NVARC
Nashoba Valley
Amateur Radio Club

# SIGNAL

de N1NC

October 2009 Volume 18 Number 10

## This Month's Meeting

This month's meeting program will be our annual QSL Card Sort for W1 QSL Bureau. We will have about 20,000 cards to sort.


Courtesy KD1SM

We will have the eight sorting boxes and will set up as soon after 7 PM as we can once the hall is available.

After we complete the sort you will be able to sort through the cards for your incoming cards if you have a one call. Pizza and soft drinks will be served afterwards.

The next road clean up will be Sunday October 18th. We will meet at the river common on 119 at 8:00 AM.

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.

Batteries for the NVARC Lantern Battery Challenge will be passed out at the meeting. You need to pay the treasurer before collecting your battery.

## In-Club Recognition Program

The Club Recognition Program is still in effect. Submissions are due by year end. See Skip K1NKR for more information or help.

Follow the membership link on the club homepage for more information.

## Last Month's Meeting

Last months meeting program was a presentation on the Red Cross Emergency Communications Response Vehicles by Ralph KD1SM. Ralph had pictures and explanations on the capability of the vehicles, how they are maintained and deployed.

As one of the trained and certified drivers and operators Ralph has regular duty keeping the vehicle ready to operate and deploy.


Courtesy KD1SM

Bruce K1BG, the Field Day Chairman, passed out Field Day pins to Field Day participants who were present at the meeting.

L-R back row Darryl WA1GON, Jim W1TRC, Peter N1ZRG, Bob W1XP (also for Karen KA1JVU), Bruce

K1BG, Jim N8VIM, front row Stan KD1LE, Ralph KD1SM, John KK1X (also for Peg).

At breakfast Bruce passed out additional Field Day pins to those present. Above Larry KB1ESR accepts pins for Cindy and himself.

Bob W1XP handed out the Lantern Battery Challenge rules and accepted applications and payment.

In attendance at the meeting were Bruce K1BG, Dennis K1LGQ, Leo K1LK, Gary K1YTS, Phil KB1JKL, Peter KB1LZH, Stan KD1LE, Ralph KD1SM, John KK1X, Peter N1ZRG, Jim N8VIM, Joel W1JMM, Peter W1LLB, Dick W1LTN, Jim W1TRC, Bob W1XP, Darryl WA1GON, Bob WA1SMI, Rod WA1TAC, and Earl WR1Y.

## NVARC Lantern Battery Challenge Tips


In a secure area of FoxFinder Industries NVARC Lantern Battery Challenge power sources are assembled, tested and serialized.

Operating suggestions

Ok, the Lantern Battery Challenge is about to start and for you people clever enough to sign up here are a few suggestions to help you have an enjoyable operating event.

Plan your activity.

Since the battery has a limited capacity, you want to choose your operating time so that you are likely to make contacts. Now how you do that is up to you, (part of the challenge) but choosing times when the band you are operating is likely to be open is a good start. I've had lots of fun with QRP at the end of a contest calling stations that are trying to make just one more contact. It is amazing what they can hear.

Operate to optimize battery life.

The battery, like most batteries likes to deliver it energy in spurts. This means that you will probably get many more hours of operation by using the radio for short sessions of operating a day, rather than on several long sessions. There are about 3300 hours available in the period from Oct. to March. You have plenty of time to run the battery down. The battery has a rated capacity of about 11 amp-hours. This is the capacity at low current drain spread over a long period of time. At 11 amps it will probably only last a few minutes. At one amp it will only last a few hours. The battery likes to give up its energy a sip at a time. This means that you want to give the battery a chance to recover between operating periods. At only 100 mills of drain the battery should last between 50 to 100 hours depending on how low a voltage the radio will work down to. What is likely to happen especially if you are trying to run more than a watt or so, is the increased current drain when you go to transmit will cause the battery voltage to drop below where the radio works properly. Giving the battery a rest may allow you to get more hours of operation. Batteries don't recover energy, but they do recover capacity (the ability to deliver energy it still has) by rest. So if you think the battery is exhausted, give it a few days rest and try again. Milking the last bits of energy out of the battery may provide many additional contacts.

