



# CAARA Newsletter



AN ARRL AFFILIATED CLUB

JANUARY ISSUE- 2010



## President's Corner

by *Curtis AA3JE*

Well it's here. A brand new, never used, shiny new year. I started the year by organizing the "Boat Anchor" are in my basement. It took longer than I thought, since each radio or piece of gear down there had an associated memory. The GE AR-88 that was left on my doorstep with a note "Free to a good home", the Heathkit someone had put together with their feet, the WWII submarine regenerative receiver that led to my first hernia repair, the manual TR switch that led to my putting 100 watts into the input of my receiver..... golden memories all.

This is THE month for working contests. The sunspots are back (though not yet in full force), and CW is raging.... If you are not given to CW, how about PSK-31? Twenty watts on PSK 31 can work the world. Nothing builds character like antenna work in sub-zero temperatures (and a house full of company that you need to escape). Get active!

Things at the club are going very well. The "clean up" was a great success, and the Morse code classes are amazingly active due to the good efforts of Rick, WZ1B. We had an impromptu late December combination luncheon-fox hunt from which I have not yet had a report and we are getting ready to start work on the schedule for this year.

### SO NOW IS THE TIME.

If you have any ideas on a program you want to see this year, please contact any board member, call me or show up at any meeting in January. This is YOUR club, running YOUR activities, and we need YOUR input.

73 AA3JE- Curtis Wright

CAARA will be participating in the upcoming SPAR winter field day event which will be held on the last full weekend in January. SPAR is The Society for the Preservation of Amateur Radio. You may find more information by going to their website which is [www.spar-hams.org](http://www.spar-hams.org)

Field Day is perhaps the most popular of the many activities enjoyed by Amateurs. Every June the bands come alive with improvised signals proving the ability to respond to emergencies. The event also offers an opportunity for camaraderie and a chance to test ourselves in less than ideal circumstances, however, emergencies and natural disasters don't always happen in the summer. Winter winds, icy limbs and bitter cold replace the thunderstorms and blistering heat of summer. To test our abilities to operate in the winter, in 2007 SPAR established a Winter Field Day event and invited all Amateur Radio operators to participate. In both 2007 and 2008 the event was enjoyed by many and considered a success and has been designated an annual event to be held the **last full weekend each January**. Therefore it is time to issue the invitation for the Third Annual SPAR Winter Field Day!

The 2010 Winter Field Day will be held from 1700 UCT (12:00 noon EST) Saturday January 30, 2010 through 1700 UCT (12:00 noon EST) Sunday January 31, 2010. The object of the event is familiar to most Amateur Radio operators: set up emergency-style communications and make as many contacts as possible during the 24 hour period. The rules encourage as many contacts on as many bands and modes as possible, because during a real emergency, the most important factor is the ability to communicate, regardless of band, mode or distance.

Membership is free and open to all amateurs who want to encourage technical and operating skills. You can register by going to the [SPAR Forum](#) and registering, using your amateur callsign as your user name.

Please join with SPAR in promoting amateur radio and keeping our bands alive!

**CAARA Newsletter**  
**Cape Ann Amateur Radio Association**  
**6 Stanwood Street**  
**Gloucester, MA 01930**

CAARA Newsletter is a monthly publication of the Cape Ann Amateur Radio Association (CAARA). It is the policy of the editor to publish all material submitted by the membership provided such material is in good taste, relevant to amateur radio and of interest to CAARA members, and space is available. Material is accepted on a first come, first serve basis. Articles and other materials may be submitted by internet to Jon at k1tp@arrl.net. If possible, material should be in Word format. Material may also be submitted as hard copy to Jon-K1TP or any Club Officer.

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Jon Cunningham-Editor  
K1TP

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## Welcome to CAARA:

CAARA, an ARRL affiliated club, operates the 2 meter W1GLO repeater on 145.130 MHz with antennas located on the Cingular tower in the Blackburn Industrial Complex in Gloucester Massachusetts. It has an average effective radius of 60 miles, and serves Eastern Massachusetts, Cape Cod, Rhode Island, Southern New Hampshire, and maritime mobile stations. CAARA also operates the W1GLO repeater on 224.900. The W1RK 443.700 repeater with antennas located in Magnolia is owned and operated by club member Ralph Karcher and it too is available for club use.

The Association is one of the few amateur radio clubs that has its own clubhouse. Located at 6 Stanwood Street in Gloucester, it includes a permanent HF station with rotating beam and vertical antenna along with a 2 meter packet station and 2 meter voice and 220 MHz transceivers.

Amateur radio exams are held on the second Sunday of each month at 10:00AM at the CAARA clubhouse. Anyone who is considering a new license or an upgrade, is welcome to test with us. There is no pre-registration necessary. Contact the head of our VE team Bob Quinn if you have any questions about monthly testing.

Monthly member meetings are held on the first wednesday of each month at 7:30 PM except for July and August.

Each Sunday evening at 9:00pm, the club operates a 2 meter net on 145.130. This is an open and informal net which disseminates club news and prepares operators for emergency communications work. All are invited to check into the net as club membership is not a requirement.

**Hello to all...** It has been one year since the major destructive ice storm that had a major impact on the Northeast United States and portions of Southern New England and the NWS Taunton County Warning Area on December 11th-12th, 2008 with damaging ice in portions of Southern Maine, Central and Southern New Hampshire, Western, Central and interior Northeast Massachusetts, Northwest Connecticut and portions of New York and Vermont. It is important to remember the history of such a destructive storm. This special announcement has been written to recall the events of this serious storm over the region. It became clear by December 9th and 10th of 2008 that the region had the potential to see a destructive ice storm over the interior region of New York and New England. In addition, Southeast Massachusetts, portions of Rhode Island and Connecticut were in the path for heavy rainfall with the potential of flooding and strong to damaging winds in these areas. Just prior to the major destructive ice storm/nor'easter event, a period of strong to damaging winds affected portions of Eastern New England with mild temperatures. Winter Storm/Ice Storm Watches were issued on December 9th and 10th and these were upgraded to Winter Storm/Ice Storm Warnings. A Flood Watch and Wind Advisory/High Wind Warnings were also issued. The storm began to unfold on Thursday December 11th starting as plain rain and as the day wore on, the rain changed to freezing rain as colder air from Canada oozed southward and was wrapped into the major storm system. By early evening, locations began to get significant icing and reports gradually came in of ice storm damage starting as early as 7 PM that evening. By Midnight Friday December 12th, 2008, reports were rapidly increasing of significant icing damage in the NWS Taunton County Warning Area roughly from Amesbury to Haverhill to Hudson to Marlboro to Northboro and Worcester through Southwest Worcester County Massachusetts and northward through New Hampshire, Southern Maine and Southern Vermont particularly in the higher elevations. Power, Cable and phone outages mounted and! it became clear this would be one of the biggest storms to affect the region in recent memory. It is also noted that shortly after midnight, both local area Amateur Radio repeaters in Worcester County were off the air. Through the extraordinary efforts of the Worcester Emergency Communications Team (WECT), Amateur Operators activated the city of Worcester Emergency Operations Center (EOC) and

with their Amateur Radio station at nearly a 1500 foot elevation, they were able to contact stations directly and maintain contact with the National Weather Service Forecast Office in Taunton until the repeaters were brought back on the air later on Friday Morning December 12th. If it were not for the efforts of the WECT, it is quite likely critical data of what the storm was doing and how severe the storm was would not have been known until hours later. Many Amateur Operators woken up by the storm to the sound of exploding electrical transformers and the snapping and knock down of large branches and trees from the icing got on the air to report what they were seeing, even in cases ! where some Amateur Operators, lost whole antenna arrays and suffered severe damage on their own property that they needed to go address. It is this type of effort that made the level of reporting so extraordinary and drew praise from many agencies. At the height of the storm, over 500,000 people were without power in Massachusetts and New Hampshire. State of emergencies were declared in New Hampshire and Massachusetts where the ice storm had its most significant impact. Amateur Radio SKYWARN Operations active throughout the storm was the first means of providing critical situational awareness and disaster intelligence information to the National Weather Service Taunton Massachusetts and Gray Maine forecast offices, state emergency management in New Hampshire, Maine and Massachusetts and to FEMA Region 1. The first reports of significant damage and power outages were relayed by Amateur Radio Operators. Information was given by radio and other technological mechanisms to state emergency management officials. This information was also given to local media outlets. NWS Taunton SKYWARN Amateur Radio Operations were active for 27 straight hours. In addition to the major icing in the interior, SKYWARN operations had to focus on a fairly significant and widespread moderate river and stream flood event and a major urban flood event timed for the Friday Morning December 12th, 2008 rush hour. Winds gusted to near 60 MPH downing pockets of trees and power lines. Coastal flooding occurred along south coastal areas with vulnerable shore roads closed and some homes that were not elevated getting coastal storm surge flooding. Coastal Flood and Flood Warnings for urban areas and small streams were issued. River Flood Warnings also went into effect. This added an additional dynamic to storm reporting on top of the disaster situation that occurred with the

