

**Mount Vernon
Amateur Radio Club
K4US**
*"PUBLIC SERVICE WITH
FUN AND FRIENDSHIP"*



Volume 19

FEBRUARY 2006

Number 02

Ye Olde RF Output

MEETING NOTICE FEBRUARY 9, 2006

7:30 PM

INOVA MOUNT VERNON HOSPITAL

2501 PARKERS LANE

ALEXANDRIA, VA 22306

Second Floor Conference Room

MVARC MEETS ON THE SECOND
THURSDAY OF EACH MONTH EXCEPT
IN DECEMBER

HAPPENINGS

February 9 - MOUNT VERNON AMATEUR RADIO CLUB monthly meeting. Held at INOVA MOUNT VERNON HOSPITAL (2nd Floor Conference Rm), 2501 Parker's Lane, 22306. 7:30 p.m. See you there!

February 7,14,21,28 - MVARC ARES NET- 146.055/146.655 **7:00 PM local time**. Come and join in!

February 25 - MVARC Breakfast will be held at The Old Country Buffet on Route 1 at 8:30 a.m. Everyone's invited to join MVARC members for breakfast. They meet the 4th Saturday of every month.

MVARC REPEATER: K4US/R
146.055 MHz INPUT/146.655 MHz
OUTPUT
PL TONE: 141.3 Hz

AUTOPATCH AVAILABLE TO
MEMBERS

MVARC HOME PAGE:
WWW.MVARC.ORG
WWW.MVARC.COM

**NOTICE--VE EXAM LOCATION
THE FEBRUARY 11, 2006 VE EXAM
WILL BE HELD AT**

**The FIRST CHRISTIAN CHURCH
2723 KING STREET
ALEXANDRIA, VA**

9:30 A.M.

**CALL JOHN, WZ4A AT 703-971-3905
FOR MORE INFO.**

Ye Olde RF Output is published monthly by the Mount Vernon Amateur Radio Club. Voluntary articles and comments are solicited.

EDITOR

David Whitney-AI4FC
808 Russell Road
Alexandria, VA 22301
703-836-1227
E-Mail:
dmwhitney@comcast.net

STAFF

Glenn Bilger-W4OCC
Frank Mackey-K4EC
Bob May-N4LBR
Bob Raevis-KT4KS
Bob Lepelletier-KI3O
Steve Schneider-K3IZ

MEET YOUR OFFICERS PRESIDENT

Carol Cutchall-WA4GFW
8908 LaGrange Street
Lorton, VA 22079
703-339-5612

E-Mail: wa4gfw@aol.com

VICE PRESIDENT

Frank Lempicki-AA4ZS
5606 Hilldale Drive
Alexandria, VA 22310
703-971-9304

E-Mail:

lempickifw@netzero.com

SECRETARY

George Coyne, N1BV
1102 Alden Road
Alexandria, VA 22308
703-780-8113

E-Mail:

