# Garden School Amateur Radio Club Newsletter

# 2nd Quarter - 2017-2018

Welcome to the Garden School Amateur Radio Club!! Our club was started in 2016 with some generous donations from an alumnus and in conjunction with the Hall of Science Amateur Radio Club serving as our mentors.

## Garden Participate in Ham Radio University

John Hale - KD2LPM


On January 6th, the Garden School ARC visited Long Island University / Post campus for the annual Ham Radio University. What is HRU? Many of you have already heard of Ham Radio University but the idea may be new to some of you. HRU was created by Phil Lewis, N2MUN. Phil was searching for ways to get inactive hams back into the swing of Amateur Radio. In addition, Phil wanted to help newly licensed hams who ask "What Now?". Since 1999, HRU has been bringing the local ham community together for a special day of learning and fellowship.

Here are some the Forum's that our member got a chance to partake in.

- Working Satellites with your HT
- Antenna Modeling
- Contesting For Newcomers and Non-Contesters
- Introductory guide to VHF/UHF operating
- Military Auxiliary Radio System (MARS) – Army MARS and the Amateur Radio Community
- Building your first ham station
- Intro to DXing (history, techniques)
- New York City / Long Island Emergency Communication
- Radio Broadcasting at the LIU Post Radio Station WCWP
- Safety in the ham shack
- Using Ham Apps and Social Media
- Grounding for the Ham Station
- The National Traffic System

This year three of the trustee members, led by Gerard Pilate, of the Garden School ARC conducted a presentation on the National Traffic System. This is the system we used when transferring our messages to Puerto Riccio. Next year we will offer this presentation but will also add to the list a presentation on How to Incorporate Radio Science into the Classroom Setting.

# Garden School ARC Places 4th in the Nation during the School Club Round-up Competition

By: John Hale

During the week of October 17th, the Garden School Amateur Radio club participate in the National ARRL School Club Roundup. The objective was to exchange QSO information with club stations that are part of an elementary, middle, high school or college. Non-school clubs and individuals are encouraged to participate.

Sponsored by the ARRL, its Hudson Division Education Task Force and and the Long Island Mobile Amateur Radio Club (LIMARC) to foster contacts with and among school radio clubs. Garden School was able to place 4th Nationally in their division division. We are very proud of the accomplishment during their first competition.

Below are a list of our results.

K2GSG's Contest Summary Report for ARRL-SCR
Created by N3FJP's School Club Roundup Contest Log
Version 1.6 www.n3fjp.com

Total Contacts = 27
Total Points = 2,106

Operating Period: 2017/10/16 19:01 - 2017/10/19 13:58

Total Contacts by Band and Mode:

| Band | CW | Phone | Dig | Total | % |
|---|---|---|---|---|---|
| 40 | 0 | 4 | 0 | 4 | 15 |
| 20 | 0 | 18 | 0 | 18 | 67 |
| 2 | 0 | 4 | 0 | 4 | 15 |
| 70 | 0 | 1 | 0 | 1 | 4 |
| | -- | ----- | --- | ----- | --- |
| Total | 0 | 27 | 0 | 27 | 100 |

Total Contacts by State \ Prov:

| State | Total | % |
|---|---|---|
| NY | 5 | 19 |
| | 4 | 15 |
| SC | 3 | 11 |
| TX | 3 | 11 |
| GA | 2 | 7 |
| OH | 2 | 7 |
| AK | 1 | 4 |
| CA | 1 | 4 |
| FL | 1 | 4 |
| IN | 1 | 4 |
| ND | 1 | 4 |
| ON | 1 | 4 |
| PA | 1 | 4 |
| WA | 1 | 4 |

Total = 13

Total Contacts by Country:

| Country | Total | % |
|---|---|---|
| USA | 21 | 78 |
| Alaska | 1 | 4 |
| Bonaire | 1 | 4 |
| Brazil | 1 | 4 |
| Canada | 1 | 4 |
| Panama | 1 | 4 |
| Portugal | 1 | 4 |

Total = 7

Total Contacts by Continent:

| Continent | Total | % |
|---|---|---|
| NA | 24 | 89 |
| SA | 2 | 7 |
| EU | 1 | 4 |

Total = 3

Total Contacts by CQ Zone:

| CQ Zone | Total | % |
|---|---|---|
| 05 | 13 | 48 |
| 04 | 7 | 26 |
| 03 | 2 | 7 |
| 01 | 1 | 4 |
| 07 | 1 | 4 |
| 09 | 1 | 4 |
| 11 | 1 | 4 |
| 14 | 1 | 4 |