interior New England ice storm. Amateur Radio Operators staged an ARESMAT (Amateur Radio Emergency Services Mutual Aid Team) to Gardner Massachusetts with ARES in Eastern and Western Massachusetts active supporting local shelters in specific cities and towns. The ARESMAT that was staged to Gardner Massachusetts was the largest mutual aid team deployed since the September 11th, 2001 terrorist attacks in New York City. The North Shore ARES team affiliated with the North Shore Radio Association provided a significant amount of support to Gardner as did the South Shore ARES team. North Shore ARES Coordinators also served as the primary points of contact for staging people on the ARESMAT. Amateur Operators associated with RACES and Northern Middlesex County ARES supported local cities and towns severely affected by the ice storm in Chelmsford and Westford. Massachusetts Emergency Management Agency (MEMA) RACES (Radio Amateur Civil Emergency Services) were active at the State Emergency Operations Center and at Region 1 and Region 3/4 headquarters for almost a week due to the direct impacts of the ice storm. It is important to know that some weather/storm situations or non-weather situations can evolve into a disaster without advanced warning or without the realization that a 'run of the mill storm' can become such a significant disaster situation. The reporting of this data to NWS Forecast Offices and Emergency Management can be key in escalating the recovery response more rapidly when required and can help improve forecasts on severity of such storms or if conditions are not as severe as forecasted. This is why the SKYWARN program is such an important cog for both weather forecasting and Emergency Management. There is a significant amount of data that remains online from this destructive ice storm. Links to that data appear below: ARRL Web Articles: <http://www.arrl.org/news/stories/2008/12/15/10506/?nc=1> <http://www.arrl.org/news/stories/2008/12/18/10511/?nc=1> <http://ares.ema.arrl.org/node/441> Ice Storm Videos: <http://www.nsradio.org/video/features/icestorm08/rev2/> <http://www.nsradio.org/video/features/icestorm08/> Ice Storm Reports: [http://nsradio.org/ARES/icestorm\\_121208/index.htm](http://nsradio.org/ARES/icestorm_121208/index.htm) Local Storm Report, Public Information Statement and Special Weather Statement from NWS Taunton during that event: [http://www.wx1box.org/files/SPS\\_121208.pdf](http://www.wx1box.org/files/SPS_121208.pdf) [http://www.wx1box.org/files/lsr\\_12\\_12\\_08.txt](http://www.wx1box.org/files/lsr_12_12_08.txt)

[www.wx1box.org/files/pns\\_12\\_12\\_08.txt](http://www.wx1box.org/files/pns_12_12_08.txt) This ice storm resulted in a federal disaster declaration with over 32 Million Dollars in federal aid granted in Massachusetts, 10 Million Dollars in Maine and 15 Million Dollars in New Hampshire. The federal disaster declaration was given in early January to various states and the links below describes the aid given and to what areas by state: Massachusetts: <http://www.fema.gov/news/event.fema?id=10968> New Hampshire: <http://www.fema.gov/news/event.fema?id=10948> Maine: <http://www.fema.gov/news/event.fema?id=11008> Vermont: <http://www.fema.gov/news/event.fema?id=11029> It is hoped that another storm of this magnitude does not affect the region. If one does, the importance of storm reporting during and shortly after the incident can not only help weather forecasts but can also support recovery efforts and expedite the arrival of resources to support an area adversely effected by dangerous severe weather. Thanks to all for your continued support of the SKYWARN Program, ARES/RACES/MARS/CERT and Emergency Management! Respectfully Submitted, Robert Macedo (KD1CY) ARES SKYWARN Coordinator Eastern Massachusetts ARES Section Emergency Coordinator

## Historic AMSAT Newsletters

**Phil Karn KA9Q** has made available for download his collection of historic AMSAT newsletters dating back to 1969.

Over the last 40 years AMSAT North America has produced publications under a number of different titles:

- The AMSAT Newsletter
- AMSAT Satellite Report
- AMSAT Orbit Magazine
- AMSAT Technical Journal
- AMSAT Satellite Journal

They can be downloaded from <http://www.ka9q.net/newsletters.html>

Phil also has a collection of early Amateur Packet Radio newsletters that can be seen at <http://www.ka9q.net/packet-radio-newsletters.html>



## WHAT IS A CHAMELEON ANTENNA?

by Jon-KITP

The CHAMELEON V1 HF Multiband Antenna™ is a revolutionary antenna that stands at a mere 8.5 feet tall and contains a unique trap coil design. This antenna is ideally designed for mobile, portable or base station purposes where limited space is a concern.

This antenna is a lightweight antenna system with 11 BANDS of capability including: 6m, 10m, 11m (Citizens Band), 12m, 15m, 17m, 20m, 30m, 40m, 60m & 80m. The CHAMELEON V1 HF Multiband Antenna™ can also operate on the 70cm, 1.25m & 2m BANDS (144Mhz to 500Mhz) but is primarily a HF antenna.

Unlike other multiband antennas, the CHAMELEON V1 HF Multiband Antenna™ requires no changing of switches, jumpers, coils, etc. Our simple screw together two-part system makes the CHAMELEON V1 HF Multiband Antenna™ easy to manage and store.

The CHAMELEON V1 HF Multiband Antenna™ is a [Super-Flexible Whip](#). This advantage allows the antenna to withstand extreme shock from obstructions without breakage or failing.

To function properly this antenna REQUIRES A TUNER (RECOMMENDED) OR A 9:1 BALUN.

### CHAMELEON V1 HF Multiband Antenna™ Specifications:

Size: Overall length approx. 8.5'

Frequency Range: 80/60/40/30/20/17/15/12/11/10/6M + 2M/1.25M/70cm (144MHz – 500MHz)

Wave Propagation: Omni-directional

Max Power: 350 Watts (20 Gauge Copper Wire)

Connectors: 3/8-24

Low angle take off on higher band

Provide extensive receive frequency coverage

TOP QUALITY waterproof Brass & Stainless Steel joints

TOP QUALITY Fiberglass Core

TOP QUALITY Heat Shrink 3:1 for maximum protection



My setup at Old Garden Beach, Rockport



Closeup of the shunt coil I built for easier 80 meter loading



Brian, WO1VES, in Stoneham put up a display that is synchronized to audio on 89.3FM. The vertical white rod (left of center) flashes a morse coded message. So far, AB2NJ is the only ham to have noticed and “read” the message.

### **APPLE REFUSES WARRANTY ON SMOKERS COMPUTERS**

If you smoke and own an Apple computer, the company might not fix it under warranty. This is because Apple says it may void the warranty should you need to bring a smoke exposed computer in for repair.

The Tech Blog at Yahoo notes that in at least two instances in different parts of the country, Apple has voided the warranty and refused to provide repair service on computers exposed to environments where cigarette smoke has been present. Calling cigarette smoke residue inside a computer a health risk and a biohazard, in both cases Apple customers have been denied service despite having time left on a valid warranty.

Apple is standing by the decisions, saying that repair centers have the authority to make decisions like this on their own. It cites OSHA rules that include nicotine in a list of hazardous substances that could damage the health of someone exposed to it.

Apple isn't formally commenting on the issue or responding to media requests for comment, namely regarding whether there's a threshold for cigarette smoke exposure beyond which a computer won't be serviced. No word on whether other computer vendors have the same or similar policies.

More is at <http://tech.yahoo.com/blogs/null/156203> (Yahoo)



## DAVE ROBINSON EXPLAINS SURFACE MOUNT TECHNOLOGY AT THE DECEMBER MONTHLY MEETING



HANK-W4RIG and CAARA club members enjoying the meeting...

We are always looking for speakers for club meetings...if you are interested in presenting a topic, contact any BOD member.

## **CAARA Bookstore Now Online!**

So, you've been considering a buying one of ARRL's fine books, but think the price is just a little high? Well, we have a deal for you. Amazon sells most of the ARRL books at a tidy discount, plus you get free shipping if your order is over \$25 (or second day deliver is free if you are a Prime member). Plus, if you order through the CAARA bookstore, CAARA gets a 4% commission. Where, you ask, is this CAARA bookstore? Try this link: [http://astore.amazon.com/caara\\_store-20/](http://astore.amazon.com/caara_store-20/) or go to CAARA's website (<http://caara.net>) where you will find a link.