georgecoyne@hotmail.com

TREASURER

John Tyburski - K2VPR
8625 Woodview Drive
Springfield, VA 22153
703-866-3554

E-Mail: k2vpr@arrl.net

COMMITTEES EDUCATION

John Forrest-WZ4A
703-971-3905

F.A.R. REP

Mary Morris-N4TCI
703-971-3905

Jeannie Rexroad-N4ZGI
703-971-0384

NET MANAGER

George Coyne-N1BV
703-780-8113

ARES

S. Schneider-K3IZ
703-780-7248

REPEATER CHAIR

Frank Mackey - K4EC
703-455-1510

REPEATER TRUSTEES

Steve Schneider-K3IZ
703-780-7248

COMMUNITY OUTREACH

Bob Raevis-KT4KS
703-765-2313

PHOTOGRAPHER

Julie Abrams-KD4WSZ
703-799-9466

PROGRAM

Bob Lepelletier-KI3O
703-912-1695

VE EXAM COORDINATOR

John Forrest-WZ4A
703-971-3905

BOY SCOUT VENTURING

CREW SPONSORSHIP

Bill Stewart-W2BSA
703-642-8942

MVARC/ CG TISCOM LIAISON

Keith McDaniel-N6JWN
703-256-3568

MVARC WEBSITE

Paul Miller-AA8O
Glenn Bilger-W4OCC
Leila Cutchall-WN4PP

Carol Cutchall-WA4GFW
Frank Mackey-K4EC



JANUARY MINUTES

By George, N1BV
Secretary

The meeting was held at the IN-OVA Mount Vernon Hospital and was called to order at 7:30 p.m. on Jan. 12 by the Vice President, Frank, AA4ZS. He then led the Pledge of Allegiance. Next, everyone introduced themselves. The November minutes, as posted on the reflector, were approved. K2VPR, gave the Treasurer's Report. As of 30 October 2005

Checking: \$1,354.89

Savings: 3,352.77

Cash on hand: 121.50

Doc Hyde fund: 1,719.80

Expenses:
Doc Hyde Plaque`` \$55.35

TOTAL ASSETS \$4,829.16

The ARES report was given by Steve, K3IO. He stated that an ARES course would be offered in the near future. It was announced that there would be a regular test session this Saturday. There were no Coast Guard Station, MARS, or Educational Committee reports.

The Repeater Committee report was provided by Dick, WA4USB. The new antenna on the George Washington Masonic Memorial Temple tower is installed and operational. The Antenna is an Andrew DB-224-E, omni directional, +6 db, 4 bay folded dipole, all metal construction, approximately 23 feet tall. feedline is Andrew LDF5-50A (7/8),

112 feet from a PolyPhaser, about 10 feet of LDF4 (1/2) to the Diplexer. The old antenna remains in place; feedline is LDF4 (1/2), 150-160 MHz. Comparison of Old - New: SWR at 146.655 1.7:1 - 1.35:1 feedline loss .8db/100' - .44db/100' Freq. Range 150-160 MHz - 140-150 MHz. We have user reports of improvements from: US 1 and VA 234 Huntsman & Fairfax County Parkway (HT, duck, inside car), Pohick Rd & Newington Forest (HT, duck, inside car), Franconia basement, HT low power, Herndon and Dulles Toll Road. How you can help We need reports on: Improvements, noticed weak coverage areas specific locations, and type of radio and antenna so that we can duplicate the environment E-mail your reports to: WA4USB@ARRL.NET. If your radio has a Tx Power Save function, please disable it when using the repeater.

Bob, KT4KS, gave the Community Outreach Report, and stated that the George Washington Special Event information was sent to QST and to Mt. Vernon. The Special Event will be on 18 and 19 February.

Bob, KI3O, presented the Program Committee report by introducing Alan Heil, Jr., former deputy director of the Voice of America, who would be presenting a history of the Voice of America.

Old Business George, N1BV, said the new draft set of By-Laws was being reviewed. He noted that an addition had been made to the previous draft to include an officer nominating committee section.

New Business It was announced that the monthly breakfast would take place on the usual date, and that there would be a licensing test this Saturday. John, WQ4L, demonstrated a "old time" ribbon broadcasting microphone. Annie, KG4DEX, and Charlie, AF4NT, were the Cookie Monsters.

Bob, KT4KS, volunteered to be the Cookie Monster in February.

GOT SOMETHING TO SELL?

John, K2VPR, says that if you got an old rig, or even a box of parts gathering dust in your basement, why not try to turn it into cash.

John, the club's treasurer, said the club will have table D5 at the Vienna Wireless Society's WINTER-FEST at the Annandale campus of Northern Virginia Community College on February 26th. You can find the table location at www.viennawireless.org/vendors.php. "Bring your stuff to sell and join us at the table for a while during the day," John said.

CAN YOU HEAR ME NOW? PART II

By Frank, K4EC

Finally, after several tries since moving the MVARC repeater to the George Washington National Masonic Memorial (GWMM) in 1996, we have an antenna location which provides coverage to the south and west directions benefiting a larger number of members.

By way of background, for many years the repeater was located at Jim Claxton's, WD4PDP, house near Route 1 and Popkins Lane on the southern slope of Beacon Hill. The antenna was mounted at the peak of the roof and had an elevation of about 220 feet above mean sea level (AMSL). The coverage to the south was fairly good and extended down towards Quantico. However, the coverage to the north side, was blocked by Beacon Hill itself, which has an AMSL of 230 feet at the road level. When conducting ARES events such as the

George Washington parade, the repeater did not provide coverage for HTs.