Total = 8

# The Early Days of Radio - The Magnetic Detector

Jerry Pilate, N2WGF

In our prior discussion we learned about the Coherer, invented in around 1890, probably one of the first devices used to detect radio signals over long distances. It was simple, and it worked. It did however have quit a few problems. It depended upon an old-style telegraph sounder to convert the radio signals into clicks so that they could be heard and interpreted. It was not all that sensitive, but would be affected by noise or spurious electromagnetic signals that would cause it to click randomly. It could not be used to transmit anything other than Morse code. ***Ok…..where do we go from here Magee err! Maggie?***

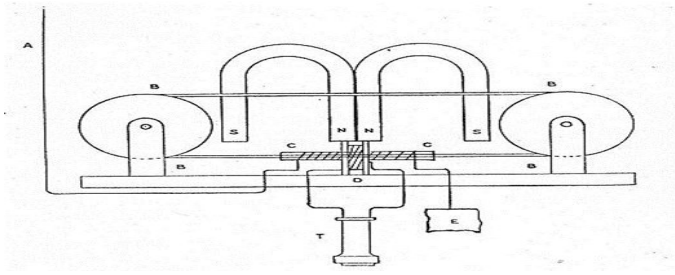
The Magnetic Detector commonly known at the Maggie is the next stop in our journey to trace the evolution of radio. Sometimes around 1896 a scientist by the name of Ernest Rutherford figured out a way to detect radio wave by using a magnetized iron needle. When the needle was wrapped in a coil of wire that was exposed to radio waves the thing would demagnetize, thus detecting the radio wave. OK Great, but the needle had to be magnetized every time it detected something, now we have a "one click" detector of sorts, fun maybe, useful for radio not so much. Incidentally the process involved a property of iron or ferro magnetic materials caller hysteresis (something for a later discussion). The obvious solution would be to add a rotating magnet to the mix to "charge" the needle after it detected something. Problem with that was the "detector" could not detect while it was charging.

Marconi was not very happy with the performance of the coherer detector since it was much to unreliable for proper radio communications over long distances. He knew that the magnetic detector had possibilities if he could get the thing to work the way he needed to. He worked up a device using a loop of iron wire, some coils, some magnets a couple of ebonite disks or pulleys and a clockwork motor.

One of the coils was connected to the antenna, the other coil was connected to a standard old-fashioned telephone earpiece. He wrapped the iron wire around the two pulleys, rigged them up so that the clockwork motor would turn the pulleys to drag the wire through the magnets and a reliable and sensitive magnetic detector was born.

The following is a passage I copied from Wikipedia. This explains how the Maggie works better than I can. There are a whole lot more technical details…I am saving that for another story.

Marconi Magnetic Detector ( London)



A) Antenna wire, (B,B) Iron band around pulleys, (C, C) RF excitation winding on glass tube through which the iron band travels, (D) Audio pickup winding, (E) Ground-plate, (S, N) Permanent magnets, (T) Telephone receiver.

See drawing at above. The Marconi version consisted of an endless iron band (B) built up of 70 strands of number 40 gage silk-covered iron wire. In operation, the band passes over two grooved pulleys rotated by a wind-up clockwork motor. The iron band passes through the center of a glass tube which is close wound with a single layer along several millimeters with number 36 gage silk-covered copper wire. This coil (C) functions as the radio frequency excitation coil. Over this winding is a small bobbin wound with wire of the same gauge to a resistance of about 140 ohms. This coil (D) functions as the audio pickup coil. Around these coils two permanent horseshoe magnets are arranged to magnetize the iron band as it passes through the glass tube.

How it works

The device works by hysteresis of the magnetization in the iron wires. The permanent magnets are arranged to create two opposite magnetic fields each directed toward (or away) from the center of the coils in opposite directions along the wire. This functions to magnetize the iron band along its axis, first in one direction as it approaches the center of the coils, then reverse its magnetism to the opposite direction as it leaves from the other side of the coil. Due to the hysteresis (coercivity) of the iron, a certain threshold magnetic field (the coercive field, Hc) is required to reverse the magnetization. So the magnetization in the moving wires does not reverse in the center of the device where the field reverses, but some way toward the departing side of the wires, when the field of the second magnet reaches Hc. Although the wire itself is moving through the coil, in the absence of a radio signal the location where the magnetization "flips" is stationary with respect to the pickup coil, so there is no flux change and no voltage is induced in the pickup coil.