So, take a look. Everything is handled by Amazon, so there's nothing to worry about. If you have a particular book you are interested in and don't see it, or have any suggestions, drop me a line and I'll put it up. Also, if you are looking to fill out a Christmas gift list—let everyone know they can buy your gift at the CAARA Bookstore.

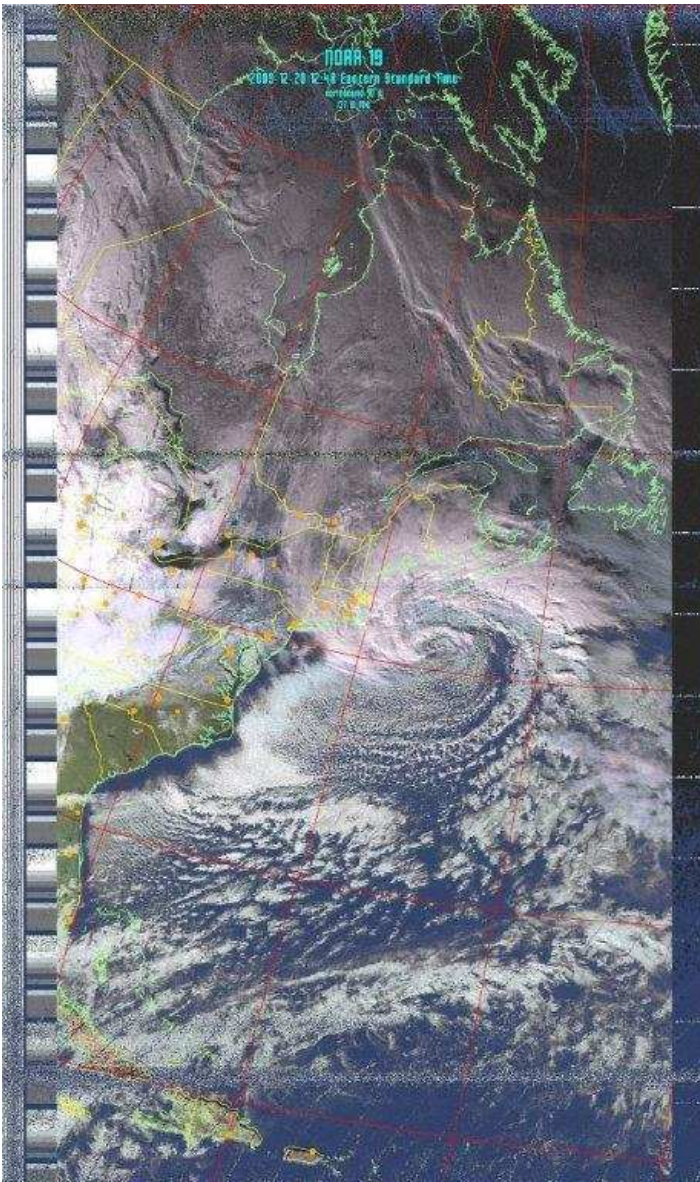
Stan-W4HIX

## **Amateur Radio Bill Passes Senate, Moves to the House On Monday, December 14**

The Amateur Radio Emergency Communications Enhancement Act of 2009 — passed the Senate by unanimous consent; the bill now goes to the House of Representatives for consideration. Sponsored by Senator Joe Lieberman (ID-CT), and Senator Susan Collins (R-ME), S 1755, if passed, would direct the Department of Homeland Security (DHS) to undertake a study on emergency communications. S 1755 points out that “There is a strong Federal interest in the effective performance of Amateur Radio Service stations, and that performance must be given — (A) support at all levels of government; and (B) protection against unreasonable regulation and impediments to the provision of the valuable communications provided by such stations.” Members of the Senate Homeland Security and Governmental Affairs Committee considered S 1755 on December 10. After it passed through Committee, it was placed on the Senate's calendar to be voted on. “We are grateful to Committee Chairman Lieberman and Ranking Member Collins for sponsoring the bill and arranging for its swift consideration and passage by the Senate,” said ARRL Chief Executive Officer David Sumner,

K1ZZ. Similar in language to HR 2160 (also called The Amateur Radio Emergency Communications Enhancement Act of 2009 that was introduced this past April by Representative Sheila Jackson-Lee [D-TX-18]), S 1755 calls on DHS to undertake a study on the uses and capabilities of Amateur Radio Service communications in emergencies and disaster relief and then to submit a report to Congress no more than 180 days after the bill becomes law. The study shall: Include a review of the importance of Amateur Radio emergency communications in furtherance of homeland security missions relating to disasters, severe weather and other threats to lives and property in the United States, as well as recommendations for enhancements in the voluntary deployment of Amateur Radio licensees in disaster and emergency communications and disaster relief efforts and improved integration of Amateur Radio operators in planning and furtherance of the Department of Homeland Security initiatives. Identify impediments to enhanced Amateur Radio Service communications, such as the effects of unreasonable or unnecessary private land use regulations on residential antenna installations; and make recommendations regarding such impediments for consideration by other federal departments, agencies and Congress. In conducting the study, S 1755 directs the Secretary of Homeland Security to “utilize the expertise of stakeholder entities and organizations, including the Amateur Radio, emergency response and disaster communications communities.” S 1755 makes note of the fact that Section 1 of the Joint Resolution entitled Joint Resolution to Recognize the Achievements of Radio Amateurs, and To Establish Support for Such Amateurs as National Policy — approved October 22, 1994 (Public Law 103-408) — included a finding that stated: “Reasonable accommodation should be made for the effective operation of Amateur Radio from residences, private vehicles and public areas, and the regulation at all levels of government should facilitate and encourage amateur radio operations as a public benefit.” The bill also pointed out that Section 1805(c) of the Homeland Security Act of 2002 (6 U.S.C. 757(c)) directs the Regional Emergency Communications Coordinating Working Group of the Department of Homeland Security to coordinate their activities with ham and Amateur Radio operators among the 11 other emergency organizations, such as ambulance services, law enforcement and others.





### Blizzard 12 20 2009.

Picture received from NOAA 19 northbound @ 12:48 PM, with my weathernreceiver/computer. It's a little noisy due to the heavy precipitation, atthe time. Look at the "Eye"... it looks like a Hurricane.

73, W1TCS-Terry

### First Chinese Amateur Radio Satellite Now in Space

AMSAT China (CAMSAT) reports that at around 0230 UTC on December 15, China launched its first Amateur Radio satellite — named XW-1 — into space. The microsatellite — a secondary payload aboard the CZ-4C rocket launched from the Taiyuan Satellite Launch Center — was launched into a Sun-synchronous orbit with an apogee of approximately 1200 kilometers. XW-1 successfully reached orbit at

0253 UTC. Members of the XW-1 launch team reported they received a beacon from the satellite shortly after the satellite deployed. In the first few days, the XW-1 team will work on the satellite's FM and store-forward transponder mode and its linear transponder mode. Once those tests are complete, they will upload a new flight program to set up the payload schedule. The satellite's communications payload includes a beacon and three crossband transponders operating in FM, SSB/CW and digital modes. Uplink and downlink frequencies can be found on the CAMSAT Web site, <http://www.camsat.cn/index.php>, or the AMSAT web site at, <http://www.amsat.org/amsat-new/satellites/status.php>.

## CAARA VE SESSION



On Sunday December 13th Caara held it's monthly Amateur radio License test session which was led by VE manager Bob Quinn-WV1A. We had 3 test takers and two passed their General License exams.

Here is Richard N, York- N1EMG of Groveland, MA holding up his new temporary General license.

Congratulations and get on the air ASAP! If you haven't got a station together yet, join the club and you can use the club station and get all the "Elmer" help you need. We can help you with antenna selection, rig choices, etc.- just ask!

# Sign up for the Feb.3 Special CAARA Meeting!

1) email Briggs, ab2nj, and tell him you're coming. He'll send you a confirming reply with details & directions!

This meeting will be at a different location, it will start earlier and run later!

(Of course, all are always welcome but for seating and planning, your reservation is politely requested.)

CARRA will be hosting Dale & Mickie Clement who will present the extraordinary

“AF1T Antenna Demonstration and Transmission Line Presentation”

It will be very entertaining & educational and is a ‘must see’ for all hams!

RSVP asap: [ab2nj@arrl.net](mailto:ab2nj@arrl.net) or [ab2nj@verizon.net](mailto:ab2nj@verizon.net) and let him know you're coming!

2) Please also announce the First Annual “MassCon” QRP Convention coming up March 12-13 at [Westford Regency Inn and Conference Center](http://www.masscon.org).

