



PCARA Update



Volume 9, Issue 7

Peekskill / Cortlandt Amateur Radio Association Inc.

July 2008

We rode the wild waves

Field Day 2008 went well but the turnout was a bit sparse. The weather cooperated until the final hour*, when it decided it would liven things up a bit with some **lightning**, just as we were taking down the tri-band HF Yagi.



The new web site for PCARA (<http://www.pcara.org>) is up and running, so check it out and send in any

comments, questions, or suggestions.

PCARA will be participating in the September ARRL VHF QSO Party, September 13-14, 2008. Ray, W2CH and Marylyn, KC2NKU have graciously volunteered their home station for use during the contest. Details will be announced at the September 7, 2008 meeting at Hudson Valley Hospital Center.

Enjoy the summer!

- 73 de Greg, KB2CQE

* [The weather cooperated? Was Greg at the same Field Day event as your editor? We were dehydrated by



PCARA members at the recent Bergen ARA Hamfest, May 31.

the heat, washed away by the rain then blown away by a sudden squall on Saturday... See report on page 2. -Ed.]

Net night

PCARA's weekly net takes place on **Thursday** evenings at 8:00 p.m. You can call in to the net on the 2 meter repeater, 146.67 MHz, -0.6 MHz, 156.7Hz PL. PCARA's nets are normally under the guidance of net control Karl, N2KZ.

PCARA Officers

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Joe WA2MCR with Alan, operating the 10/15/20 meter HF station at Field Day 2008.

Field Day 2008

This year's PCARA Field Day was the result of many weeks' planning effort by Joe WA2MCR and Bob N2CBH. Joe had been hoping to improve the HF antennas using tower sections offered by Kevin, N2KZE, but unfortunately the transport arrangements did not work out as Bob had only just got his truck back from the auto shop.

Loading began on Saturday morning, June 28 with antennas, masts, generators and tents transferred from Joe's storage onto Bob's truck. Next stop was Walter Panas High School in Croton Avenue, where Joe had once again obtained permission for PCARA to operate around the clock. This year, we were on more familiar ground than our first visit in 2007, when the High School location was brand new.

Antennas: We decided to use a similar antenna arrangement to the previous year. Joe's Hy-Gain TH3-JRS tribander was pushed up on a rotating mast, supported by guy ropes and step ladder. The multi-band



Joe WA2MCR and Bob N2CBH busy erecting the Hy-Gain TH3Jr triband beam. Note the coil of coax fastened to the boom. After the antenna was raised into the air, it had to be lowered again to release that carefree coil of coax!

40-to-10 meter dipole went up between one of the lighting towers and a tall tree, while the G5RV antenna was pulled up between two of the lighting towers. During these antenna efforts, Jerry WA2ZOA showed his prowess with the tennis-ball antenna launcher owned by Ray W2CH. Despite the wind, Jerry successfully hit the lighting towers square on with the tennis ball on several occasions.

Equipment: For the VHF/UHF station, Ray W2CH had some innovations. Joe's 6 meter beam plus Ray's Yagi antennas for 144 MHz, 430 MHz and 220 MHz were erected on NM9J's J-Beam portable mast –



Night shot of the VHF station equipment [photo by W2CH].

which is now over thirty years old. Ray had brought sufficient equipment to run 100 watts output on all bands between 6 meters and 430 MHz. In addition to his Icom IC-706 MkIIG for 6 meters, Ray had his 'new' Yaesu FT-736 VHF/UHF transceiver plus Mirage amplifiers for 2 meters, 220 and 430 MHz.

For the first HF station, Joe was once again using his Yaesu FT920 connected to the Hy-Gain beam. This station gave a very good account of itself on 20 meters with some unexpected runs, Sunday on 15 meters and 10 meters, taking full advantage of the rotary beam antenna. Joe's station could also make data contacts using software on the the logging computer.

The second HF station was using NM9J's Icom IC-706 MkIIG, with both the G5RV and multiband dipole antennas available. Most of the activity was on 40 meters, both day and night. With two antennas oriented at right angles to each other, it was possible to take advantage of different signal strengths from different directions.

Weather: Our first year's operation at Walter Panas had coincided with near-perfect Field Day weather. Unfortunately, in 2008 the weather was not so kind. Set-up on the Saturday was in extremely hot and humid conditions. According to Weather Underground, temperatures in Northern Westchester were 85-90



Bob N2CBH operates the first HF station on 20 meters.

degrees Fahrenheit that day. This weather took its toll on the small group of people assembling stations, and we were not on the air until 3:00 p.m.