The radio signal from the antenna (A) is received by a tuner (not shown) and passed through the excitation coil C, the other end of which is connected to ground (E). The rapidly reversing magnetic field from the coil exceeds the coercivity Hc and cancels the hysteresis of the iron, causing the magnetization change to suddenly move up the wire to the center, between the magnets, where the field reverses. This had an effect similar to thrusting a magnet into the coil, causing the magnetic flux through the pickup coil D to change, inducing a current pulse in the pickup coil. The audio pickup coil is connected to a telephone receiver (earphone) (T) which converts the current pulse to sound.

The radio signal from a spark gap transmitter consisted of pulses of radio waves (damped waves) which repeated at an audio rate, around several hundred per second. Each pulse of radio waves produced a pulse of current in the earphone, so the signal sounded like a musical tone or buzz in the earphone.

Technical details

Magnetic detector in use

The iron band was turned by a mainspring and clockwork mechanism inside the case. Differing values have been given for the speed of the band, from 1.6 to 7.5 cm per second; the device could probably function over a wide range of band speeds. The operator had to keep the mainspring wound up, using a crank on the side. Operators would sometimes forget to wind it, so the band would stop turning and the detector stop working, sometimes in the middle of a radio message.

The detector produced electronic noise that was heard in the earphone as a "hissing" or "roaring"

sound in the background, somewhat fatiguing to listen to. This was Barkhausen noise due to the Barkhausen effect in the iron. As the magnetic field in a given area of the iron wire changed as it moved through the detector, the microscopic domain walls between magnetic domains in the iron moved in a series of jerks, as they got hung up on defects in the iron crystal lattice, then pulled free. Each jerk produced a tiny change in the magnetic field through the coil, and induced a pulse of noise.

Because the output was an audio alternating current and not a direct current, the detector could only be used with earphones and not with the common recording instrument used in coherer radiotelegraphy receivers, the siphon paper tape recorder.

In the Handbook Of Technical Instruction For Wireless Telegraphists by: J. C. Hawkhead (Second Edition Revised by H. M. Dowsett) on pp 175 are detailed instructions and specifications for operation and maintenance of Marconi's magnetic detector.

References

Modified from

Magnetic detector. (2017, October 21). In *Wikipedia, The Free Encyclopedia*. Retrieved 00:51, November 20, 2017, from

Marconi's wireless magnetic detector (London)

# Amateur Radio Operator's Code of Conduct

### *The Radio Amateur is*

**CONSIDERATE**...He/[She] never knowingly operates in such a way as to lessen the pleasure of others.

**LOYAL**...He/[She] offers loyalty, encouragement and support to other amateurs, local clubs, the IARU Radio Society in his/[her] country, through which Amateur Radio in his/[her] country is represented nationally and internationally.

**PROGRESSIVE**...He/[She] keeps his/[her] station up to date. It is well-built and efficient. His/[Her] operating practice is above reproach.

**FRIENDLY**...He/[She] operates slowly and patiently when requested; offers friendly advice and counsel to beginners; kind assistance, cooperation and consideration for the interests of others. These are the marks of the amateur spirit.

**BALANCED**...Radio is a hobby, never interfering with duties owed to family, job, school or community.

**PATRIOTIC**...His/[Her] station and skills are always ready for service to country and community.

*- adapted from the original Amateur's Code, written by Paul M. Segal, W9EEA, in 1928*

# Local Public Service Nets

from "New York City District ARES." *New York City District ARES*, New York City District ARES, 2017, aresnyc.org/public-service-nets/.

*If you have a favorite net, know of net that should be included or ones that should be left out please contact us. This list can be very useful if we all help to make it great.*

---

**Public Service Nets**

- NYC District ARES Net
  - Monday @ 8:30PM on NC1 – W2ABC (VHF) 147.270Mhz +600Khz 141.3 PL
  - (Back-up repeater: CW1 – KC2LEB / 440.550 / +5Mhz / 141.3 PL)
- County ARES Nets
  - Bronx: TBA
  - Kings: Sunday @ 8:00pm on WA2JNF 446.675 Mhz, -5 Mhz, 114.8 PL Tone
  - Queens: (Day/Time TBA) on N2NSA 443.300 +5Mhz, 123.0 PL Tone
  - New York: Tuesday @ 8:30pm on W2ABC 147.270 Mhz, +600 Khz, 141.3 PL Tone
  - Richmond: (Day TBA) @9:00pm on WA2IAF 146.880 Mhz -600Khz 141.3 PL Tone

