-One-Alfa-Whiskey, copy 3F Connecticut, QSL?" Don't ask for the calling station's information first -- this will reduce any sense of rhythm and timing in the pileup.

6) If you get a pileup of stations and can't make out an entire call, listen for one letter and ask for it specifically: "The station with Delta only, go ahead."

7) When you get the other station's information, keep your acknowledgment simple. "QSL, thanks, QRZ Field Day from Whiskey-One-Alfa-Whiskey."

8) Find a comfortable pace for you and maintain that pace. You will tire quickly if you are screaming into the microphone or trying to work stations too quickly. This leads to inefficiency.

9) Use a headset with a boom microphone and a foot switch -- this frees up your hands to log QSOs. Writing or typing with a mike in your hand slows you down.

10) Go for as many bonus points as you possibly can. Numerous opportunities exist, from copying the Field Day message to sending traffic to using natural power for QSOs.

These tips should help maximize your score on Field Day. Remember: No matter how you choose to enjoy Field Day, maximize your fun, however you define it.

THE ARRL TRIPLE PLAY AWARD: A WORLDWIDE EVENT!

The ARRL Triple Play Award (TPA) -- introduced January 1, 2009 <http://www.arrl.org/news/stories/2008/12/05/10490/> -- is available to all amateurs worldwide who confirm QSOs with each of the 50 states on voice, CW and digital modes via Logbook of the World (LoTW) <http://www.arrl.org/lotw>. Not even six months since its inception, the Triple Play Award has been awarded to 269 hams around the world.

The first recipient was Dave Strout, W2YC, of Williamstown, New Jersey. Strout achieved this milestone on January 15. The very next day, Jeff Wheeler, W7JW, of Plymouth, Michigan, received TPA #2.

But the TPA is not limited to US hams. On February 11, Scotland's Cris Henderson, GM4FAM, was the first ham outside the US to receive the TPA award, #158. Jose Vicente Pinto, YV6BTF, of Venezuela, received TPA #163, making him the first South American amateur to achieve the award. Hams in many countries, such as Brazil, France, Belgium, Spain, Germany, Poland, Colombia and Mexico, have claimed the Triple Play Award.

"An side effect of the Triple Play Award has been the increased issuance of basic Worked All States (WAS) <http://www.arrl.org/awards/was/> awards for Phone, CW, Digital and Basic modes," said ARRL Awards Manager Bill Moore, NC1L. "Comments on the Triple Play Award have been very positive, reflecting a renewed interest in the challenge -- and of course, the fun! -- that ARRL awards continue to provide. The Triple Play Award is the first of what we hope to be many more LoTW-only awards in the future."

The Triple Play Award is a one-time award -- once you have made the required 150 confirmed contacts via LoTW, you're done. "Even so," ARRL Chief Executive Officer David Sumner, K1ZZ, said, "there are many possible variations on the theme. You can try to be the first (or at least the first on your block) or you can set your own pace. Think it's too easy? Limit yourself to QRP while operating your favorite mode (or all three). Maybe you prefer to be the quarry; it will quickly emerge which states are the most difficult to find, offering opportunities to earn the gratitude of your mates by activating the ones you can get to with your portable or mobile rig."

If you haven't yet begun trying for the Triple Play Award, why not start? There are still quite a few State QSO Parties this year, and the DX contest season starts in a few months. According to Sumner, contesters are among the most loyal devotees of LoTW. Once you begin, you might find that the pursuit can be terribly addictive.

The rules for the Triple Play Award state that two-way communication must be established on the amateur bands with each state on each mode (the District of Columbia may be counted for Maryland). There is no minimum signal report required. Contacts must be made from the same location, or from locations no two of which are more than 50 miles apart. Club station applicants must include their club name and call sign of the club station or trustee on their application. The Triple Play Award will be issued on sequentially numbered certificates, starting with #1, as determined by the time stamp of the electronic application as submitted via LoTW. There are no endorsements for this award.

Contacts made through repeater devices or any other power relay method may not be used for WAS confirmation (a separate WAS award is available for satellite contacts). All stations contacted must be land stations; contacts with ships, anchored or otherwise, and aircraft, cannot be counted. The only exception to this rule is permanently docked exhibition ships (such as the Queen Mary) and other historic ships will be considered land based.

Triple Play Award applicants who reside in the US must be ARRL members to be eligible to receive the award. DX stations do not need to be ARRL members. All bands -- with the exception of 60 meters -- may be used in pursuit of the Triple Play Award.

2009 Flea Markets/Conventions

June
6 Bangor Hamfest
20 NARLFEST Newington CT
21 MIT

July
19 MIT
25 Yankee Peddler Hamfest, North Haven CT

August
8 Piscataquis ARC, St Albans ME
15 St Albans ARC, Swanton VT
16 MIT

September
12 Augusta ARA, Windsor ME
13 Western CT Hamfest, Newtown CT
19 76 Auction and Flea Market, Forestdale RI
20 MIT

October
11
Connecticut State Convention
18 MIT

November
FARAFest Falmouth ARA, Bourne MA

Advertisements

Contest, DXpeditions and Special Events

The information for a DXpedition can be quite detailed and may include bands, dates, number of stations, and times of day they plan to work certain continents so I can not list it all here. But if a country or prefix is of interest you can get more information at www.425dxn.org.

Contests 2009

June
27-28 ARRL Field Day

July
11-12 IARU HF World Championships

August
1-2 ARRL UHF Contest
15-16 ARRL 10 GHz and UP Contest

Sept
12-13 ARRL September VHF QSO Party
19-20 ARRL 10 GHz and Up Contest

October
10-11 ARRL International EMD Competition

November
7-8 ARRL November Sweepstakes CW
21-22 ARRL November Sweepstakes Phone

December
4-6 ARRL 160 Meter Contest
5-6 ARRL International EME Competition
12-13 ARRL 10 Meter Contest

NVARC

Nashoba Valley
Amateur Radio Club

PO Box # 900
Pepperell Mass 01463-0900

http://www.n1nc.org/

President: Stan Pozerski KD1LE
Vice President: Peter Nordberg N1ZRG
Secretary: John Griswold KK1X
Treasurer: Ralph Swick KD1SM
Board Members:
Bob Reif: W1XP 2007-2010
Skip Youngberg K1NKR 2008-2011
Joel Magid W1JMM 2009-2012

Editor: Stan Pozerski KD1LE
Emergency Coordinator: Larry Swezey KB1ESR
Photographer: Ralph Swick KD1SM
PIO: Dave Peabody N1MNX
Librarian: Peter Nordberg N1ZRG
Property Master: John Griswold KK1X
N1NC Trustee: Bruce Blain K1BG
Meetings are held on the 3rd Thursday of the month
7:30 p.m. - Pepperell Community Ctr.
Talk-in 146.490 simplex
442.900 + 100Hz Repeater battery power
147.345 + 100 Hz Repeater
53.890 – 100Hz Repeater battery power
This newsletter is published monthly. Submissions, corrections and inquiries should be directed to the newsletter editor. Articles and graphics in most IBM-PC formats are OK.

Nashoba Valley Amateur Radio Club
PO Box 900
Pepperell, MA 01463-0900