You should make room on your calendars and go to [www.masscon.org](http://www.masscon.org) to get tickets early. This will be a first rate ham convention you won't want to miss.

Thanks for your help, Briggs Longbohtum, ab2nj



**Craigslist can be a great place to find a rig!** I do searches for ham radio gear ever day or so on “Craigslist” and ran across the radio on the top right of the photo. The rig was a brand new Yaesu FT-1000MP Mark V purchased by a Boston Cardiologist at HRO a few years ago. He had planned on getting his ham license but could never find the time. The radio included a B&W portable antenna which was new in the

box as well as the optional Yaesu filtered speaker. The radio included the matching Yaesu 12/30 volt power supply which allows the rig to run 200 watts output on all modes from 10-160 meters.

I have given it a pretty good workout and it matches or exceeds the performance of my Icom 756PROIII.

*Jon-k1tp*



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S 1755 points out that "There is a strong Federal interest in the effective performance of Amateur Radio Service stations, and that performance must be given - (A) support at all levels of government; and (B) protection against unreasonable regulation and impediments to the provision of the valuable communications provided by such stations."

Members of the Senate Homeland Security and Governmental Affairs Committee considered S 1755 on December 10. After it passed through Committee, it was placed on the Senate's calendar to be voted on.

"We are grateful to Committee Chairman Lieberman and Ranking Member Collins for sponsoring the bill and arranging for its swift consideration and passage by the Senate," said ARRL Chief Executive Officer David Sumner, K1ZZ.

Similar in language to HR 2160 (also called The Amateur Radio Emergency Communications Enhancement Act of 2009 that was introduced this past April by Representative Sheila Jackson-Lee [D-TX-18]), S 1755 calls on DHS to undertake a study on the uses and capabilities of Amateur Radio Service communications in emergencies and disaster relief and then to submit a report to Congress no more than 180 days after the bill becomes law.

The study shall: Include a review of the importance of Amateur Radio emergency communications in furtherance of homeland security missions relating to disasters, severe weather and other threats to lives and property in the United States, as well as recommendations for enhancements in the voluntary deployment of Amateur Radio licensees in disaster and emergency

communications and disaster relief efforts and improved integration of Amateur Radio operators in planning and furtherance of the Department of Homeland Security initiatives.

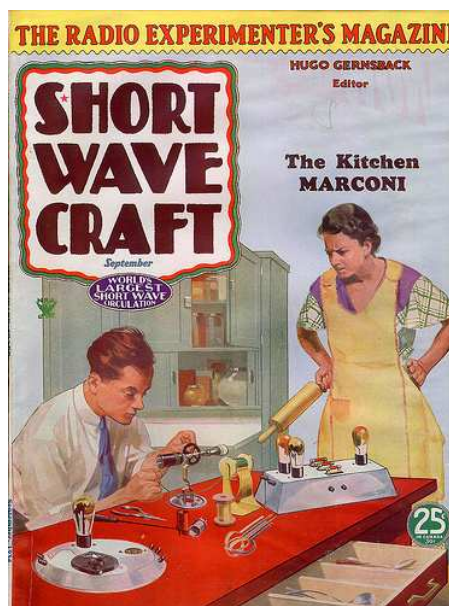
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S 1755 makes note of the fact that Section 1 of the Joint Resolution entitled Joint Resolution to Recognize the Achievements of Radio Amateurs, and To Establish Support for Such Amateurs as National Policy -- approved October 22, 1994 (Public Law 103-408) -- included a finding that stated: "Reasonable accommodation should be made for the effective operation of Amateur Radio from residences, private vehicles and public areas, and the regulation at all levels of government should facilitate and encourage amateur radio operations as a public benefit."

The bill also pointed out that Section 1805(c) of the Homeland Security Act of 2002 (6 U.S.C. 757(c)) directs the Regional Emergency Communications

Coordinating Working Group of the Department of Homeland Security to coordinate their activities with ham and Amateur Radio operators among the 11 other emergency organizations, such as ambulance services, law enforcement and others.





## CAAARA VE SESSION DATES

Here is a list of the upcoming Amateur radio license Volunteer Examiner test session dates for 2010 at the CAARA Clubhouse. Just remember that they are always on the second Sunday of each month and they start at 10 AM and don't forget to bring 2 forms of ID and \$15.00 for the testing fee. You can contact VE team Leader Bob Quinn- WV1A to let him and the VE team know your coming on a certain date by calling 978-283-4660. Don't forget that you can get discounted prices on ARRL License manuals and question pool books by going to our Caara Ham Radio Bookstore on the clubs website of [www.caara.net](http://www.caara.net)

Sunday January 10th

Sunday February 14th

Sunday March 14th

Sunday April 11th

Sunday May 9th

Sunday June 13th

73's

Dean Burgess KB1PGH VE team member

### **Hams play key role in major East Coast winter blast**

Even as the snow continues to fall outside, right now, a group of hearty souls from the Maritime Provinces of Canada to New England and as far south as the mid-Atlantic, are still manning their radio operation positions, constantly reporting on changing conditions and updating snow depths.

The folks are Amateur Radio operators whose primary motivation is public service. They want to be where the action is and their primary motivation is one of the tenets of the Amateur, to provide a pool of trained operators in the event of an emergency.

One would guess you could call two-feet of snow and blizzard conditions over the nation's capital, Washington, DC, an emergency. This storm tied up traffic and closed airports up and down the Eastern Seaboard.

At least five deaths have been attributed to the storm

that began early last week and slowly dragged its way toward New England. This put forecasters in this area in a quandary. As Todd Gutner, forecaster for WBZ-TV, Boston, noted each data run gave different results so that at times forecasters were sure the storm would miss Boston and then in the next run, the storm would pull a direct hit.

Things finally resolved on Friday so that forecasters knew it would be a direct hit on Southeastern Mass., and the Amateur Radio Community jumped into action. The major state-level players worked on a plan with the Massachusetts Emergency Management Agency (MEMA) during conference call. The plan was then sent to other members of the leadership team and staffing arrangements were made.

One key network, the HF net has had some technical problems lately as the Net Manager has run into either cable or rig issues and so we put together a series of backup HF Net stations to run if the primaries were down, which they were (HF is what people normally associate shortwave with. It is 3 to 30 MHz and stands for High Frequency. It is a long-haul mode. Disclosure: The author manages this net.)

Working with MEMA officials and key radio people such as Steve Rodewicz, N1SR, Terry Stader, KA8SCP, Steve Schwarm, W3EVE and John Ruggiero, N2YHK, we put together a list of HF operations, if there was a problem. The key station would be in Acushnet at WA1EMA, according to the Mass. Skywarn Coordinator, Rob Macedo, KD1CY.

It was truly a team effort as stations from the far south coast of Connecticut through Massachusetts followed the storm, giving reports and providing not only public safety, but also the Weather Service with real-time data on things such as snowfall rates, wind, snow depth and more. Hams were probably used to staff and provide communications on the hardest hit part of the state, Cape Cod.

You probably thing, after reading this, that the operators relied on their quaint radios for communications, but, you would be wrong because the Hams involved relied on cutting edge Voice-over-IP technology (you'd know it as internet phone) except there were PCs, sound cards and radios involved. WebEOC was an important reporting tool as were the many digital store-and-forward systems such as WL2K

system that got emails through.

As we noted at the start of this column, Ham Radio today is not your Grandpa's Ham Radio and with changes coming so fast and furious who knows where it will be next week or year. In the coming weeks, we'll be looking at some equipment that will help get you on the air inexpensively, even if you have to deal with deed restrictions. There's always a way.

Let's say you've found a great group of people, who are also helping you to do your license study and exams and you not only pass your license, but you actually end up a class higher than you think because you pass your General Class module as well.

If you have done that well, congratulations!! Your world is about to change radically, if you fully embrace the hobby, although you must remember one of the five tenets of the hobby, your family comes first. The reason for this is license structuring. A few years ago, the Ham world here consisted of five classes of license – it was known as incentive licensing. They were:

- Novice
- Technician
- General
- Advanced
- Extra

Since the requirements have radically changed there's no sense talking about the former ins and outs of each license class, but suffice it say as you climbed "the ladder" you gained more room to work with and more modes and opportunities. The Federal Communications Commission (FCC), working with the American Radio Relay League, about a decade back decided to streamline the licensing structure by grand fathering Novices to Tech and later to eliminate the Novice and Advanced so there were now three license classes:

- Tech (VHF only)
- General (HF/VHF)
- Extra (Everything)

And, notice this, Morse code became only voluntary. You could use it if you wanted to. The changes cooked up by the FCC allowed new modes to become popular such as PSK31 that allows you to hear signals at the noise floor. PSK31 can pull weak signals out of the mud (noise).