**National Traffic System (NTS) Nets**

- Big Apple Traffic Net: Daily @ 8:00pm on 440.600 +5Mhz PL 141.3
- New Jersey: VHF (Early): Daily @ 7:30pm on 146.895 -600 kHz PL 151.4
- Hudson Valley: Daily @ 7:30pm on 146.970 -600 kHz PL 100.0
- Nassau County: Daily @ 7:30pm on 146.805 -600 kHz PL 136.5
- Southern District: Daily @ 9:30pm on 147.060 +600 kHz PL 114.8
- New Jersey: VHF (Late): Daily @ 10:30pm 146.700 -600 kHz PL 141.3

## NYC Local Area Nets

### Sunday Nets

| Time | Net Name | Freq | Offset | PL | Type | Notes |
|---|---|---|---|---|---|---|
| 11:00 | Brooklyn 10-Meter | 28.380 | | | Ragchew | |
| 19:30 | Nassau County VHF Traffic | 146.805 | -600 | 136.5 | ARRL NTS | |
| | New Jersey VHF Traffic Net | 146.895 | -600 | 151.4 | ARRL NTS | Echolink available |
| | JSARS Traffic Net | 146.910 | -600 | 127.3 | ARRL NTS | Jersey Shore ARS |
| | Hudson Valley Net | 146.970 | -600 | 100 | ARRL NTS | National Traffic System |
| 20:00 | Central NJ traffic Net | 146.76 | -600 | 156.7 | ARRL NTS | |
| | Splitrock Tech Net | 146.985 | -600 | 131.8 | Information | Tech Net & Swap |
| | Big Apple Traffic Net | 440.600 | +5 | 141.3 | ARRL NTS | National Traffic System |
| 21:30 | Southern District Net | 147.060 | +600 | 114.8 | ARRL NTS | Southern District of NYS |
| 22:00 | Union County Traffic Net | 147.255<br>449.975 | +600<br>-5 | 141.3<br>141.3 | ARRL NTS | W2LI<br>Linked to 147.255 and 147.285 |

## Monday Nets

| Time | Net Name | Freq | Offset | PL | Type | Notes |
|---|---|---|---|---|---|---|
| 19:30 | Nassau County VHF Traffic | 146.805 | -600 | 136.5 | ARRL NTS | |
| | Yonkers General Info Net | 146.865 | -600 | 110.9 | Ragchew | W2YRC/Echolink available |
| | New Jersey VHF Traffic Net | 146.895 | -600 | 151.4 | ARRL NTS | Echolink available |
| | JSARS Traffic Net | 146.910 | -600 | 127.3 | ARRL NTS | Jersey Shore ARS |
| | Hudson Valley Net | 146.970 | -600 | 100 | ARRL NTS | National Traffic System |
| 20:00 | Near and Far Net | 145.47 | -600 | 167.9 | Ragchew | Echolink available |
| | Central NJ traffic Net | 146.76 | -600 | 156.7 | ARRL NTS | |
| | TCRA Ragchew | 147.225 | +600 | 141.3 | Ragchew | Only 4th Mon of Month |
| | Big Apple Traffic Net | 440.600 | +5 | 141.3 | ARRL NTS | National Traffic System |
| 20:30 | LIMARC Swap n Shop | 146.850 | -600 | 135.5 | Information | Includes ARRL Audio News |
| | New York City District ARES Net | 147.270 | | 141.3 | Roll Call | |
| | ARECS | 449.025 | -5 | 123 | Roll Call | FDNY Net (linked repeater) |
| 21:00 | BARA 10-m Net | 28.375 | USB | | Ragchew | 10-m Net (HF Simplex) |
| | Passaic County ARES Net | 443.450 | +5 | 141.3 | Roll Call | |
| 21:30 | Southern District Net | 147.060 | +600 | 114.8 | ARRL NTS | Southern District of NYS |
| 22:00 | Union County Traffic Net | 147.255<br>449.975 | +600<br>-5 | 141.3<br>141.3 | ARRL NTS | W2LI<br>Linked to 147.255 and 147.285 |

