MOUNTAIN SPARK GAPS

NPARC—The Radio Club for the Watchung Mountain Area

Website: http://www.nparc.org
Club Calls: N2XJ, W2FMI

VOLUME 48 NO. 5 May 2013

UPCOMING EVENTS

Regular Meetings
Mon. 6/10 7:30 PM
Salt Brook School Cafeteria

Mon. 6/24 7:30 PM
NP Rec. Dept. Workroom

Summer Kid's Day
Scheduled for 6/16
CANCELLED

Field Day
June 22 & 23

Meeting Schedule

Regular Meeting: 7:30—9:00 PM
2nd Monday of each month at the
Salt Brook School Cafeteria
Springfield Ave. and Maple St.
New Providence

Informal Project Meeting: 7:30—9:00 PM
4th Monday of each month at the
Salt Brook School Cafeteria
Springfield Ave. and Maple St.
New Providence

Everyone is Welcome
If a normal meeting night is a holiday,
we usually meet the following night.
Call the contacts below.
When Schools are closed,
Meetings are held in the Recreation
Department Meeting Room in Borough Hall

Club Officers for 2013

President: K2MUN David Berkley
908-500-9740
Vice President:KC2WUF David Bean
973-747-6116
Secretary: KC2HLA Hillary Zaenchik
908-244-6202
Treasure: K2YG Dave Barr
908-277-4283
Activities: W2PTP Paul Wolfmeyer
201-404-6914

On the Air Activities

Club Operating Frequency
145.750 MHz FM Simplex

Sunday Night Phone Net
Murray Hill Repeater (W2LI) at 9:00 PM
Transmit on 147.855 MHz
With PL tone of 141.3 Hz
Receive on 147.255 MHz
Net Control K2AL

Digital Net
First & Third Mondays 9 PM
Details as announced.

Club Internet Address

Website:http://www.nparc.org
Webmaster K2MUN David Berkley
Reflector: nparc@mailman.qth.net
Contact K2UI, Jim

MOUNTAIN SPARK GAPS

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The Watchung Mountain Area Radio Club
P.O. Box 813
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Contributing Editors:
WB2QOQ Rick Anderson
WB2EDO Jim Brown

Climatological Data for New Providence for April 2013

The following information is provided by Rick, WB2QOQ, who has been recording daily weather events at his station for the past 32 years.

TEMPERATURE -
Maximum temperature this April, 84 deg. F (April 9)
Last April(2012) maximum was 91 deg. F.
Average Maximum temperature this April, 64.0 deg. F
Minimum temperature for this April, 26 deg. F (April 2,3,4)
Last April(2012) minimum was 30 deg. F.
Average Minimum temperature this April, 40.7 deg. F
Minimum diurnal temperature range, 5 deg. (56-51 deg.) 4/29
Maximum diurnal temperature range, 38 deg. (74-36 deg.) 4/24

Average temperature this April, 52.4 deg. F
Average temperature last April, 53.5 deg. F

PRECIPITATION -
Total precipitation this April - 1.97" rain
Total precipitation last April - 2.44" rain

Maximum one day precip. event this April; April 12, 0.6" rain.
Measurable rain fell on 11 days this April, 6 days last April.
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Rick Anderson
5/9/13
243 Mountain Ave.
New Providence, NJ
(908)464-8912
rick243@comcast.net
Lat = 40 degrees, 41.7 minutes North
Long = 74 degrees, 23.4 minutes West
Elevation: 380 ft.

New Providence Memorial Day Parade

A big thanks to all who participated. Special thanks to Rick, WB2QOQ, for organizing all the marchers.

After the parade some marchers and NPARC ERT members enjoyed the hospitality of the American Legion.

PRESIDENTS COLUMN
By K2MUN

President's Column - David Berkley, K2MUN, May, 2013

As promised last month, with the last biographical column on our new officers, this column will concentrate on Field Day. Field Day is as early as possible this year since it is always scheduled on the fourth full weekend of June. This month, June 1 is the first weekend so June is a rare month where there are five full weekends. Field Day happens on June 22, starting at 1800 UTC and ending on June 23 at 2059 UTC. However, preparations for Field Day are already in progress with assignments for key jobs being hashed out, equipment located and venues reserved and advertised.

So, what is Field Day? Is it a contest; a picnic; a chance for new operators to get on the air; a public event to publicize Ham Radio; an emergency communications exercise? In fact, it is all of the above and from one club and one individual ham to another the emphasis varies. Has it always been this way?