I suggest that you unplug the battery from the radio when not in use. Some radios draw a small amount of current even when off. This small amount of current can amount to a lot of lost capacity over the period of the event. Also operate the radio only when you are active. Leaving the radio on when not in use will discharge the battery in quick order. There's no recharge in the Lantern Battery Challenge. Using head phones and turning down the brightness or

turning off the display in some radios will save current. Running lower power may not really save that much current. Measuring the battery current at different power output settings may be a worthwhile experiment when you set up you radio.

Signal quality

Signal quality may also be an issue, especially as the battery voltage approaches the point where the radio no longer operates. CW may start to have a chirp, and SSB may start to FM or become distorted. So listen to your signals with another receiver if possible or ask for reports. It was suggested that adding a shunt capacitor across the battery pack may be a good idea for radios that may not have internal storage or are sensitive to voltage changes. We are talking 10's to 100's of UF. If you find you need a capacitor and don't have something available see me. Note, charging a mega-farad capacitor on another power supply and placing it across the battery is not considered in the spirit of the Lantern Battery Challenge. J

Log and record keeping

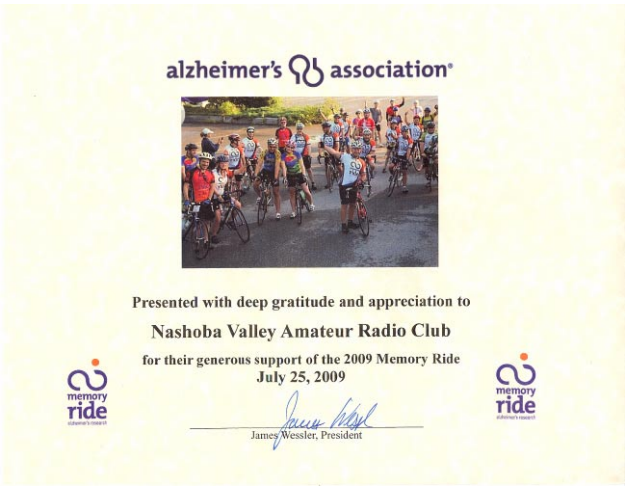
Besides keeping a contact log, it may be interesting to note the battery voltage as your activity takes place. Recording the battery voltage and radio current and operating time could be of value to planning future events. And possible emergency operation is always in the back of our mind. So it IS NOT a requirement but for those that feel a bit of a scientist adding this to your log will be welcome.

When the event is over besides the log entry I would like to see pictures and maybe a short write up on your operating experiences. I think besides the Signal there may be a possible article for a national publication. But write up any interesting experiences. Let's let others know what they are missing.

Till next time, 73 Bob W1XP

## Alzheimer's Association Letter

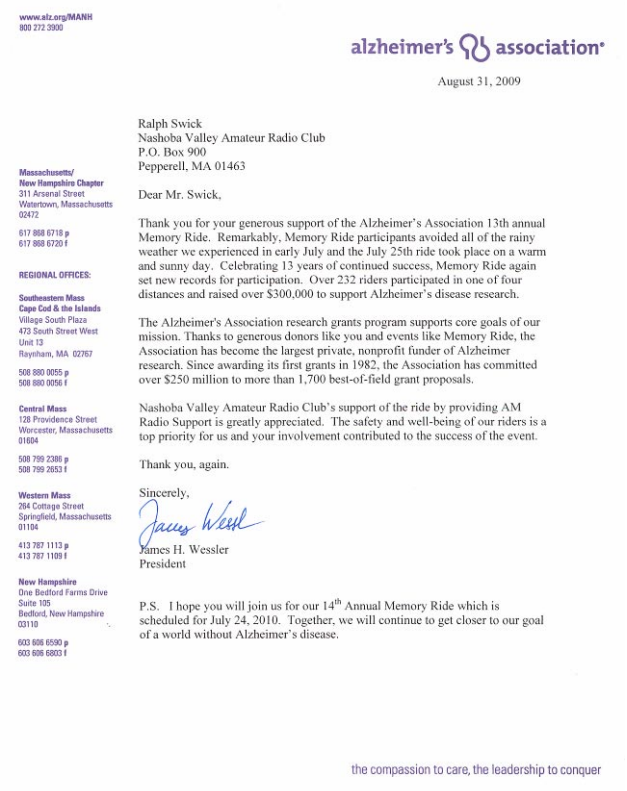
This is our second year supporting the Alzheimer's Memory Ride which is run from Devens. It is a great event and the organizers appreciate our support.