In 1996, the City of Alexandria Fire Department through Jeanne Rexroad, N4ZGI, offered MVARC the old 154 MHz fire repeater and antenna at the GWMM. The condition was that this repeater be available for public service and emergency events in Alexandria and that MVARC maintain the repeater. The advantage for MVARC was the repeater antenna would be located at about 430 feet AMSL, a 210 foot increase at low RF noise location. There was only one other repeater at the location operating in the VHF high band on about 166 MHz. All other repeaters were in either the 450 or 800 MHz bands.

Once at the new repeater location, we found that the VSWR was 1.7:1 at our transmit frequency and about 5:1 on our receive frequency. The fire department antenna was cut for the 150-160 MHz band. Also, the antenna, mounted on the northeast corner of the GWMM building, was shielded to the south and southwest by the metal ornament at the top of the building. The coverage to the north and west was very good, but coverage to the south was poor.

The Repeater Committee looked into replacing the antenna with one resonating in the 146 Mhz band mounted on the building in a location to provide better coverage to the south and southwest where the majority of MVARC members lived. A new commercial grade antenna would cost between \$700 to \$850 dollars. We also contacted U.S. Tower, the company that performs the antenna installations for Alexandria. Their estimate to install a new antenna at a different location on the building by 2 men was about \$1,800. The \$2,500 plus cost was a little too expensive for the MVARC treasury.

In the spring of 2005, Jeanne, N4ZGI, advised that Alexandria

was replacing its entire city radio system including some of the antennas. Dick, WA4USB, contacted U.S. Tower about installing a new MVARC repeater antenna in conjunction with the City antenna installations and they agreed.

Preparations were made and U.S. Tower obtained the antenna at a wholesale price of \$564.78. On January 6, 2006, while removing the older City antennas, the new K4US antennas was installed. Originally, the Repeater Committee had been advised that there would be an antenna mount available on the southwest corner of the building providing good coverage to the south. However, on installation day we discovered that there would not be a mount available at that location. The next closest available mount was on the northwest corner. We had to immediately decide to have the new antenna mounted at the NW or replace the old antenna on the NE. After quick calculations that the NW position would remove the building's metal ornament from the south and southwest path. They also left the old antenna in place to provide a backup antenna and perhaps provide a receive antenna should a 2nd receiver, working through a voter, be needed to keep the old receive coverage

On January 8, 2006, a work party consisting of Steve, K3IZ; Sterrett, K4MBE; Doug, WA3WEP; and Dick, WA4USB, reworked the installation of the Andrew LDF5-50 7/8 inch Helix which has half the loss of the coax on the old antenna. Measurements were taken to ensure that all parameters were acceptable and the new antenna has been placed on the repeater.

There is a dramatic improvement in coverage to the south and southwest, which was the ultimate goal. Reports have been coming in that mobiles can get into the repeater from Quantico and Fredericksburg. Locations to the south and southwest, where before you could not

hear the repeater, now provide HT coverage. Many areas are now solid in a mobile with a reasonable antenna where before you could not hear the repeater.

There appears to be a coverage hole drawing a line south from the repeater at about 178 degrees. Other reports are that the coverage is worse in the Tysons Corner area. This is a little surprising since the antenna is still clear in that direction, but about 10 feet lower than the old antenna. We had not expected that much difference in coverage in that direction. Although, K3IZ can still work the repeater on the Inner Loop of the Beltway and out the Dulles Toll road to Herndon every morning. We are still investigating the coverage and would like users to report coverage problems to Dick at wa4usb@arrl.net, giving the exact location (cross streets), the antenna type, mounting arrangement and power.