The first Field Day was in 1933 and ran over a 27 hour period starting the second Saturday in June, 1933. The club with the most QSO's was in Illinois and recorded a total of 98 contacts. By 1936 the event was so popular that there were two Field Day weekends one in June and the other in August. It wasn't until 1941 that there was a coordinated starting time across the entire U.S. and Canada. Also, in the same year, multipliers were given to stations in areas with smaller participation or that were judged difficult to reach -- a practice that persisted until 1950.

The VHF portion of the event was introduced, starting after the WWII shutdown of all amateur radio, starting in 1946. Of course there have been multitudes of rule changes since then. The class system (we operate as a 2A club entry) was created in 1950. 10,000+ QSO's were achieved in 1976 by W1VV/1. Digital radio was introduced as a separate category in 1981 but didn't become major operating modes until 1998. Since then, with minor tweaks the rules have been fairly stable. Of course, to be sure we don't inadvertently violate the rules, some of us study each year's publication to see what has changed. In fact, there was a major change for this year, allowing setup earlier than just the 24 hour period before the start.

From it's uncertain start until now, each year has seen growth in participation with a total of more than 37,000 hams, and in excess of 2,600 separate scores formally reported, being part of Field Day last year, 2012. The number of reported QSOs ranged between 11,116 down to 1.

Statistics and history are interesting in general, but what about NPARC in particular? NPARC's first Field Day seems to be lost in the mists of time. The earliest we had in our on-line archive was 2005; very recent in the scale of things. However, in the back of a basement desk drawer, David Bean, KC2WUF (NPARC Vice President), recently unearthed a small trove of photos from 1993. These are now on-line at http://nparc.org, in the photo archive, and one is reproduced above. I can recognize a few faces but 20 years is a long time and it will be an interesting challenge to identify many of the others.

Even in 1993, NPARC Field Day was located on the Governor Livingston High School main field. A wonderful location, high up and lush with Poison Ivy. We have moved around in the field over the years, and the baseball dugout is gone, but the setups are still recognizable. After 9/11, a second location was started as an F-station, and successfully maintained for many years, at the Summit Red Cross. The recombination the two locations at the High School in 2011 created a high-point in our recent QSO record with a total of over 2000. Adding extra points for many additional activities this produced a score of over 6,000 points for first place in NJ Class 2A. For many years past we have operated in this class with 3 HF setups (one a GOTA -- or 'get on the air' station for new or inactive hams) and a VHF station. With the possible peak in sunspots this year, who can predict the results!

One amazing thing about Field Day is that the weather is always perfect. Well, it is, but this depends on your definition of 'perfect.' The insects love it, so remember bug lights and insect repellent. Sometimes the ducks love it and, on occasion, there have been ample opportunities to repeat Ben Franklin's experiments with lightning. One thing is sure, there will be ample food and plenty to do!

Next month's column will be partly a post-mortem on Field Day (June 22 - 23). This is one of the key events we sponsor as a Club and one that has introduced many hams to the thrill of concentrated, focused, radio operation. From the beginning, planning and setting up stations, operating and taking it all apart again, this is a great cooperative event. I encourage you to come to the planning meetings, contribute your expertise or just your muscle. Please come to the Field, in Berkeley Heights, behind the Governor Livingston High School over the weekend. You will enjoy every minute of it!

Digital Notes

by David Bean KC2WUF

When I last wrote, I was discussing the recent development of a new weak-signal mode LF/MF/HF. The mode is JT9 and is being developed by Joe Taylor K1JT in his WSJT-X software package. This application is being developed to make use of platform independent development tools and will eventually replace the current WSJT software. Joe Taylor plans to port all the other WSJT modes to this new software one at a time starting with JT65, I believe.

There have been 2 recent developments in the WSJT-X development:

As of May 30, 2013, they have released v1.0 of the software, thereby ending the Beta test period. With this "production" release of the software he plans on releasing software updates less often while they continue to develop more of the backend. The production release includes rig control using either the hamlib library or HRD. While hamlib is available for many different OS's and that is one of the ultimate goals of the WSJT-X project; there have been some issues using this method with certain rigs. Due to this, they have also implemented rig control through HRD (a Windows only program). Also, WSJT-X has been moved to its own application web page rather than on the WSJT page.

Laurie Cowcher VK3AMA has released a version of his Ham-Apps (JT-Utilities) that works with both JT65-HF and WSJT-X applications. He uses a command line parameter to invoke the -X version of both JT-Alert and JT-Macros. JT-Alert-X also sends spots that include signal reports back to the hamspots.net website (also authored by Laurie). This allows for a much better understanding of propagation to monitoring stations, thus allowing you to adjust your transmit power accordingly.