Ray W2CH and Marylyn KC2NKU operate the VHF station.

Later on Saturday there was a sudden downpour, which required the side flaps of the gazebos to be hastily attached. This was followed by a sudden squall, which lifted the center tent right over the table holding the 40 meter station. Some additional engineering in the shape of ropes and stakes was needed to hold down the tents and make sure they did not become airborne. All weekend, rumbles of thunder and static on the bands were a constant reminder of the unsettled weather conditions. On Sunday, the sky was darkening rapidly around 1:00 p.m. and a decision was made to break down the stations one hour early before everything became soaking wet.

Visitors: Joe WA2MCR had been generating publicity for PCARA by sending out letters to radio amateurs in the area, inviting them to pay a visit to Field Day. We saw several new faces, along with some old friends. One welcome visitor was Jeff, N2HPO, who had previously given a talk to PCARA on SATERN – the



Field Day 2008 featured separate tents for the three stations -- VHF station on the left and two HF stations on the right.

Salvation Army Team Emergency Radio Network.

Keeping score: Computer logging has been part of PCARA Field Days for several years, using the popular “Log-EQF” program by N3EQF. This time we had a change of software. For 2008, Joe WA2MCR had been testing the “Field Day Network Log” software from Scott, N3FJP (<http://www.n3fjp.com>). The screen layout is similar to Log-EQF, with the addition of larger letters for the visually challenged. Where this software comes into its own is with a network connection. At Field Day we had Joe’s desktop PC connected by shielded twisted pair Ethernet cable to two more notebook PCs, and all three computers were sharing the same log data file. As a result, it was possible to see QSOs being made by the other stations, as well as compare reports when the same station was worked again on a different band or mode. After the contest, there was no need to merge log files on diskette, instead the master log file could be processed immediately to produce the dupe sheet and summary sheet required by ARRL.

Conclusions: Here are PCARA’s results from past years, along with the provisional score for 2008 as submitted to ARRL.

Peekskill/Cortlandt ARA, W2NYW

	2001	2002	2003	2004	2005	2007	2008
QSOs:	450	718	733	968	853	1019	1109
Power	2 (<150W)						
Participants:	16	15	11	12	10	14	10
Total score:	1,540	2,096	2,328	2,996	2,798	2,906	3,460

Perhaps this Field Day wasn’t quite as pleasant as 2007 – the weather made sure of that. But once we had recovered from the strain of setting up three stations on superheated Saturday, the operators were able to settle down and enjoy themselves with some good conditions. Using three tents instead of two was a distinct improvement as it kept the audio levels of the neighboring stations at a lower level. The location and the antennas worked together to launch W2NYW’s RF energy all over the USA, with reports coming in from most call areas. Joe’s generator did a fine job throughout the event and Bob’s power cables stood up to the rough weather.

Thanks to all the people who assisted with setup and who came along to operate. Special thanks to those operators who kept the stations running through the night.

We claimed several bonuses, including the new “Educational Activity” bonus. Unfortunately, there were insufficient people to organize a GOTA station, and none of the youngsters who came along was old enough to operate for the youth participation bonus. Still, despite the late start and early shutdown, the overall score was an **improvement on 2007** – and there’s always next year!
- NM9J

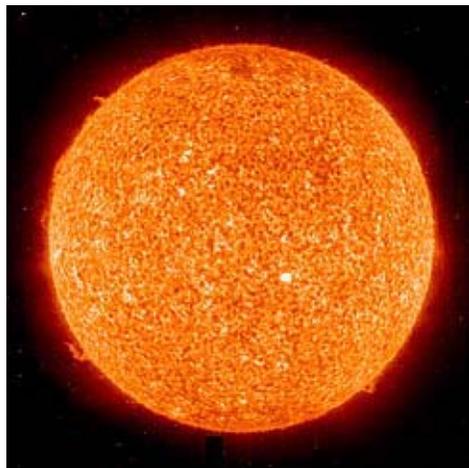
No Sunspots?

Scientists meeting at an international conference at Montana State University have been discussing the fact that the sun has been unusually quiet for the past two years. Sunspot activity is about as low as it was two years ago – and by now the sunspot count should have been climbing.