## Tuesday Nets

| Time | Net Name | Freq | Offset | PL | Type | Notes |
|---|---|---|---|---|---|---|
| 09:00 | CBS Retirees | 147.060 | +600 | 114.8 | Ragchew | Old geezers |
| 19:30 | Nassau County VHF Traffic | 146.805 | -600 | 136.5 | ARRL NTS | |
| | New Jersey VHF Traffic Net | 146.895 | -600 | 151.4 | ARRL NTS | Echolink available |
| | JSARS Traffic Net | 146.910 | -600 | 127.3 | ARRL NTS | Jersey Shore ARS |
| | Hudson Valley Net | 146.970 | -600 | 100 | ARRL NTS | National Traffic System |
| 20:00 | Central NJ traffic Net | 146.76 | -600 | 156.7 | ARRL NTS | |
| | NJ ARES Monthly Net | 146.895 | -600 | 151.4 | Roll Call | Only 2nd Tue of Month |
| | Big Apple Traffic Net | 440.600 | +5 | 141.3 | ARRL NTS | National Traffic System |
| 20:30 | NYC / Bronx ARES | 147.270 | +600 | 141.3 | Roll Call | W2ABC Repeater Linked to FL |
| 21:00 | QCWA News Net | 147.045 | +600 | 67 | Information | Includes ARRL Audio News |
| 21:30 | Southern District Net | 147.060 | +600 | 114.8 | ARRL NTS | Southern District of NYS |
| 22:00 | Union County Traffic Net | 147.255<br>449.975 | +600<br>-5 | 141.3<br>141.3 | ARRL NTS | W2LI<br>Linked to 147.255 and 147.285 |

## Wednesday Nets

| Time | Net Name | Freq | Offset | PL | Type | Notes |
|---|---|---|---|---|---|---|
| 19:00 | DEARS “Fun Net” | 147.270 | -600 | 136.5 | Ragchew | Only on the 4th Wed of month |
| 19:30 | Nassau County VHF Traffic | 146.805 | -600 | 136.5 | ARRL NTS | |
| | New Jersey VHF Traffic Net | 146.895 | -600 | 151.4 | ARRL NTS | Echolink available |
| | JSARS Traffic Net | 146.910 | -600 | 127.3 | ARRL NTS | Jersey Shore ARS |
| | Hudson Valley Net | 146.970 | -600 | 100 | ARRL NTS | National Traffic System |
| 20:00 | Central NJ traffic Net | 146.76 | -600 | 156.7 | ARRL NTS | |
| | Big Apple Traffic Net | 440.600 | +5 | 141.3 | ARRL NTS | National Traffic System |
| 20:30 | Queens ARES Net | 440.550 | +5 | 141.3 | Roll Call | |
| 21:00 | Kings Co Tech Net | 146.730 | -600 | 88.5 | Information | 1nd & 4th Wed of Month Q/A |
| | BARA 2-m Net | 146.790 | -600 | 141.3 | Ragchew | |
| 21:30 | Southern District Net | 147.060 | +600 | 114.8 | ARRL NTS | Southern District of NYS |
| 22:00 | Union County Traffic Net | 147.255<br>449.975 | +600<br>-5 | 141.3<br>141.3 | ARRL NTS | W2LI<br>Linked to 147.255 and 147.285 |

## Thursday Nets

| Time | Net Name | Freq | Offset | PL | Type | Notes |
|---|---|---|---|---|---|---|
| 09:00 | CBS Retirees | 147.060 | +600 | 114.8 | Ragchew | Old geezers |
| 19:30 | Nassau County VHF Traffic | 146.805 | -600 | 136.5 | ARRL NTS | |
| | New Jersey VHF Traffic Net | 146.895 | -600 | 151.4 | ARRL NTS | Echolink available |
| | JSARS Traffic Net | 146.910 | -600 | 127.3 | ARRL NTS | Jersey Shore ARS |
| | Hudson Valley Net | 146.970 | -600 | 100 | ARRL NTS | National Traffic System |
| 20:00 | Central NJ traffic Net | 146.76 | -600 | 156.7 | ARRL NTS | |
| | Big Apple Traffic Net | 440.600 | +5 | 141.3 | ARRL NTS | National Traffic System |
| 20:30 | BARA 440-Net | 444.100 | +5 | 141.3 | Ragchew | Bergen ARA |
| 21:00 | BARA Tech Net | 146.835 | -600 | 151.4 | Information | Technical Q/A |
| 21:30 | Southern District Net | 147.060 | +600 | 114.8 | ARRL NTS | Southern District of NYS |
| 22:00 | Union County Traffic Net | 147.255<br>449.975 | +600<br>-5 | 141.3<br>141.3 | ARRL NTS | W2LI<br>Linked to 147.255 and 147.285 |