Developments in on-board chip technology allowed

rigs to offer digital signal sampling and digital signal processing. (We'll be checking all of that out here). And, thanks to standards development by [Icom](#) with its D-Star rigs and [Kenwood's](#) Command series you can access rigs over the air or via the Internet. Indeed, [Yaesu/Vertex](#) is a leader in voice over Internet technology.

We also just found a bunch of ham that has interfaced Bluetooth with HF radio technology that bears a close look (and maybe a project we can do together).

We're just scratching the surface of things happening in this hobby. There's a whole lot more that waits.

For now, we'll say 73 (meaning best regards) and CUL (see you later)

*Boston Examiner.com December 22, 2009*

## Morse Tips & Quips



**"IT'S NEVER TOO EARLY TO START  
LEARNING MORSE CODE!"**

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**Don't forget the CW classes being offered free of charge at the club every Saturday morning by Rick- WZ1B. This is a great chance to learn the code or just to increase your code speed. Rick is offering some nice awards for cw performance!**





## THE AMATEUR'S CODE

Paul M. Segal W9EEA (1928)

The Radio Amateur is:

**CONSIDERATE...** never knowingly operates in such a way as to lessen the pleasure of others.

**LOYAL...** offers loyalty, encouragement and support to other amateurs, local clubs and the American Radio Relay League, through which Amateur Radio in the United States is represented nationally and internationally.

**PROGRESSIVE...** with knowledge abreast of science, a well-built and efficient station and operation above reproach.

**FRIENDLY...** slow and patient operating when requested; friendly advice and counsel to the beginner; kindly assistance, cooperation and consideration for the interests of others. These are the hallmarks of the amateur spirit.

**BALANCED...** radio is an avocation, never interfering with duties owed to family, job, school, or community.

**PATRIOTIC...** station and skill always ready for service to country and community.

## Did Samuel F. B. Morse Invent the Code as We Know it Today?

**Franklin Pope and William Baxter give some answers**

by Neal McEwen, K5RW

The invention of the Morse code is generally attributed to Samuel F. B. Morse. Have we been misled by historians? Have historians overlooked important documents? Or have historians just not shared all the facts with us? The following quote is taken from an article in "The Century: Illustrated Monthly Magazine", April, 1888, by Franklin Pope, titled "The American Inventors of the Telegraph, with special references to the services of Alfred Vail". The article is quite lengthily and comprehensive and is recommended reading for anyone interested in early telegraph history. "The Century" was a popular periodical of the era and should be available at larger libraries and book dealers. In case you haven't the

Every amateur should know and tremble at the history and origins of this fearsome instrument for the punishment of amateurs who cultivate bad operating habits and who nourish and culture their meaner instincts on the air. The [Wouff Hong](#) was invented — or at any rate, discovered — by "The Old Man" himself, just as amateurs were getting back on the air after World War I. The Old Man (who later turned out to be Hiram Percy Maxim, W1AW, co-founder and first President of ARRL) first heard the Wouff Hong described amid the howls and garble of interference as he tuned across a band filled with signals that exemplified all the rotten operating practices then available to amateurs (considering the state of the art as they knew it). As The Old Man heard it, the Wouff Hong was being used on some hapless offender so effectively that he investigated. After further effort, "T.O.M." was able to locate and identify a Wouff Hong. The Old Man never prescribed the exact manner in which the Wouff Hong was to be used, but amateurs need only a little imagination to surmise how painful punishments were inflicted on those who stoop to liddish behavior on the air.





time or inclination to get the whole article, I have quoted the most relevant part below.

Before jumping in, let's set the stage and see who the players are. Franklin Pope was a telegraph inventor, entrepreneur and writer. He may be best known for his partnership with Thomas Edison in the telegraph services business in the early 1870s. Alfred Vail was one of Samuel Morse's partners and contributor in the development of the telegraph. William Baxter was Vail's laboratory assistant at the Speedwell Iron Works where early developments were made.

Quoting from Pope's article:

It is also important to remember that the code of conventional signals which had been devised by Morse, and which, in connection with his machine, he proposed to use for the transmission of intelligence, were *numerical* and not *alphabetical*. According to his scheme, a specially prepared dictionary was required in which every word in the English language was represented by an arbitrary number. A separate type represented each numeral, having a corresponding number of projections or teeth. We reproduce a specimen of telegraphic writing by this numerical code.

The numbers refer to words in the telegraphic dictionary. They are translated by counting the points at the bottom of the line, and then, by referring to the dictionary, the corresponding words are found and the communication translated.

The construction of the machines referred to by Mr. Baxter was begun early in September, 1837, immediately after the partnership between Morse and Vail had been determined upon. Meanwhile, Morse remained in New York, engaged in the preparation of his caveat. This document was subscribed by him on the third day of October, 1837, and from it we may learn precisely of what his invention then consisted. He enumerates the essential parts of his apparatus as follows:

“First, a *system of signs*, by which numbers, and consequently words and sentences, are signified; second, a *set of type*, adapted to regulate and communicate the signs, with rules in which to set up the type; third, an *apparatus called the port-rule*, for regulating the movement of the type-rules, which rules, by means of the type, in their turn regulate the

times and intervals of the passage of electricity; fourth, a *register*, which records the signs permanently; fifth, a *dictionary*, or vocabulary of words, numbered and adapted to this system of telegraph; sixth, *modes of laying conductors* to preserve them from injury.”

This, then, was Morse's telegraph, as it existed in October, 1837. It was the first apparatus to *record* simple numerical signs at a distance by electricity. Writing as late as 1867, and giving what may be regarded as his own mature opinion of his work, Morse claims, and with justice, to be the first inventor of a *recording or printing telegraph*, as distinguished from a *semaphore*, giving only evanescent signs, either visual, as in the apparatus of Schilling and others, or acoustic, as in the apparatus of Henry. He inquires:

“What else was necessary to be added to the catalogue of facts known in 1832 to construct a telegraph? One other fact only was wanting, and that was a system of signs adapted to the capabilities of the mechanism for printing at a distance; and this system of signs I invented in 1832, and adding to it the inventory of known facts *successfully combined* them to produce the telegraph.”

But, as we shall hereafter see, the telegraph invented by Morse in 1832, and described in his caveat of 1837, has nothing in common with the *essentials* of the modern system of telegraphy which is known in the United States as Morse's; nor is the code of alphabetical signs now universally used in telegraphy throughout the world the same, either in principle, or in construction, as that of the caveat.

As soon as the caveat had been safely lodged in the Patent Office, Morse began the preparation of a dictionary. October 24, he writes to Vail:

*The dictionary is at last done. You cannot conceive how much labor there has been, but it is accomplished, and we can now talk or write anything by numbers. . . .*

*The spark passes freely as yet three and a half miles, and magnetizes well at that distance, though evidently with diminished strength, which would seem to indicate that there is a limit somewhere. We have just heard that Professor Wheatstone has tried an experiment with his method - twenty miles - with success; we have, therefore, nothing to fear.*

On the 29th, Morse went to Speedwell for a few days, partly to observe the progress of the new machinery, and partly with the intention of painting the portraits of the members of Judge Vail's household, in fulfillment of a commission which had been given him as a delicate and considerate manner of relieving his pressing pecuniary necessities. After his return to New York, he wrote to Vail, November 13:

*You will be gratified and agreeably surprised when I inform you that the result now is, that, with a little addition of wire to the coil of the small magnet which I had all along used, the power was as great apparently through ten as through three miles. The result has surprised us; and yet there is no mistake, and, I conceive, settles the whole matter.*

Meanwhile Alfred Vail and his young assistant, William Baxter, were engaged night and day in pushing forward the construction of the new machinery. Writing of this period, Mr. Baxter says:

*Alfred was singularly modest and unassuming, while Professor Morse was very much inclined to insist on the superiority of his own plans and methods - if for no other reason; because they were his own. As we all looked upon him with the respect due to a professor, we were at first quite willing to defer submissively to his dicta. It resulted from this, that the first machine which was constructed at Speedwell was substantially a copy of the original model, although constructed of metal, in a more symmetrical and practical form.*

*As we became acquainted with Morse it became evident to us that his mechanical knowledge and skill were limited, and his ideas in matters relating to construction of little value. As the weak points in the apparatus were one after another developed, Alfred began to draw upon the resources of his own wonderful power of invention in substituting practical and commercially valuable mechanical combinations for the more or less impracticable designs of Morse.*

*We found, for example, that the pencil of the recording apparatus frequently required repointing, and that when freshly sharpened it made a different mark from that made by a worn point, which tended to render the record obscure and difficult to decipher. Alfred contrived a fountain pen that made*