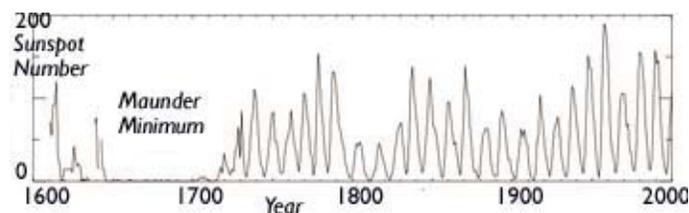
Approximately one hundred scientists from around the world gathered in early June to talk about “Solar Variability, Earth’s Climate and the Space Environment.” The scientists said periods of solar inactivity are normal, but this period has gone on longer than usual. Solar activity refers to phenomena like sunspots, solar flares and solar eruptions. These phenomena create the “space weather” that can disrupt satellites in space and technology on earth. Sunspots also affect propagation through the ionosphere, as radio amateurs are all familiar with.

The last solar cycle reached its peak in 2001 and is believed to be just ending now. The next cycle is just beginning and is expected to reach its peak sometime around 2012 — assuming the eleven year cycle continues to repeat.

The present lack of sunspots is of interest because during previous periods of low activity there is evidence that the earth cools down. Two periods of low activity in the early 19th century have been linked to cold spells. And during an earlier event called the “Maunder



The sun has been nearly sunspot-free for the past two years. [Photo - NASA]



Graph shows annual number of sunspots visible, from the year 1600 to 2000. There were almost no sunspots during the Maunder Minimum. [NASA graph]

Minimum” there was low sunspot activity for around 50 years, coinciding with a “little ice age”. The Maunder Minimum lasted from 1645 to 1715 and is named after the solar astronomer Edward W. Maunder who found the stretch of almost no sunspots by studying records of the period. Around that time, the River Thames froze over in winter, allowing people to skate on the ice and even hold frost fairs on the River.

Is it time to get out the winter woolies and dust off the ice skates? Don’t be in too much of a rush... the scientists just think that next cycle’s spots are a little late appearing, and the sun will soon be back to its usual lively state. They also believe that solar activity has less effect on earth’s climate than it did four hundred years ago, when there were a lot less people, crops and animals than today.

Essential₂ Field Day-III

This is a further episode in the occasional series where we look at chemical products that are indispensable to the radio

amateur. The American Chemistry Council’s “Essential₂” campaign seeks to explain how the chemical industry is “essential₂” our lives. The campaign resumed in recent months with full-page ads in the Sunday color magazines that were quite appropriate for Field Day...

“Essential₂ aaah! It is the plastic pipes, the chlorination technology, the things that help make water safe and refreshing. It is American Chemistry.”

One of the other essentials of Field Day is the gasoline powered generator that runs through the night supplying 120 volt AC. In the past we have looked at gasoline additives that can prevent gum formation and clogging of carburetor jets and fuel injectors. This is especially important when a small gasoline engine is stored for months on end, then called on to run for the first contest of the year or the start of the growing season. (See PCARA Update, June 2007.)

An equally important ingredient for any gasoline engine is the **motor oil** which acts as lubricant, allowing moving components to slide past each other. It



Drinking water was an essential part of this year’s hot Field Day.

does this by coating the metal surfaces with a thin layer of liquid oil, preventing the moving metal parts from touching each other and seizing up. In a four-cycle engine, the lubricating oil is stored and circulated separately from the gasoline. This oil may also be involved in removing heat from the engine and helps to carry small particles of metal and carbon away from the moving surfaces. If the gasoline contains sulfur, combustion products could include sulfuric acid – and engine oil can help to neutralize such acids.

But what is in motor oil, and what are those odd numbers on the container?

Engine oil has two basic ingredients: base oil and an additive package. Around 85% of motor oil is a heavy hydrocarbon base oil produced by distilling and refining crude oil. Some base oils are chemically synthesized, or the product might contain a mixture of both natural and synthetic oils. Various processes are involved in creating the base oil from crude, including “hydrocracking” where the oil is treated at high temperature with hydrogen and a catalyst. The company I work for used to manufacture hydrocracking catalysts, but that part of the organization has since been transferred to Albemarle.

Temperature performance of motor oils is a critical matter — oils which are thin enough to be pumped around a cold engine might show an unacceptable fall in viscosity as the engine warms up.

A simple numbering system specified by the Society of Automotive Engineers (SAE) describes the viscosity of motor oil, and is known as the oil’s “weight”. A simple standard base oil with no special additives might have a standard weight of “30” — it would then be described as SAE 30. Higher numbers

would indicate a higher viscosity (e.g. 50) and lower numbers indicate a lower viscosity (e.g. 5 or 10). These viscosities are measured at 100 degrees Centigrade or 212 degrees Fahrenheit, being typical



On the left is a single-weight oil, rated SAE 30. On the right is a multigrade oil rated SAE 5W-30.

of the engine’s running condition.