On another repeater related topic, we operate with a CTSS tone of 141.3 Hz which is always on the transmitter and usually required on the receiver input. Currently, since one or two members are still using radios which do not have CTSS encoders (hard to believe since every radio manufactured for the past 20 years has an encoder) we automatically turn off the CTSS requirement during nets, public service events and on Monday-Friday during the commuter hours: 0630-0900 and 1600-1900. The non-CTSS squelch has been reduced to the point where extraneous noise barely enters the repeater. However, some mobile signals are popping in and out without the usually mobile flutter which accompanies weak signals. This indicates that the squelch is a little too tight for clear squelch, but we cannot reduce the squelch or the extraneous noise will turn on the repeater. However, when the CTSS receive is operating the weak signal mobile flutter is present and the signals do not pop in and out.

The CTSS squelch overrides the clear squelch and provides a more sensitive receiver. As long as the repeater can hear the CTSS tone it will remain open. Therefore, for about a week trial period, we plan on having the CTSS turned on during the commuter drive time. We would appreciate reports from users to validate or not our supposition. The trial period will be announced during the next few weeks.

A side note for those with a CTSS decoder in your radio, Turn on the tone squelch feature since the repeater always transmits at CTSS tone. It will reduce the reception of intermod interference in areas where that is prone to occur. I know I find the radio much quieter and without spurious interference while driving around.

As a closing thought the final bill from U.S. Tower was for \$564.78 for the antenna (wholesale price) and \$300 labor. The \$864.78 is considerably less than the quoted price 10 years ago of \$2,500 plus.

The MVARC Repeater Committee includes: Dick, WA4USB; Doug WA3WEP; Sterrett, K4MBE; Frank, K4EC; Frank, AA4ZS

OFF THE SHELVES: THE SECRET WIRELESS WAR

By Tom, W9TZ

"When All Else Fails ... Amateur Radio". Amateur radio operators everywhere understand this wonderfully succinct anecdote about our hobby intuitively. Yet, as is the case with many similar expressions in other historical contexts, we often forget or never really learn to begin with the origins and reasons for the articulation of the sentiment. Today many hams participate in public service emergency support

functions regularly with a compelling sense of historical precedence about their efforts. But do they really know of the emotive origins championing the art of wireless radio?

Ironically, a gripping and compelling story addressing this very question has been presented to us by a member of the "greatest generation", Geoffrey Pidgeon, the author of the *The Secret Wireless War: The Story of MI6 Communications 1939-1945*, published by UP-SO, <http://www.upso.co.uk>, available for purchase from the American Radio Relay League website. To be sure, Mr. Pidgeon's overarching purpose in writing this book was to tell the untold story of another group of unsung heroes during World War II whose efforts using wireless radio were critical to the allied victory. But in the process, he reminds us of why wireless radio is important.

Nearly 400 pages in length overall, the book consists of a preface, glossary, an overview of the Enigma project, several appendices and three parts. Part I (5 chapters) provides the backdrop for the story; Part II (14 chapters) focuses on the operations and infrastructure of the MI-6 units; and Part III (17 chapters) are segments prepared by other MI-6 personnel. The author projects the nearly characteristic, self-effacing image of British reserve, and refreshingly so I might add, and apparently pursued his post-war life and career up through 1995 with no involvement with this topic. World War II (WW II) 50th anniversary celebration events in England renewed his interest leading to this book. With the stories of the Enigma machine and the ULTRA secret already told, this story focuses on the wireless communications infrastructure built to further the communications of British secret agents and the WW II signals intelligence capabilities of the British and their enemies.

The origins the story has their foundation in the years prior to World War I. The methods to communicate intelligence reports involved invisible inks, carrier pigeons, and secret couriers throughout much of recorded history. Line of sight methods of communication and later method of communication by wire (e.g. telegraph) also had their limitations. The world was ripe for a change and an advance in communications technology.

Serendipity and irony combined when an Axis power of the forthcoming Second World War, Italy, expressed little interest in the invention of the practical wireless telegraph by Italian inventor Guglielmo Marconi in the early 1900's. Undaunted by rejection, Marconi went to England to use family connections on his mother's side, the wealthy Jamison family of Irish whiskey distillers, and their support enabled him to further development of and interest in wireless radio. The British military services quickly saw the potential of this technology and formed a very close working relationship with him. Thereafter, wireless radio was quickly adopted by the major nations of the day prior to World War I (WW I). Germany in particular was eager to implement this technology as it eliminated their need to use underwater cable communication systems controlled theretofore by England. But there was no indication of the clandestine use of wireless during WWI by secret agents. By the end of WW I, wireless broadcast and two-way radio became the *sin qua non* of global communications in that era and the world had the flexibility (mobility) provided by radio. Neither the Internet nor broadcast television as we know of them today existed during that time. In this context, we can now see just how important radio would become during the second world war --- and why --- "When All Else Fails --- Amateur Radio".