We received the above Certificate from the Alzheimer's Association for our support of the Memory Ride in July.

We also received the letter of appreciation below with additional information on the success of the event as their fund raiser.

It looks like this will be one of our annual public service events.



www.alz.org/MANH
800 272 3900

alzheimer's association

August 31, 2009

Ralph Swick
Nashoba Valley Amateur Radio Club
P.O. Box 900
Pepperell, MA 01463

Dear Mr. Swick,

Thank you for your generous support of the Alzheimer's Association 13th annual Memory Ride. Remarkably, Memory Ride participants avoided all of the rainy weather we experienced in early July and the July 25th ride took place on a warm and sunny day. Celebrating 13 years of continued success, Memory Ride again set new records for participation. Over 232 riders participated in one of four distances and raised over $300,000 to support Alzheimer's disease research.

The Alzheimer's Association research grants program supports core goals of our mission. Thanks to generous donors like you and events like Memory Ride, the Association has become the largest private, nonprofit funder of Alzheimer research. Since awarding its first grants in 1982, the Association has committed over $250 million to more than 1,700 best-of-field grant proposals.

Nashoba Valley Amateur Radio Club's support of the ride by providing AM Radio Support is greatly appreciated. The safety and well-being of our riders is a top priority for us and your involvement contributed to the success of the event.

Thank you, again.

Sincerely,

James H. Wessler
President

P.S. I hope you will join us for our 14th Annual Memory Ride which is scheduled for July 24, 2010. Together, we will continue to get closer to our goal of a world without Alzheimer's disease.

Massachusetts/
New Hampshire Chapter
311 Arsenal Street
Watertown, Massachusetts
02472

617 868 6718 p
617 868 6720 f

REGIONAL OFFICES:

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Cape Cod & the Islands
Village South Plaza
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Raynham, MA 02767

508 880 0055 p
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Worcester, Massachusetts
01604

508 799 2386 p
508 799 2653 f

Western Mass
264 Cottage Street
Springfield, Massachusetts
01104

413 787 1113 p
413 787 1109 f

New Hampshire
One Bedford Farms Drive
Suite 105
Bedford, New Hampshire
03110

603 606 6590 p
603 606 6803 f

the compassion to care, the leadership to conquer

## PSLIST

Every event needs communications volunteers

October
11 Boston BAA Half Marathon, Bob WA1IDA

See www.n1nc.org/Events for the latest

## Board Meeting

The Board approved funds for drinks and pizza for the QSL Card Sort meeting. Ralph will arrange the pizza and Stan will pick up the soda. Peter will help load sorting boxes prior to the meeting.

Discussion of upcoming meeting presentations. December meeting will be Homebrew and January will be Members Short Subjects so we need member participation.

Ralph submitted the Treasurers report for the newsletter.

John reported that bids have been received on a number of the auction items. Bids will close at the end of the October meeting.

Some award possibilities discussed.

In attendance were Ralph KD1SM, John KK1X, Stan KD1LE, Skip K1JKR, Peter N1ZRG.