*a uniform line. This device, however, was not satisfactory to him, as it threw the ink in all directions when jerked by the sudden action of the magnet, and he spent some time in diligent study in the endeavor to devise a remedy.*

*He was a mechanical draughtsman of surpassing skill, as is fully attested by some of his work still in possession of his family. He brought to me one day, after working for an hour at his drawing table, a sketch of a new marking device, in which a vertical motion was given to the lever instead of the transverse movement which had hitherto been employed. We constructed the new lever, and thus for the first time produced a register capable of making dots, dashes, and spaces.*

*Alfred's brain was at this time working at high pressure, and evolving new ideas every day. He saw in these new characters the elements of an alphabetical code by which language could be telegraphically transmitted in actual words and sentences, and he instantly set himself at work to construct such a code. His general plan was to employ the simplest and shortest combinations to represent the most frequently recurring letters of the English alphabet, and the remainder for the more infrequent ones. For instance, he found upon investigation that the letter e occurs much more frequently than any other letter, and accordingly he assigned to it the shortest symbol, a single dot(.). On the other hand, j, which occurs infrequently, is expressed by dash-dot-dash-dot (-.-.) After going through a computation, in order to ascertain the relative frequency of the occurrence of different letters in the English alphabet, Alfred was seized with sudden inspiration, and visited the office of the Morristown local newspaper, where he found the whole problem worked out for him in the type cases of the compositor.*

*In this statement I have given the true origin of the misnamed "Morse" alphabet the very foundation and corner-stone of a new system, which has, since become the universal telegraphic language of the world."*

Karen Weiss, a professional researcher based in Washington D.C., found this article and sent it to me. I am much indebted to her. I think you would agree that this is a significant document. Are Pope and Baxter

entirely correct? Did they have some personal agenda? We may never know. I tend to believe that “where there is smoke, there is fire.” Will history be re-written? Probably not.

## **Stephanie is youngest radio amateur in the**

### **UK**

**Stephanie Gregory** is all EARS – and she couldn’t be happier she’s making waves.

The bubbly seven-year-old is the youngest licensed radio amateur in the United Kingdom.

And it’s all down to the help and support she’s been given as a member of the **Elderslie Amateur Radio Society** (EARS).

Stephanie has just passed her amateur radio exams which means she no longer has to operate from their radio club under supervision.

She told the Paisley Daily Express: “I have been coming come to the meetings with my dad for a while now and I used to watch what he was doing.

“It looked like good fun so I asked if I could have a go. I thought it was brilliant.

“I’ve now been doing it since August and I thought it would be good if I could become a member of the same club.”

However that meant sitting the full-blown radio amateur exam, although thanks to the hard work of club chairman Eddie Higgins, the club is now a qualified test centre.

Stephanie, a pupil at Wallace Primary School, said: “I asked if I could sit my exam and was told that would be okay.

“I eventually passed the exam and I was delighted.

“I don’t have my own radio yet but I can still talk to people while I’m at the club.

“And my dad’s got a radio in the car so I get to use that as well. It’s brilliant fun.”

<http://www.paisleydailyexpress.co.uk/renfrewshire-news/2009/12/22/stephanie-is-youngest-radio-amateur-in-the-uk-87085-25442928/>

## **Italian police silence ‘voice of God’**

Police have silenced a radio station that spread the good word to Roman Catholics in an Italian village, but interfered with local air traffic, the *La Repubblica* newspaper reports.

With its antenna inside a church steeple, the low-powered radio station - in operation since the mid-1980s - relayed services live to the elderly, ailing and handicapped of Asolo village, northwest of Venice.

But its broadcasts at 108 MHz FM - which is also the bottom end of the aviation radio band - led to complaints from pilots at nearby Treviso airport, used by low cost airlines, and triggered a police raid.

Don Giacomo Lorenzon, the parish priest in Asolo for the past two years, insisted on his good faith when police questioned him, but *La Repubblica* said he will nevertheless have to plead his case to a judge.

Some 160 Italian towns and villages have similar radio stations that are too small to require a government licence, the newspaper said.

Using technology from a company in Milan, they typically use a low-power transmitter that costs up to 10,000 (\$14,500) as well as fixed-frequency receivers that parishioners can buy for 60 each.

## **No Hamvention move for the next 3 years**

The **Dayton Hamvention** will be staying at its home at the Hara Arena for at least another three years.

According to planners, the Hamvention Committee has inked a deal with the Hara covering 2011, 2012 and 2013 in addition to the one already in place for 2010.

The planning committee has also reached an agreement with the close in Salem Mall for parking and with the local bus service for transportation to and from the mall parking site.

Hamvention 2010 is slated for May 14th to the 16th which is less than 6 months away.





**A few pix from the past...courtesy of Joe-WB1CHJ**

Mac- W1OMN, Joe- WB1CHJ, Tom- KA1GTA, Glenn-KG1P, and Tony-N1JEI



Annual Christmas party at St. John's Church in Gloucester in the eighties....

Larry-W1EGJ from Peabody, now a silent key, was a one man army for the club.



We had a sausage cart at Field Day...Mac- OMN on the left and Larry-EGJ on the right....both contributed countless hours on club events and improvements.





Can you find Ralph-W1RK, Rick-WZ1B, and Bill-WZ1L?



Ed Cobb, silent key, a CAARA BOD member for years.



Jack-W1PSG, silent key, with our first "new" repeater





Fran V.-WU1S and Warren- WX1R (silent key) from Rowley at one of Charlie Anderson's- WI1U summer cookouts at his qth in Rockport.

**AMSAT Announces Annual Straight Key Night** — [AMSAT](#), the Radio Amateur Satellite Corporation, has announced its annual Straight Key Night will take place from 0000-2400 UTC on January 1, 2010. Get out your straight key and join amateurs the world over as they connect with each other via the OSCAR satellites. According to AMSAT past vice president Ray Soifer, W2RS, the AO-51 satellite will be configured as an SSB/FM Repeater, V/U (CW QSOs only on Straight Key Night) with an uplink of 145.880 MHz USB and a downlink: 435.150 MHz FM during the event. "Participating in SKN 2010 on all satellites is easy," Soifer said. "No rules, no scoring and no need to send in a log — just operate CW through any OSCAR between 0000 and 2400 UTC on January 1, 2010 using a straight hand key. In keeping with the friendly nature of this event, all participants are encouraged to nominate someone they worked for 'Best Fist.' Your nominee need not have the best fist of those you heard, just of those you worked.

**ARRL Seeks Emergency Preparedness and Response Manager** The ARRL currently has an

opening for an Emergency Preparedness and Response Manager to be based at ARRL HQ. The successful applicant will represent the League with governmental and non-governmental emergency and disaster response organizations and partners — primarily at the national level — for planning, continuity and operational purposes.

**ITEMS FOR SALE:** Yaesu FT-8900 Quad Band radio mobile. Comes with Box, books, and I will add a program cable and software with it. Radio is from non smoker and is mint condition. I am looking to get \$300.00 for it. No problems with it at all. Selling because I upgraded to the Icom 706 MKIIG. Yaesu FT-60R dual band HT for \$150.00 in mint shape with box, book and charger. I can be reached at 978-290-7931 or Email me at [n1rsp1@comcast.net](mailto:n1rsp1@comcast.net)

**[Hamradiotube for sale !](#)**

The owner of the amateur radio video website **Hamradiotube.com** has decided to put the site up for sale. The move follows the lack of contributions or donations to help offset the high cost of running the site



