The Capitol Hill Monitor

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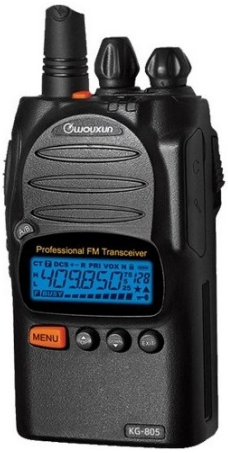
THE GMRS RENAISSANCE

by Alan Henney

We hope to have Dr. Michael Trahos, Mike Washvill and maybe Paul Bowling as guests at our Ledo's get-together on Jan. 29, 2023, to talk about GMRS in the D.C. area along with YouTube star, Andrew Leyden (Penguin 6). Please see page 5 for details.



For a $35 FCC license fee and the purchase of an inexpensive Chinese radio (potentially for less than $100), you too can enjoy the new friendlier and more affordable world of GMRS (General Mobile Radio Service), with no test, obligations or fees.

GMRS has been around for ages, starting off as Citizens Band "Class A" in 1947. It was a luxury in the 1970s when traditional CB "Class D" peaked in popularity before mobile phones became prevalent.

Back then, organizations such as REACT often sponsored GMRS repeaters which typically required dues from the users and radios costing hundreds of dollars.

But now, thanks to the work of a few individuals in the Washington area, repeaters are available for use by the public on a secondary basis at strategic locations.

Paul Bowling, Dr. Michael Trahos and Mike Washvill manage several GMRS repeaters in the area (their initials appear on page 2 beside their repeater freqs).

Why use GMRS rather than amateur radio? GMRS was designed to provide communications between people for personal type communications, Dr. Trahos explains. On the other hand, he says that amateur radio was designed for the enthusiast who is interested in the technical aspects of telecommunications with the ability to speak to other like-minded people.

GMRS has indeed taken off in the last few years. "I have seen more activity in the last two and a half years than I had seen in the previous 40 years since the REACT days of the late 1970s," says Washvill who manages six GMRS repeaters in the D.C. area.

He likens what is happening now to GMRS, with the inexpensive radios, to the boom we saw in the 1970s with the old 27 MHz CBs.

The availability of inexpensive radios — which can be keyboard or computer programmed — combined with the isolation of the pandemic and people looking for alternative family and personal communications has spurred the popularity of GMRS, both Dr. Trahos and Washvill point out.

"For many people," Dr. Trahos says, "the pandemic caused isolation depression and anxiety. I have found that the GMRS provided a very important means for people to get the needed social interaction during the pandemic isolation."

With recent uncertainty, more people are planning for disasters and are making GMRS part of their emergency plan, Bowling points out. The majority of people who ask permission to use his repeaters have both amateur radio and GMRS licenses and the majority mention using GMRS for emergency use, he said.

Prior to the availability of inexpensive and easily programmed radios, GMRS users were using higher quality and expensive commercial radios which required either crystals or programming, something which discouraged casual and family use.

The repeaters managed by Washvill were installed to support REACT and Red Cross activities years ago.

Bowling's repeaters are intended for healthcare emergency communications for hospitals primarily in MIEMSS Region V (suburban and southern Maryland).

Dr. Michael Trahos, a physician in Alexandria, has placed a full-power repeater on 462.6 in the Landmark area of Alexandria which uses a directional 10 dB yagi antenna at 50 degrees from the site that provides coverage for the City of Alexandria and the entire I-395 corridor from the Springfield interchange to and across the 14th Street bridge into downtown Washington, D.C.

Several REACT teams continue to exist, including Federal City and Prince George's County, both of which use GMRS for their activities.

In addition, after 9/11, many of the separate Red Cross chapters in the D.C. area merged into a single National Capital chapter, so the new organization's required coverage area significantly increased.

Through the cooperation of local governments and commercial site owners, Washvill says additional repeater equipment and repeater sites were acquired to allow the installation of multiple repeaters, using both GMRS and Part 90 (business band) frequencies, throughout the metropolitan area to support the expanded Red Cross communications needs.

The GMRS repeaters Washvill manages are used occasionally for Red Cross activities such as the July 4th festivities on The Mall and presidential inaugurations.

The increased availability of cell phones, Washvill points out, has significantly reduced the volume of Red Cross radio traffic on both GMRS and Part 90 channels. But the network remains available to provide backup communication during planned events and emergencies.

When not being used for Red Cross communication, those GMRS repeaters are available free of charge to all licensed GMRS users, both as a public convenience and as a way to monitor the health and operational status of the repeater equipment, he says.

These are the GMRS repeaters available for free public use in the Washington, D.C. area to licensed users.