## Friday Nets

| Time | Net Name | Freq | Offset | PL | Type | Notes |
|---|---|---|---|---|---|---|
| 19:30 | Nassau County VHF Traffic | 146.805 | -600 | 136.5 | ARRL NTS | |
| | New Jersey VHF Traffic Net | 146.895 | -600 | 151.4 | ARRL NTS | Echolink available |
| | JSARS Traffic Net | 146.910 | -600 | 127.3 | ARRL NTS | Jersey Shore ARS |
| | Hudson Valley Net | 146.970 | -600 | 100 | ARRL NTS | National Traffic System |
| 20:00 | Central NJ traffic Net | 146.76 | -600 | 156.7 | ARRL NTS | |
| | ARRL Audio News | 147.255 | +600 | 141.3 | Information | Listen only |
| | Big Apple Traffic Net | 440.600 | +5 | 141.3 | ARRL NTS | National Traffic System |
| 21:30 | Southern District Net | 147.060 | +600 | 114.8 | ARRL NTS | Southern District of NYS |
| 22:00 | Union County Traffic Net | 147.255<br>449.975 | +600<br>-5 | 141.3<br>141.3 | ARRL NTS | W2LI<br>Linked to 147.255 and 147.285 |

## Saturday Nets

| Time | Net Name | Freq | Offset | PL | Type | Notes |
|---|---|---|---|---|---|---|
| 19:30 | Nassau County VHF Traffic | 146.805 | -600 | 136.5 | ARRL NTS | |
| | New Jersey VHF Traffic Net | 146.895 | -600 | 151.4 | ARRL NTS | Echolink available |
| | JSARS Traffic Net | 146.910 | -600 | 127.3 | ARRL NTS | Jersey Shore ARS |
| | Hudson Valley Net | 146.970 | -600 | 100 | ARRL NTS | National Traffic System |
| 20:00 | Central NJ traffic Net | 146.76 | -600 | 156.7 | ARRL NTS | |
| | Big Apple Traffic Net | 440.600 | +5 | 141.3 | ARRL NTS | National Traffic System |
| 21:30 | Southern District Net | 147.060 | +600 | 114.8 | ARRL NTS | Southern District of NYS |
| 22:00 | Union County Traffic Net | 147.255<br>449.975 | +600<br>-5 | 141.3<br>141.3 | ARRL NTS | W2LI<br>Linked to 147.255 and 147.285 |

# Garden School Amateur Radio Club

## Scholarship Opportunities

There are many opportunities for students who are Licensed Amateur Radio Operators out there to help with college tuition. Below is a list just some of these opportunities that are available to students in our area. Most do require that the student is a Licensed Operator. We are offering a class in February to help students get those licenses. If you are interested please contact Mr Hale at kd2lpm@jrhaleteacher.me.

- Androscoggin Amateur Radio Club Scholarship- $1,000
- The ARRL General Fund Scholarship- $2,000
- The Ernest L. Baulch, W2TX, and Marcia E. Baulch, WA2AKJ, Scholarship- $3,500
- The Richard W. Bendicksen, N7ZL, Memorial Scholarship- $2,000
- The Henry Broughton, K2AE, Memorial Scholarship- $1,000
- The L. B. Cebik, W4RNL, and Jean Cebik, N4TZP, Memorial Scholarship- $1,000
- The Dayton Amateur Radio Association Scholarship- $1,000
- The Alfred E. Friend, Jr., W4CF Memorial Scholarship- $5,000
- The Ted, W4VHF, and Itice, K4LVV, Goldthorpe Scholarship- $500
- The K2TEO Martin J. Green, Sr. Memorial Scholarship- $1,000
- The Dan Huettl, WZ7U, Memorial Scholarship- $1,000
- The Dr. James L. Lawson Memorial Scholarship- $500
- The Scholarship of the Morris Radio Club of New Jersey- $1,000
- The Victor Poor, W5SMM, Memorial Scholarship- $2,500
- The Don Riebhoff Memorial Scholarship- $1,000
- The Bill, W2ONV, and Ann Salerno Memorial Scholarship- $1,000
- The Carole J. Streeter, KB9JBR, Scholarship- $1,000
- The Robert D., W8ST, and Donna J., W9DJS, Streeter Scholarship- $1,000
- The Alan G. Thorpe, K1TMW, Memorial Scholarship Fund- $1,000
- The W1FDR Scholarship- $1,000
- The Betty Weatherford, KQ6RE, Memorial Scholarship- $1,000
- The William C. Winscott, N6CHA, Memorial Scholarship- $2,500
- The YASME Foundation Scholarship- $3,000
- Yankee Clipper Contest Club Youth Scholarship- $1,200

# Our Contacts - Worldwide, USA & Canada