**A review of the Yaesu FT 857D HF,VHF,UHF Ultra compact transceiver** by *Dean Burgess KB1PGH*

I have had the Yaesu FT 857D for a couple of years now and so far I have had no negative issues with the radio. I purchased this radio because I had a Icom 718 but I wanted an all in one radio that included 6 meters since Jim Mondello-W1DDX got me hooked on the "Magic Band". The FT 857 D was made for either mobile or portable work with a small footprint of 6" by 2" by 9". It does 100 watts on HF and 6 meters and the wattage can be adjusted from 5 to 100 watts in 1 watt increments. This feature worked out well for me as I have had to turn the wattage down once to stop setting off my home's smoke detectors. That's the fault of my antenna situation and not of the FT 857D. It puts out 50 on VHF and 20 watts on 70 CMs. This radio works off of an extensive menu system due to the limited size for knobs and buttons. Let's just say that Rick Maybury WZ1B, who can't stand menu driven systems would chuck this radio into the Atlantic ocean after trying to operate this radio for 2 seconds. The menu system though is well thought out and one gets used to it

easily after operating it a few times. You can go deep into every operational aspect of the FT 857 D with the menu system and you can set every operational parameter to your desire. For example, the FT 857D has a AF driven DSP system and if you turn the dsp on on the factory settings then the dsp makes the audio sound a bit muffled. You can easily solve this problem and make the DSP sound great by going into the menu and turning it down just a bit and setting the dsp bandpass to your liking as well. The dsp does help but you will need a pair of headphones or a decent speaker as the internal speaker just doesn't cut it. The FT 857 uses ceramic filters for SSB and they work ok but I did an upgrade and purchased the optional Collins 2.2 KHZ 10 pole mechanical filter which runs about \$169. The filter was easy to install and it does make a difference in received and transmitted audio. The filter has much better rejection with its steeper skirt which



make the audio sound crisper, plus I get the 2 db gain on my transmitted signal which every db counts in dx land. One can also buy mechanical cw filters for it as well. The FT 857 D has the usual clarifier and IF shift controls to enhance things on the receive side as well as a noise blanker for mobile installations. The radio also has an AF speech processor which works ok but one has to turn it down real low since it has the issue of causing distortion. The FT 857D has a microphone equalizer which works quite well on tailoring your voice as it has high and low cut filters. The FT 857 D also has a spectrum scope monitor which works ok for what it is. In the end the FT 857D is perfect for those who want an all around mobile or portable rig. It certainly was not meant to be a super contest rig or

someone who wants a super base station. I would recommend this radio for anyone who is looking for an all around, all purpose rig that they can have in their shack one minute and then take it with them out in the field with a Buddipole the next minute. I would recommend the FT 857 as a nice entry level rig or for those like myself who just like to dabble in HF

once and awhile and then flip a switch to get on the CAARA repeater. If you're more of a purist, you can hook up the LDG Electronics mechanical needle meter to the FT 857 D if you hate the digital meter. I have had good luck with the audio reports of the modulation the FT 857 D produces and the radio is sensitive enough on the receive end of things. I have a lousy QTH for hf radio work due to nearby electrical interference and my FT 857 D is hooked up to a Alpha Delta 40 ft dipole which is only 15 ft off the ground but I have managed to talk to Russia on 20 meters and Florida on 6 Meters so I am looking forward to getting a Buddipole next summer and seeing the true performance of this rig. I would say if you are new to the hobby or want an all around mobile or portable rig take a look at the Yaesu FT 857 D. It costs around \$750 new and if you might want to look at its bigger brother, the Yaesu FT-897 D.

## Last Surviving Crew Member of *Kon-Tiki* Expedition Passes Away

Knut Magne Haugland, LA3KY, of Norway, passed away on December 25. He was 92. Haugland was one of six men, who with Thor Heyerdahl in 1947, successfully crossed the Pacific Ocean in a 45 foot raft made of balsa wood and bamboo — named *Kon-Tiki* — to prove that people from South America could have settled Polynesia in pre-Columbian times.

Called the “most unusual expedition ever to place reliance on Amateur Radio for communication” in the [December 1947 issue of QST](#), *Kon-Tiki* departed Peru for Polynesia on April 28, 1947. “It was the theory of Thor Heyerdahl, Norwegian ethnologist and leader of the venture, that the settlement of the Pacific Islands resulted from a migration of American peoples who had sailed there many of years ago, rather than a trek from Asia as claimed by other scientists,” the article explained. “To prove that such a migration was possible, Mr Heyerdahl decided to attempt the trip in a raft of the type preserved in Incan legends and early Spanish historical accounts. He named the expedition on honor of the pre-Incan Sun god. The *Kon-Tiki* raft was fashioned out of logs of the lightest wood in existence and lashed together with native-made hemp rope. Its only sources of locomotion would be the Pacific trade winds and the Humboldt Current which sweeps northward along the west coast of South America and thence in the direction of the [Tuamotu Archipelago](#).”

### Haugland and World War II

During World War II, Haugland was a member of the [Norwegian Resistance](#) where he was instrumental in the destruction of the Vemork Hydroelectric Plant. When the Nazis took over Norway, they wanted to use the plant — which produced “heavy water” — in their quest to produce nuclear weapons. Between 1940 and 1944, a sequence of sabotage actions by the Norwegian resistance movement, as well as Allied bombing, ensured the destruction of the plant and the loss of the heavy water produced. These operations —



codenamed Grouse, Freshman and Gunnerside — finally managed to knock the plant out of production in early 1943. The Norwegian Resistance Operation Grouse successfully placed four Norwegian nationals — Haugland, Arne Kjelstrup, Jens-Anton Poulsson and Claus Helberg — who became Operation Grouse. The four men were parachuted over Hardangervidda on October 18, 1942, to rendezvous with the British [Operation Freshman](#) and proceed to Vemork. Once on the ground, the Norwegians began to send back

intelligence about the plant, including the composition of its defenses. Operation Freshman failed when the British military gliders crashed short of their destination. All 41 participants were killed in the crash or captured, interrogated and executed by the Nazis. Members of Operation Grouse were then ordered to wait for another team, [Operation Gunnerside](#). In 1943, this team of British-trained Norwegian commandos succeeded at destroying the production facility. In 1965, this feat was made into a movie, [The](#)

[Heroes of Telemark](#), starring Kirk Douglas; After the destruction of the plant, Haugland stayed in Hardangervidda for two months and then went to Oslo to train marine telegraphers. After a trip to the United Kingdom for radio supplies, he returned to Norway in November, being parachuted at Skrimfjella. The Nazis arrested him in Kongsberg, but he escaped and commenced his training duties. On April 1, 1944, he narrowly escaped another capture by the Gestapo when one of his transmitters — hidden in the Oslo Maternity Hospital — was located by the Nazis using direction finding. Haugland fled to the United Kingdom and did not return to Norway until after the war. For his bravery, Haugland was twice awarded Norway’s highest decoration for military gallantry, the [War Cross with sword](#), in 1943 and 1944. In addition, Haugland was awarded the [Distinguished Service Order](#) and the [Military Medal](#) by the British. He also received the French [Croix de guerre](#) and [Légion d’honneur](#) and the [Royal Norwegian Order of St Olav](#)

### Haugland and the *Kon-Tiki*

Haugland first met Thor Heyerdahl in 1944 at a paramilitary training camp in England. It was here that

Haugland first heard of Heyerdahl's theories about Polynesian migration patterns and his plans to cross the Pacific on a balsa wood raft. In 1947, Heyerdahl invited Haugland and Torstein Raaby, another former resistance member, to join the *Kon-Tiki* expedition as radio operators.

Heyerdahl and his five companions sailed the raft for 101 days more than 4300 miles across the Pacific Ocean before smashing into a reef in the Tuamotu Islands on August 7, 1947. The *Kon-Tiki* carried 250 liters of water in bamboo tubes. For food, they took 200 coconuts, sweet potatoes, bottle gourds and other assorted fruit and roots. The US Army Quartermaster Corps provided field rations, tinned food and survival equipment. In return, the *Kon-Tiki* explorers reported on the quality and utility of the provisions. They also caught plentiful numbers of fish, particularly flying fish, mahi-mahi, yellow fin tuna, bonito and shark.



The expedition used call sign LI2B and carried three watertight radio transmitters. The first operated on the 40 and 20 meters, the second on 10 meters and the third on 6 meters. Each unit was made up entirely of 2E30 vacuum tubes providing 10 W of RF input. As an emergency backup, they also carried a German Mark V transceiver originally re-created by Britain's Special Operations Executive in 1942. Other equipment included a hand-cranked emergency set of the Gibson Girl type for use on the maritime bands, a special VHF set for contacting aircraft and two British Mark II transmitters. The *Kon-Tiki* also carried a National Radio Company NC-173 receiver. Dry batteries and a hand-cranked generator supplied the power.

The December 1947 *QST* article stated that "the conditions under which the radio equipment aboard the raft was to operate presented many unusual problems. Proximity of the craft's deck to the sea and the relatively small protection afforded by the thatched bamboo cabin meant that the gear would have to withstand the effects of moisture. It was desired to have transmitter units light and tight enough so that if they should fall overboard they could be fished out and put to work again immediately. Operation was

required on maritime and amateur frequencies. Both 'phone and c.w. were specified. The transmitters were to be tuned, closed up and remain watertight unless something went wrong. It must be possible to load them up on antennas of whatever length could be erected on available supports. With these requirements in mind, [C. F. Haddock] W1CTW and [H. A. Gardner] W1EHT of the National [Radio] Company's engineering staff designed and constructed the needed rigs. One transmitter was built to operate on 7 and 14 Mc., another for 28 Mc. and a third for 50 Mc."