## Adopt A Highway

Our September road cleanup was completed and was supported by Bruce K1BG, Ralph KD1SM, Bob W1XP, Stan KD1LE, and Earl WR1Y

We need to have eight participants so we can do a complete job. With that number to make quick work of the entire section we do. We are starting at 8:00 AM. The next road clean up will be Sunday October 18th.

## Treasurers Report

Income for September was $155 in membership renewals, $5.43 in bank interest, $2 from ARRL renewals, $28 from the book raffle, $90 for Lantern Battery Challenge batteries, and a $1 donation. Expenses were $17.60 for newsletter postage and $250 for the annual liability insurance premium leaving a net income of $13.83 for the month.

We sent a $100 donation from the Community Fund to the National Marrow Donor Program in memory of Den KD2S.

Current balances:

| | |
|---|---|
| General fund | $4,142.88 |
| Community fund | $2,849.41 |

As of 1 October we have 44 members who are current with their dues and 21 renewals outstanding. If you don't know your renewal date, please check the roster circulated at the monthly meeting or ask Ralph. Remember -- you must be current with your Club membership to have a bid considered for the equipment the Club is auctioning.

If your ARRL membership is ready for renewal, you can let Ralph mail it in for you and the Club will get a commission. If you're interested in joining the ARRL and do so through Ralph the Club will get a bigger commission. ARRL membership checks should be made payable to NVARC so that our commission can be deducted before we forward your membership to Newington.

Ralph KD1SM

## Property Master Report

The Property Master, John KK1X, reports the following NVARC equipment status.

9/18/2009

Call Sign Name Count Property Description

KD1LE Stan Pozerski 15 Trash stabbers (property of Mass Highways)

KD1LE Stan Pozerski 32 Safety Vests (property of MassHighways)

KD1LE Stan Pozerski 20 Pair White Cotton Gloves (property of MassHighways)

KD1SM Ralph Swick 1 Swingline M711 Stapler

KD1SM Ralph Swick 1 NVARC banner 3'x5'

KD1SM Ralph Swick 1 Trash stabbers (property of MassHighways)

WR1Y Earl Russell 1 Badge punch

WA1TAC Rod Hersh 1 Kenwood TS-451 transceiver SN 61000025

N1ZRG Peter Nordberg 1 Cushcraft R-7 antenna

WA1TAC Rod Hersh 1 Astron RS-35M power supply SN 9506184

N1ZRG Peter Nordberg 2 Code Practice Oscillators

KD1LE Stan Pozerski 1 Code Practice Oscillators

KD1LE Stan Pozerski 1 MFJ MFJ557 keyer

## The End Of Incandescent Bulbs

130 years or so ago Edison tested his first useable light bulbs. Not a bad run for a product.

I had written about this a few years back when it was far off dates and talk but the reality is upon us. On September 1st the European Union ban on incandescent light bulbs went into effect. This covers the 27 countries of the EU. Manufacturers can no longer produce bulbs 100 watts or larger. Smaller unfrosted bulbs will be phased out by wattage steps with 60 watt by 2011, 40 watt 2012 and the end being in 2016.

While this is the largest action to date Cuba, Australia, and Canada had already started the process of eliminating incandescent bulbs. In the US the law takes effect in 2012 with 100 watt and above bulbs and by 2014 the 40 watt will be eliminated.

The primary replacement is the Compact Fluorescent Lamp (CFL) that swirly glass tube on a base. Besides CFL's other energy saving bulbs are becoming available. When I last wrote LED bulbs were over $100 but Panasonic now has LED bulbs for about $40 and falling. These lamps are designed to have light color closer to that of incandescent lamps. Light color is one complaint about CFL lamps. The LED lamps use about 1/8th the power of incandescent lamps and would last 19 years if used 5-1/2 hours a day.