An oil’s cold weather weight is measured at 0 degrees Fahrenheit and is indicated by the letter “W” (for winter) after the number, for example 10W. An oil that allows the engine to turn over easily at winter

temperatures needs a low cold viscosity, such as 5W or 10W. However, as the engine warms up, such a base oil would thin out so much that it would be almost useless at preventing the metal parts from sticking together. We need the oil to increase in effective viscosity at higher temperatures, so its warm weather weight might increase to 30 or 40. This is achieved in multigrade oil by including additives that increase viscosity as the temperature rises. These viscosity index improvers (VIIs) include polymers such as poly(methyl methacrylate) and ethylene-propylene copolymers. At low temperatures, the polymer molecules are coiled up into tiny balls that have little effect on viscosity. As the oil warms up, the coils unwind into strands which are much longer than the oil molecules, impeding their flow and increasing the viscosity. This is the magic behind such multigrade oils as SAE 5W-30 or 10W-30.

There are other additives in motor oil. Desirable capabilities include detergent properties to neutralize acids, dispersant abilities to keep soot at bay and antioxidant abilities to resist sludge formation. One versatile ingredient is a metal phenoxide — these compounds act as bases, neutralizing the acids that form from sulfur compounds in the gasoline. They also act as detergents to suspend soot and metal particles until they can be removed by the oil filter, and as antioxidants to prevent formation of sludge.

Antiwear compounds are part of the additive package. Examples include zinc dialkyldithiophosphate or molybdenum disulfide, which form protective layers on the metal surfaces. They are present in case the oil film should break down due to very high temperatures or pressures. They can also act as antioxidants.

Unfortunately, the additive package wears out as the oil is used. Under adverse conditions, the viscosity index improvers can break down, so their effect is reduced. Detergents and dispersants get used up clinging to particles that are too small for the oil filter to remove. And bases are consumed neutralizing acids.

All in all, it’s best to follow the manufacturer’s recommendation, changing the oil at regular intervals. And don’t forget to recycle that used oil — with crude oil costing \$145 a barrel (= 42 gallons), the base oil is useful after the additive package is worn out — and can still be put to good use.

- NM9J

Well done Ken

PCARA member Kenneth H Lee – who began his amateur radio career with the callsign KC2PUI, and who was known to most of us as **K1KHL** – recently upgraded to Extra and since June 27 has a brand new one-by-two vanity call of **W1YJ**.

Peekskill / Cortlandt Amateur Radio Association

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Newsletter contributions are always very welcome!

Archive: <http://home.computer.net/~pcara/newslett.htm>

PCARA Information

PCARA is a **Non-Profit Community Service Organization**. PCARA meetings take place the first Sunday of each month* at 3:00 p.m. in Dining Room B of the Hudson Valley Hospital Center, Route 202, Cortlandt Manor, NY 10567. Drive round behind the main hospital building and enter from the rear (look for the oxygen tanks). Talk-in is available on the 146.67 repeater. *Apart from holidays.

PCARA Repeaters

W2NYW: 146.67 MHz -0.6, PL 156.7Hz

KB2CQE: 449.925MHz -5.0, PL 179.9Hz

(IRLP node: **4214**)

N2CBH: 448.725MHz -5.0, PL 107.2Hz

PCARA Calendar

Note summer break! - Next meeting:

Sun Sept 7: PCARA meeting, Hudson Valley Hospital Center, 3:00 p.m.

Sept 13-14: ARRL VHF September QSO Party.

Hamfests

Sun Jul 13: Sussex County ARC Hamfest, Sussex County Fairgrounds, Plains Rd. off Rt. 206, Augusta N.J. 8:00 a.m.

Sun Aug 10: Tri-State ARA Hamfest. Matamoras Airport Park, Matamoras, PA. 8:00 a.m.

Sat Aug 16: Ramapo Mountain ARC, American Legion Hall, 65 Oak Street, Oakland, NJ. 8:00 a.m.

Sun Sept 14: Candlewood ARA Hamfest, Edmond Town Hall, Newtown, CT. 8:30 a.m.

VE Test Sessions

Jul 6: Yonkers ARC, Yonkers PD, 1st Precinct, E Grassy Sprain Rd, 8:30 a.m. Contact D. Calabrese, (914) 667-0587.

Jul 10: WECA, Westchester Co Fire Trg Center, 4 Dana Rd, Valhalla NY. 7:00 p.m. Contact: Stanley Rothman, (914) 831-3258.

Jul 28: Columbia University, 2960 Broadway, 115 Havemeyer Hall, New York. 6:30 p.m. Contact Alan Crosswell (212)854-3754.



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