For the first 22 days following their departure from Peru, the only radio contact *Kon-Tiki* had was with OBE, the station of the Peruvian Naval School. LI2B kept to its schedule, trying to contact key amateur stations on specified frequencies without success. Finally, on May 20 at 9:44 PST, Harold Kempel, W6EVM, heard and worked LI2B on 14.142 kHz, providing the raft with its first North American contact. By mid-June, LI2B had worked numerous amateur stations.

As the trip progressed, a long-haul network of amateur stations developed. Stations in North America, the Canal Zone and Norway cooperated in handling the *Kon-Tiki*'s traffic. [Gene Melton] W3FNG, in Washington, DC, relayed messages to and from the Norwegian Embassy. "On at least two occasions, urgent traffic was exchanged between the Embassy and the raft via this circuit," the *QST* article explained. "In one instance, a message was relayed from the raft to W3FNG, delivered by telephone to the Embassy, an answer procured and relayed in the reverse direction to *Kon-Tiki* — all in a matter of 35 minutes elapsed time!"

*Kon-Tiki*'s mission ended on August 7, 1947 — just 101 days after departure from Peru — when waves deposited the raft on a reef off Raiora Island. "But the safety of the courageous crew which had made the venture a success was still at stake," the *QST* article said. "Half an hour after being stranded, LI2B was fortunate in making contact with [G. W. Hitch] ZK1AB on Raratonga, who was asked to stand a listening watch and communicate with the Norwegian Embassy in Washington if LI2B was not heard at the



end of a 36 hour period. Just before the specified period ended, contact was established with [P. Fuller], WOMNU, and word of the landing passed along, thus avoiding the necessity of sending out any rescue parties.”

In his book *Kon-Tiki*, Heyerdahl described the rush to make contact after landing on the reef, including the crew’s despair as the NC-173 slowly dried after getting soaked in a shipwreck, gradually receiving at higher and higher frequencies until eventually settling on the 13.990 MHz frequency needed to make contact:



“Coils and radio parts lay drying in the tropical sun on slabs of coral. The whole day passed, and the atmosphere grew more and more hectic. The rest of us abandoned all other jobs and crowded round the radio in the hope of being able to give assistance. We must be on the air before 10 PM. Then the thirty-six hours’ time limit would be up, and the radio amateur on Rarotonga would send out appeals for airplane and relief expeditions.

“Noon came, afternoon came, and the sun set. If only the man on Rarotonga would contain himself! Seven o’clock, eight, nine. The tension was at breaking point. Not a sign of life in the transmitter, but the receiver, an NC-173, began to liven up somewhere at the bottom of the scale and we heard faint music. But not on the amateur wavelength. It was eating its way up, however; perhaps it was a wet coil which was drying inward from one end. The transmitter was still stone-dead short circuits and sparks everywhere.

“There was less than an hour left. This would never do. The regular transmitter was given up, and a little sabotage transmitter from wartime was tried again. We had tested it several times before in the course of the day, but without result. Now perhaps it had become a little drier. All the batteries were completely ruined, and we got power by

cranking a tiny hand generator. It was heavy, and we four who were laymen in radio matters took turns all day long sitting and turning the infernal thing.

“The thirty-six hours would soon be up. I remember someone whispering ‘Seven minutes more,’ ‘Five minutes more,’ and then no one would look at his watch again. The transmitter was as dumb as ever, but the receiver was sputtering upward toward the right wavelength. Suddenly it crackled on the Rarotonga man’s frequency, and we gathered that he was in full contact with the telegraph station in Tahiti. Soon afterward we picked up the following fragment of a message sent out from Rarotonga: ‘...no plane this side of Samoa. I am quite sure...’”

“Then it died away again. The tension was unbearable. What was brewing out there? Had they already begun to send out plane and rescue expeditions? Now, no doubt, messages concerning us were going over the air in every direction. The two operators worked feverishly. The sweat trickled from their faces as freely as it did from ours who sat turning the handle. Power began slowly to come into the transmitter’s aerial, and Torstein pointed ecstatically to an arrow which swung slowly up over a scale when he held the Morse key down. Now it was coming!

“We turned the handle madly while Torstein called Rarotonga. No one heard us. Once more. Now the receiver was working again, but Rarotonga did not hear us. We called Hal and Frank at Los Angeles and the Naval School at Lima, but no one heard us. Then

Torstein sent out a CQ message, that is to say, he called all the stations in the world which could hear us on our special amateur wavelength. That was of some use. Now a faint voice out in the ether began to call us slowly. We called



again and said that we heard him. Then the slow voice out in the ether said ‘My name is Paul. I live in Colorado. What is your name and where do you live?’

“This was a radio amateur. Torstein seized the key,

while we turned the handle, and replied, ‘This is the *Kon-Tiki*. We are stranded on a desert island in the Pacific.’ Paul did not believe the message. He thought it was a radio amateur in the next street pulling his leg, and he did not come on the air again. We tore our hair in desperation. Here were we, sitting under the palm tops on a starry night on a desert island, and no one even believed what we said.

“Torstein did not give up; he was at the key again sending ‘All well, all well, all well’ unceasingly. We must at all costs stop all this rescue machinery from starting out across the Pacific. Then we heard, rather faintly, in the receiver, ‘If all’s well, why worry?’ Then all was quiet in the ether. That was all. We could have leaped into the air and shaken down all the coconuts for sheer desperation, and heaven knows what we should have done if both Rarotonga and good old Hal had not suddenly heard us. Hal wept for delight, he said, at hearing LI2B again. All the tension stopped immediately; we were once more alone and undisturbed on our South Sea island and turned in, worn out, on our beds of palm leaves.”

### **After *Kon-Tiki***

In 1951, Haugland married librarian Ingeborg Prestholdt. He participated in the Independent Norwegian Brigade Group in Germany from 1948-1949, continued in the Forsvarsstaben until 1952, when he was transferred to the Royal Norwegian Air Force. He headed the electronic intelligence service in Northern Norway during the Cold War. He held the ranks of Major from 1954 and Lieutenant Colonel from 1977. In 1963, Haugland left the Air Force to become acting director of the [Norway’s Resistance Museum](#); he was later made its permanent director and retired from this position in 1983. He was also the director of the [Kon-Tiki Museum](#) from its start in 1947, continuing until 1990.

### **HERTZ, KILOHERTZ, MEGAHERTZ, AND GIGAHERTZ**

To start off, we must first define what ‘frequency’ is. A frequency is the number of times an object performs a cycle in a specific time frame. Sound is made up of cycled air vibrations. The more vibrations, or cycles, there are, the higher the tone. 1 cycle per second is defined as 1 **HERTZ**, named after Heinrich Hertz, a man who studied radio waves in the nineteenth century. If are familiar with the metric system, you know that

for each additional zero you add to a number, you can shorten it by using a different term (1000 meters, 1 kilometer). The metric system is used in hertz also. Instead of saying 1000 hertz, you would say 1 **KILOHERTZ**. The same holds true for 1 **MEGAHERTZ**, 1000 kilohertz, and 1 **GIGAHERTZ**, 1000 megahertz. Most scanners receive only frequencies in megahertz, but some can climb in the lower gigahertz range.

### **WAVELENGTH**

Radio waves travel from the tower in waves. These waves move at the speed of light (186,282.3976 miles per second). The difference between the front of the wave and the back of the wave is defined as a **WAVELENGTH**.

As the frequency increases, the number of waves sent from the tower each second increases with it. The number of waves, or cycles, is defined in [hertz](#) (1 wave, or cycle, equals 1 hertz. 2 waves, or cycles, equal 2 hertz. Etc.) When the number of waves increases, the size of each wave **decreases**. (Remember, 3 hertz means 3 waves per second. In order to fit each wave into that second, the size of each has to decrease.)

This is somewhat confusing for a beginner. To make it easier, imagine a rope 186,282.3976 miles long. This represents 1 wave in a second. Its wavelength equals 186,282.3976 miles. Now, imagine, cutting the rope in two equal segments. This represents 2 waves in a second. Putting the two ropes together still creates the accurate distance light travels in a second. But, the two waves needed to become less so they could both fit in that frame. Each of their wavelengths are half of 186,282.3976 miles, or 93141.1988 miles.

To go even further, imagine the rope as a whole again. Now, cut it into thirds. This represents 3 waves in a second. The lengths of all three still make the speed of light in a second, but all three needed to become a third of its size in order to equally fit in it. Each of their wavelengths are about 62,094.1325333 miles long.

You could go on forever with this, but there is not enough room on this page for that. A simple way to calculate the wavelength is take 186,282.3976 miles and divide it by the number of hertz (Remember, 1 wave equals 1 hertz).