There was concern among Hams about the RF noise that early CFL lamps produced and its effect on HF communication. Personally our house has been primarily long tube fluorescent bulbs for 30 years and in the last few years almost all the incandescent bulbs in lamps and fixtures have been replaced with CFL bulbs. The biggest issues I have experienced is they are slow starting and to get to full output when cold in outdoor fixtures in the winter.

Another argument against CFL bulbs is they contain mercury. The Colorado Environment website says "…if all the 290 million CFL's sold in 2007 went to a landfill (versus recycled, as a worst case scenario), the overall release of mercury would add up to 0.13 metric tons of mercury." The EPA estimates that 104 tons of mercury is released each year primarily from coal fired electrical power plants. In a more direct relationship a coal power plant would emit more than five times the mercury powering the incandescent bulb that an equivalent CFL would replace.

Random Facts

A world wide shift from incandescent bulbs to CFL's would save the electricity of 270 500 Megawatt coal fired (or other) power plants.

The US government says replacing one 100 watt incandescent bulb with a 24 watt CFL, its lighting equivalent, would save over its lifetime the gasoline equivalent sufficient to drive a Toyota Prius from New York to San Francisco.

Stan KD1LE

## ARRL Letter

**NEW PRODUCT REVIEW TESTS TO BEGIN IN OCTOBER QST**

When you peruse the October issue of QST, you may notice a few extra lines in the Product Review data. "Here at the ARRL Lab, we strive to make our test procedures relevant to current technology and to new features common on today's transceivers," said ARRL Test Engineer Bob Allison, WB1GCM. "We continue to research ways to improve our testing and to develop ne w tests that will benefit our members. I hope you will find these new measurements useful in evaluating and comparing transceivers."

* Receiver Sensitivity (MDS) at 137 and 505 kHz Several countries now give amateurs permission to operate at and around 137 and 505 kHz. In the US, there is activity on 495 to 510 kHz by more than 20 stations around the country operating under the ARRL sponsored WD2XSH experimental license. In addition, there are other Part 15 experimental licensees operating in this range. The WD2XSH stations are on the air regularly, gathering propagation data. They are always looking for signal reports.

Allison said that with many of today's transceivers and a suitable antenna, you can listen for these experimental stations and submit reception reports via the Web site: "The new Product Review tests will

help identify transceivers suitable for use on these frequencies. With equipment built over the last 25 years ago or so, I've noticed a wide variety of available sensitivity, from terrible to quite good. Many receivers tune to 137 and 505 kHz; not all are proficient at receiving signals there. For you 'lowfers,' this measurement is for you."

* Spectral Sensitivity
Spectral sensitivity is the weakest signal that can be "seen" on a visual display of spectrum above and below the operating frequency. Often called a spectrum scope or panadapter, this feature is included on many mid-range and high-end transceivers. "This data represents the level, in dBm, at which the operator can see a signal poke up out of the display noise floor," Allison explained. "Although the measurement is somewhat subjective, it works out to be about 3 dB above the noise floor at the bottom of the display when the scope is adjusted to show 100 kHz of spectrum. With software-defined receivers (SDRs), such as the FLEX-3000, the sample rate is set to the highest setting."

* Audio Output THD at 1 V RMS Allison said that one of the ARRL Technical Advisors posed the question, "Who ever listens to their receiver at full volume?" Allison explained that audio output power and THD (total harmonic distortion) at the specified load impedances as specified by the manufacturer have been tested and reported. "Generally, the specification is at or near the maximum audio output the receiver is capable of," he said. "If severe hearing loss isn't an issue, we normally listen with the volume control set to around the 9 o'clock to 11 o'clock position on most transceivers and not with the control cranked to maximum."

Allison explained that distortion at normal listening levels is an important factor, especially when you are listening for an extended period of time: "High levels of distortion can make signals more difficult to understand and add to fatigue. We'll continue to measure and report how audio output power and THD compare to manufacturers' specifications, but we have added a new test intended to show distortion at more typical volume levels."