462.550	[141.3]	Seven Corners, Va., mw
462.550	[141.3]	PG REACT, Lanham *
462.575	[141.3]	Clarendon, Va. (Arlington), mw
462.600	[141.3]	Alexandria-Westend (Landmark), mt
462.625	[88.5]	Largo "PG-1," pb
462.625	[156.7]	Wheaton, Md., mw
462.650	[146.2]	Bull Run Mountain, Va., mw
462.675	[141.3]	Seven Corners, Va., mw
462.700	[141.3]	Southwest Washington, D.C., mw
462.725	[88.5]	Laurel "PG-2" (this spring), pb
462.xxx	[88.5]	Bowie "PG-3" (fall 2023/sp 2024), pb

This standard channel plan was adopted by the FCC for the FRS/GMRS frequencies.

The PG REACT repeater on 462.55 was previously REACT only, however, at a board of directors meeting earlier this month, board members voted to open the repeater. PG REACT may also use PG-1 and PG-2 but they are not REACT repeaters.

GMRS operates on a cooperative basis between users and repeater owners, Washvill explains. Operators should be able to find a way to share the limited GMRS channels and allow multiple repeaters to operate together on the same frequencies.

Washvill says his repeaters were obtained as donations of surplus equipment from local government and commercial radio shops. Dr. Trahos says his repeaters are self-purchased and maintained solely at his cost.

Part 90 narrow-banding in 2013 has helped out, Washvill says, "since entire categories of equipment are no longer usable for UHF commercial or public safety operations, but they can still be used for GMRS."

The MyGMRS and Repeaterbook.com apps/websites list GMRS repeaters nationwide, which may or may not actually be on the air.

For more info, email:

Paul Bowling (paul@w4atn.com)
Dr. Michael Trahos (KB4PGC@gmail.com)
Mike Washvill (wpon592@gmail.com)

Recommended repeater etiquette:

These repeaters have primary missions which take priority over accommodating external radio traffic.

Obey all FCC regulations. Be courteous, no cursing and no flaming. These repeaters are for personal use only, no business!

Keep conversations brief. Ideally, each transmission should be no longer than 60 seconds and conversations no longer than three to five minutes to allow other users access. If after listening for a couple of minutes and not hearing another conversation starting up, then the conversation can resume.

Any emergency has priority over any conversation.

The repeater's primary mission, even if a drill, has priority over all conversations other than real emergencies.

Repeaters may be used by organizations for nets and for coordinating public service events with permission.

AMATEUR RADIO ABOVE 50 MHz: VOICE OVER INTERNET PROTOCOL (VOIP)

by Kenneth Fowler (N4VKF)

I am starting a regular column called amateur radio above 50 MHz. This column will focus on amateur radio's use of the VHF and UHF spectrum. Future articles are planned to explore anything I find interesting and adjacent to the use of scanners and amateur radio.

Have you ever listened to a wide-area repeater system on your scanner? Do you listen to conversations from all over the world on the local digital repeater?

This is accomplished by linking radio systems through the internet. This linking is called Voice over Internet Protocol (VOIP) or Radio over Internet Protocol (ROIP).

VOIP involves using a computer and a soundcard to record your voice and send that data, in real-time, through the internet. It also involves decoding the data on the receiving end to be rebroadcast.

Below is an example of how Echolink® works. The most common linked systems are FM repeater and simplex stations in the VHF and UHF amateur spectrum.

For most systems to work properly they must have standardized software, control operation, a directory of stations to connect to and security.

Early Days

Radio Amateurs started experimenting with linking radio and the internet in the early 1990s. The first such system was called Internet Phone. This allowed for telephone calls to be made via your computer to another computer via the IP address.

The idea of linking VHF repeaters came next. In 1996, a computer program was developed called Repeater Link. It was written by Mark Brown, N9YNQ. This program was designed to be a software bridge between Internet Phone and an FM transceiver connected to a PC.

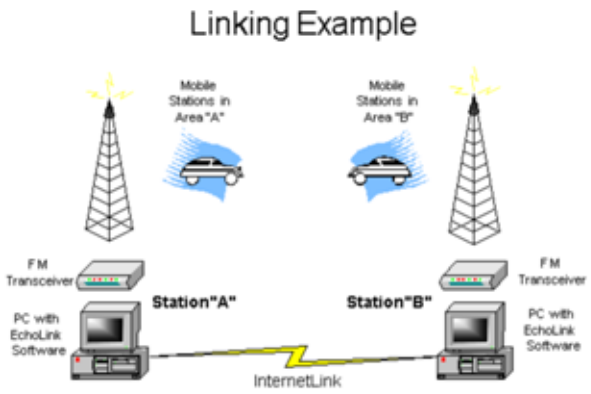


Image Source: Echolink website

Advances in this technology did not occur until the advent of broadband internet. With broadband internet access more VOIP systems were developed. In 1997, IRLP was created by Dave Cameron, VE7LTD. IRLP stands for Internet Radio Linking Project. This IRLP system started in Canada and was linking repeaters coast to coast, from Vancouver to New Brunswick.