Laurie VK3AMA has also made some major changes to his hamspots.net pages for WSJT modes. He now has separate pages for JT65 and JT9 with the WSJT modes page containing any of the remaining WSJT modes (JT4, FSK441, ISCAT, etc.). In addition to these changes, he has band filters that can be applied to the 3 WSJT digital mode pages (WSJT Modes, JT65, JT9). These are very useful to eliminate 20 meter spots where the majority of the activity takes place. This is especially true of JT9 QSOs. Joe Taylor K1JT has requested that we try and operate on different bands on a monthly rotating schedule with the band frequency being based on the date.

One final change to hamspots.net requires you to register to use his chat features as there was one or two bad apples that were sending derogatory comments.

Finally, I'd like to happily report that Es (sporadic E) season has begun. There have been a couple of 6 meter openings for the JT65 folks, mainly Eastern US. If I was at home, I have been able to work several new 6m JT65 QSOs with 1W into my 6-meter attic dipole.

Useful Links (again)

WSJT Page - http://physics.princeton.edu/pulsar/K1JT/wsjtx.html
JT-Utilities Page - http://ham-apps.com/
PSK Reporter map - http://pskreporter.info/pskmap.html
HamSpots Home Page - http://hamspots.net/
JT65-HF Download Page - http://sourceforge.net/projects/jt65-hf/

SCIENTIFIC TIDBITS

Powerful Pull Toward New Magnets

This article excerpt is taken from an article published in “American Chemical Society Publication” and was submitted by Jim Bushnell N2TSJ

If necessity is the mother of invention, science and technology must be due soon to give birth to new materials and methods for making powerful permanent magnets. Such magnets are crucial to an enormous number of products in the automobile, electronics, power-generation, and clean-energy industries.

Currently the producers of magnets are dependent on securing rare-earth substances, such as neodymium, dysprosium, and other metals that allows magnets to be smaller but extremely powerful. Unfortunately, China controls about 90% of the world’s supply of rare-earth minerals. In 2010 China decided to substantially reduce their exports of these materials with the result that prices soared for these materials, especially for dysprosium one of the rarest rare-earth metals. This situation has cooled somewhat but has pointed up the vulnerability that this industry faces with the China monopoly on rare-earth metals. Needless to say there has been a worldwide effort to secure other sources of rare-earth metals. In the magnet industry research has been stepped up to find ways to manufacture magnets that can be more powerful yet use less rare-earth elements.

Man has been making magnets for more than 150 years. During that time, magnet makers have covered a large fraction of the periodic table searching for building blocks for magnetic materials. The rare-earth substance neodymium iron boron has been the champion for a long time. Neodymium iron boron magnets outstanding strength has made them indispensable to modern computer disk drives, a variety of large and tiny audio speakers, and many types of motors and motor generators crucial to the performance of hybrid automobiles and electricity-generating windmills.

The magnet industry seems to be moving along on several fronts. Besides making a major research effort on the improvement of the strength-to-size ratio of magnets using the current rare-earth technology, there is a huge increase in the research to find non-rare-earth materials for magnet manufacture. This “alternative magnet” research effort has shown much progress, but it is way too early to determine what system now under development will work the best.

There is also a major effort now underway to develop an efficient way to recycle rare-earth metals from used magnets in order to make new ones. This is a very complex process and so far the researches at Ames Laboratory in Iowa seem to have come up with a viable system that recovers metal that is roughly 98% pure. Their measurements comparing so-called intrinsic magnetic properties show relatively little difference between magnets made from fresh and recycled rare-earth metals. If this system can be used on a large scale, it would help considerably to reduce the demand for fresh rare-earth metals for this industry.

Magnets are crucial to our technological world and so make it vulnerable to any interruption in its supply chain. This latest threat by China regarding the availability of rare-earth metals brings that vulnerability into sharp focus. Fortunately, this industry has reacted positively to this vulnerability and is making positive progress to eliminate this threat. By so doing they are also accelerating the development of smaller stronger magnetics. It is truly amazing how much good can be generated from an impending crisis!

Jim WB2EDO

BET YOU DIDN'T KNOW

In the late 1700's, many houses consisted of a large room with only one chair. Commonly, a long wide board folded down from the wall, and was used for dining. The 'head of the household' always sat in the chair while everyone else ate sitting on the floor. Occasionally a guest, who was usually a man, would be invited to sit in this chair during a meal. To sit in the chair meant you were important and in charge. They called the one sitting in the chair the 'chair man.' Today in business, we use the expression or title 'Chairman' or 'Chairman of the Board.'