After testing several radios for comfort, Allison picked 1 V RMS as an output level for the new test. "It's an easy figure to remember," he said. "We will now also report THD at this level. Note that this test will appear with the next transceiver reviewed because the FLEX-3000 has only a low-level audio output and is dependent on external, user-supplied devices to amplify the audio to normal listening levels."

Look for these new tests beginning with October's QST Product Review featuring the FLEX-3000.

## NATIONAL SAFETY COUNCIL RESPONDS TO ARRL: NO EVIDENCE OF "SIGNIFICANT CRASH RISKS" WHILE OPERATING MOBILE

ARRL President Joel Harrison, W5ZN, wrote a letter to National Safety Council (NSC) President Janet Froetscher in July expressing the ARRL's concerns that Amateur Radio not become an unintended victim of the growing public debate over what to do about distracted drivers

Noting that there is significant evidence that talking on cell phones while driving poses crash risk four times that of other drivers, Froetscher observed that the NSC position calling for bans on the use of cell phones while driving is grounded in science. "We are not aware of evidence that using Amateur Radios while driving has significant crash risks," Froetscher wrote in her August 24 letter. "We also have no evidence that using two-way radios while driving poses significant crash risks. Until such time as compelling, peer-reviewed scientific research is presented that denotes significant risks associated with the use of Amateur Radios, two-way radios or other communication devices, the NSC does not support legislative bans or prohibition on their use."

Froetscher said that while "the specific risk of radio use while driving is unmeasured and likely does not approach that of cell phones, there indeed is some elevated risk to the drivers, their passengers and the public associated with 650,000 Amateur Radio operators who may not, at one time or another, not concentrate fully on their driving." She points out that the "best safety practice is to have one's full attention on their driving, their hands on the wheel and their eyes on the road. Drivers who engage in any activity that impairs any of these constitutes an increased risk."

ARRL Chief Executive Officer David Sumner, K1ZZ, said the ARRL "appreciates NSC President and CEO Janet Froetscher's clear statement that the NSC does not support legislative bans or prohibitions on the use of Amateur Radio while driving. We applaud the NSC for taking positions that are grounded in science. At the same time, all radio amateurs should heed her call to concentrate fully on driving while behind the wheel. It is possible to operate a motor vehicle safely while using Amateur Radio, but if it becomes a distraction we owe it those with whom we share the road, as well as to our passengers, to put safety first."

On January 30, 2009, the ARRL Executive Committee adopted the ARRL's Policy Statement on Mobile Amateur Radio Operation http://www.arrl.org/govrelations/MobileAmateurRadioPolicyStatement.pdf that states "Amateur Radio mobile operation is ubiquitous, and Amateur Radio emergency and public service communications, and other organized Amateur Radio communications activities and networks necessitate operation of equipment while some licensees are driving motor vehicles. Two-way radio use is dissimilar from full-duplex cellular telephone communications because the operator spends little time actually transmitting; the time spent listening is more similar to, and arguably less distracting than, listening to a broadcast radio, CD or MP3 player. There are no distinctions to be made between or among Amateur Radio, public safety land mobile radio, private land mobile radio or citizen's radio in terms of driver distraction. All are distinguishable from mobile cellular telephone communications in this respect. Nevertheless, ARRL encourages licensees to conduct Amateur communications from motor vehicles in a manner that does not detract from the safe and attentive operation of a motor vehicle at all times."

In his letter, Harrison explained to Froetscher that Amateur Radio operators provide essential emergency communications when regular communications channels are disrupted by disaster: "Through formal agreements with federal agencies, such as the National Weather Service, FEMA and private relief organizations, the Amateur Radio volunteers protect lives using their own equipment without compensation. The ability of hams to communicate and help protect the lives of those in danger would be strictly hindered if the federal, state and local governments to not ensure that Amateur Radio operators can continue the use of their mobile radios while on the road."

Froetscher replied that she "appreciate[s] your focus of Amateur Radio for emergency communications during disasters. I encourage ARRL to adopt best practices for the safe operation of vehicles that confines use of Amateur Radios while driving only to disaster emergencies."