How were ham radio operators used during the war? First, some hams occupied leadership roles in the MI-6. Richard Gambier-Parry, UK general sales manager of the then giant American radio company Philco, was put in charge of Section VIII (Communications) of the Secret Intelligence Service (SIS). A licensed ham radio operator (call sign G-2DV) with a wealth of technical and business contacts in the communications industry and business community, Gambier-Parry was the perfect selectee to create and operate the new SIS wireless radio arm. A colleague of Gambier-Parry's in the wireless industry and also a ham, was put in complete control of the Radio Security Service at the rank of Lt. Colonel and instructed to set up a full-time intercept station at Hanslope Park. The first two operators to arrive there were also peacetime hams and they were outfitted with the then industry leading American National HRO Communications receivers --- eventual mainstays for the RSS and all intercept work.

Second, the British built the RSS originally staffed by VI's --- "Voluntary Interceptors". VI's were hams or persons with similar capabilities and at least 1,500 hams were used during the war in this respect. For example, in September 1940 a German agent parachuted into England and was knocked temporarily unconscious when his radio receiver hit him in the head upon landing. He agreed to cooperate with the SIS by sending disinformation to the Germans. To ensure his transmissions were accurate, a British radio amateur stood close by to ensure he was sending in Morse code only what they wanted him to send. And as the British Post Office provided wireless commercial services before the war, the combination of hams in the RSS and postal resources were used for illicit signal surveillance and direction-finding activities. The RSS was created with VI's as the principal staff after

MI-5 (British Counterintelligence) approached the head of the Radio Society of Great Britain to see if hams could provide a listening watch on the short wave bands for illicit transmissions. It was believed that that enemy spies might be detected by nearby short wave listeners because of the strong ground wave and "key clicks" produced by operator's equipment. Hams were considered to be ideal for these and other tasks because of their wireless communication experience, their geographic placement throughout the British Isles, skill in constructing wireless rigs to conduct worldwide HF transmissions and, fluency with the Morse code. Morse code was considered then, as it is today, the indispensable means of communication because it was easier to communicate successfully under poor propagation conditions, and, involved the use of only the simplest of equipment. One need only look as far as the Elecraft series or SG-2020 of present day equipment to see just how small, simple yet powerful CW operations can be when combined with the right tuner and aerials. Interestingly enough, not all licensed hams found good use of their skills and many chose not to use them, especially in AXIS countries, where publications about their licensing placed them directly within the gun sights of the host nations counterintelligence services.

Third, there the British had good reasons to fear clandestine wireless radio. A discovery by hams in the 1920's, later confirmed by Marconi, affirmed that long distances could be covered using low power (QRP) on short wavelengths below 200 meters. This opened the option for the use of effective covert radio in ways theretofore not available.

How did the war affect peacetime hams? First, in 1914 before WW I, Britain took the possibility of German clandestine wireless operations seriously. To help ensure domestic security, all amateur radio operations were forbidden throughout the country. It happened again in September of 1939. In both instances, employees of the Post Office (Britain's official wireless commercial telegraphy source) were dispatched to seize and catalog ham equipment. Second, there was a ban on publications that might encourage the illegal construction of wireless receiver and transmission equipment. Third, spy scares contributed to the unfortunate prosecution of several radio amateurs who were denounced as members of the German Secret Services. Prosecutions followed.

The Secret Wireless War is a fascinating and compelling story for those with an interest in radio and I have hardly done justice to the author's efforts with this brief review.

Truth is stranger than fiction and I commend it to those with an interest to read this wonderful story.

Mount Vernon Amateur Radio Club
Post Office Box 7234
Alexandria, VA 22307