The Policy Statement asserts that the ARRL "is aware of no evidence that [mobile] operation contributes to driver inattention. Quite the contrary: Radio amateurs are public service-minded individuals who utilize their radio-equipped motor vehicles to assist others, and they are focused on driving in the execution of that function."

## AMATEURS WITH GENERAL CLASS LICENSES TO BE GRANTED RECIPROCAL LICENSES IN SOME CEPT COUNTRIES

On Thursday, September 10, the Federal Communications Commission released a new Public Notice implementing changes in CEPT reciprocal operating arrangements for US citizens who hold an FCC-issued General, Advanced or Amateur Extra class Amateur Radio licenses. DA-09-2031 continues to allows US licensees "to utilize temporarily an amateur station in a European Conference of Postal and Telecommunications Administrations (CEPT) <http://www.cept.org/> country that has implemented certain recommendations with respect to the United States," subject to the regulations in that country and implements recent changes in the agreement <http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-09-2031A1.pdf>.

When an Amateur Radio operator with US citizenship holds an Advanced or Amateur Extra Class license, they continue to be granted CEPT Radio Amateur License privileges in accordance with CEPT Recommendation T/R 61-01 (as amended) <http://www.erodocdb.dk/docs/doc98/Official/word/TR6101%20off%20140905.d oc>. There is no change in reciprocity for those license classes. What has changed is that US citizens holding a General class license – who had lost all CEPT reciprocal privileges in 2008 -- are now granted CEPT Novice Radio Amateur License privileges in accordance with ECC Recommendation (05)06 (as amended) <http://www.erodocdb.dk/docs/doc98/Official/word/Rec0506.doc>.

The Public Notice states that while operating an amateur station in a CEPT country, the person "must have in his or her possession a copy of this Public Notice, proof of US citizenship and evidence of an FCC-issued Amateur Radio license. These documents must be shown to proper authorities upon request." The Public Notice can be found online on the FCC's Web site <http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-09-2031A1.pdf>.

According to ARRL Regulatory Information Manager Dan Henderson, N1ND, the changes in the CEPT reciprocity are a two-part result of changes made by the European Communications Office (ECO) in February 2008 when they re-examined US license class equivalency in comparison to their HAREC examination contest. "The result of that review was full CEPT reciprocity was only granted to US Amateur Extra and Advanced class licensees, leaving US General and Technician class operators without CEPT recip-

rocal privileges." The new public notice now reflects that change.

"In order to re-obtain at least some limited privileges under CEPT for those class licensees, the ARRL approached the FCC, asking that the US consider accepting ECC Recommendation (05)06" Henderson continued. "Reciprocal agreements between the US and other countries are actually diplomatic arrangements and come about through the agreements through the State Department. In the winter of 2008/2009, the FCC followed up on our request and contacted the US Department of State, asking that the US formally approach the ECO with a request to become party to the recommendation."

At its meeting in late spring 2009, Henderson said that the ECO working group that handles issues pertaining to Amateur Radio accepted the US request to join ECC Recommendation (05)06, and authorized US General Class licensees to operate under that recommendation's terms. It did not extend those privileges to US Technician class licensees.

Henderson stated that it is important to note two things about ECC Recommendation (05)06: "First, not all European countries have implemented this recommendation. Therefore, a US General class operator does not have reciprocal privileges in many countries, including popular US travel destinations like Italy, the UK or France. Second, as with any reciprocal operation, the band frequencies and privileges are those allowed by your host country -- they are not the frequencies and privileges extended by your FCC license. Travelers need to make sure they are familiar with the authorized privileges for the CEPT Novice Radio Amateur License if operating using ECC Recommendation (05)06 or T/R 61-01."

CEPT countries participating in CEPT Recommendation T/R 61-01 as of September 10, 2009 include Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark (including Greenland and the Faroe Islands), Estonia, Finland, France (including Corsica, Guadeloupe, French Guyana, Martinique, St Bartholomew, St Pierre and Miquelon, St Martin, Reunion and its Dependencies, Mayotte, French Antarctica, French Polynesia and Clipperton, New Caledonia, and Wallis and Futuna), Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Monaco, Netherlands, Netherlands Antilles, Norway, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine and the United Kingdom(including Northern Ireland, the Channel Islands and the Isle of Man).

CEPT countries participating in ECC Recommendation (05)06 as of September 10, 2009 are Belgium, Denmark (including Greenland and the Faroe Islands), Germany, Iceland, Liechtenstein, Luxembourg, Netherlands, Portugal, Romania, Slovak Republic, Slovenia and Switzerland.

**THE DOCTOR IS IN THE ARRL LETTER**

This week, ARRL Letter readers are in luck! The ARRL's very own Doctor, author of the popular QST column "The Doctor Is IN," answers a question from his mailbag:

Jim Walker, KN6TC, of Wiggins, Mississippi, asks: My repeater's PC controller to radio interface provider requires a "COS (Carrier Operated Signal) from the radio." The manufacturer states that this "greatly reduces drop out and falsing" that are sometimes experienced while using VOX receive/transmit control. It seems to be an alternate for VOX, but I have failed to receive an answer as to what it is in terms I can understand. Neither radio nor interface providers have responded to my e-mail questions.

The Doctor answers: Early repeaters were generally switched to transmit by a carrier operated relay, or COR. The relay would be actuated if the repeater receiver detected a carrier on frequency, as indicated by the opening of the squelch. This was a much more reliable switching mechanism than if the repeater transmit switching responded to detected speech (VOX), since VOX could toggle back and forth due to gaps in speech.

In the early days of repeaters, the equipment was constructed around vacuum tube and relay technology. Current technology is based on solid state devices -- including transistor switching -- that is more reliable than the earlier electromechanical relays. Thus, the more general term "COS" for Carrier Operated Signal, Carrier Operated Squelch or Carrier Operated Switch is often used instead of COR. For more information, check out this Web site <http://www.repeater-builder.com/tech-info/repeaterterm.html>.

Do you have a question or a problem? Send your questions via e-mail <doctor@arrl.org> or to "The Doctor," ARRL, 225 Main St, Newington, CT 06111 (no phone calls, please). Look for "The Doctor Is IN" every month in QST, the official journal of the ARRL.

## 2009 Flea Markets/Conventions

October
16-17 NEAR Fest, Deerfield NH, 18 MIT

November
FARAFest Falmouth ARA, Bourne MA

## Advertisements



## Upcoming Contests

**October:**

PA QSO Party 10/10 0001-2359z, AZ QSO Party 10/10 1600-1959z, North American Sprint RTTY 10/10 1700-2100z, Iowa QSO Party 10/10 1400-2300z, Stew Perry Topband Challenge 1500z 10/17 – 1500z 10/18, New York QSO Party 1800z 10/17 – 0600z 10/18, IL QSO Party 1700z 10/18 – 0119z 10/19, CQWW International SSB 0000z 10/24 – 2400z 10/25.

**November:**

ARRL Sweepstakes CW 2100z 11/7 – 0300z 11/9, KY QSO Party 1400z 11/14 – 0200z 11/15, ARRL Sweepstakes SSB 2100z 11/21 – 0300z 11/23, CQWW International DX CW 0000z 11/28 – 2400z 11/29.

**December:**

ARRL 160m 2200z 112/4 – 1600z 12/6, ARRL 10m 0000z 12/12 – 2400z 12/13, Stew Perry Topband Challenge 1500z 12/26 – 1500z 12/27.

For further info on these and other contests refer to; http://www.hornucopia.com/contestcal/index.html.


NVARC
Nashoba Valley
Amateur Radio Club
PO Box # 900
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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

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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.

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