Other such linking systems that were developed were called iLink and eQSO. These systems were used as a replacement for landline telephone systems.

The 21st Century

At the beginning of this century, we saw the creation of more advanced systems. These are Yaesu's Wires-II™, Icom's D-Star™ and Echolink™. Wires-II is commonly known as Wires-X.

Echolink was created by Jonathan Taylor, K1FRD, in 2002. Echolink is software you can use via your PC or android cell phone to link to a specific repeater or node via the internet to carry on a conversation. You can also create an analog node to use your radio to connect to the Echolink system.

D-Star was created in 2001 and is a joint effort of the Government of Japan and the Japan Amateur Radio League.

Wires-II was created by Yaesu in 2002.

Allstar is another popular linking project. It is based on the Asterisk software developed for telephone systems. Allstar Link software was created by Jim Dixon, WB6NIL. It was adopted for use by amateurs to link FM analog repeaters and simplex nodes together.

Whereas Wires and D-Star are digital forms of communication; Echolink, IRLP, and Allstar are analog forms of communication.

D-Star gained popularity for those who wanted to use that mode of communication with the creation of USB dongles that you would connect to your computer. This was especially important if you did not have a D-Star-capable repeater nearby.

With the creation of the Raspberry Pi computers, linking just gets easier and more experimental. MMDVM (multi-mode digital voice modems) circuit boards can be attached to link your mobile or portable radio to many of the analog and digital modes used today. Future articles will discuss some of this technology.

You must be a licensed amateur radio operator to be able to use any of these systems.

Sources:

VoIP: Internet Linking for Radio Amateurs: Johnathan Taylor, K1RFD: ARRL 2009

VoIP and Amateur Radio: Steve Ford, WB8IMY: QST Magazine February 2003

Ham Radio and VoIP: Don Rotolo, N2RIZ: CQ Magazine December 2004

MONTGOMERY COUNTY CONSIDERS ADDING A 7th POLICE DISTRICT

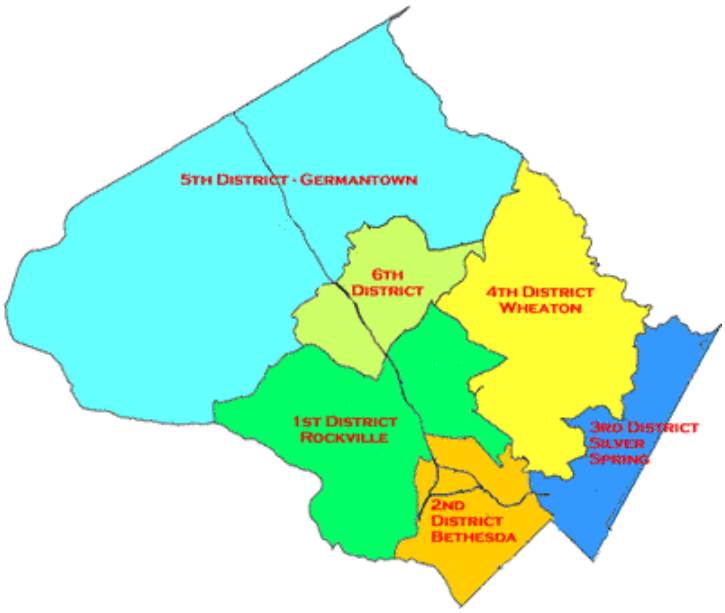
by Cordell Pugh

In late December, news broke that Montgomery County is considering carving out a new (7th) Police District.

The county is currently analyzing the police department's workload, focusing on the potential 7th District's ability to improve policing in Downtown Silver Spring.

This news broke almost immediately after 62-year-old Charles Reynolds was murdered in the Wayne Avenue Public Parking Garage in Downtown Silver Spring while he was out to dinner with his family.

On Twitter, Montgomery County Assistant Chief Administrative Officer Dr. Earl Stoddard noted that frequently, police district boundaries "also become dividers for crime analysis, community engagement and other areas of policing."



The current Montgomery County Police 3rd District spans the US-29 (Colesville Road/Columbia Pike) corridor from Downtown Silver Spring to the Howard County line. Dr. Stoddard emphasized that "Public safety challenges in [Downtown Silver Spring] are different from those in [Long Branch] or White Oak… they all need their own specific strategies."

The new 7th Police District would allow Montgomery County Police to focus on these specific areas at a more individual level. In his December 28 media briefing, County Executive Marc Elrich stated that he believed the new 7th District would "make sure resources are deployed more evenly."

ORGANIZATION PRESERVES RADIO PERIODICALS AND MORE ONLINE

The Digital Library of Amateur Radio & Communications (DLARC) is a new project that is part of the Internet Archive which is dedicated to preserving radio-related periodicals from the recent past.

The Internet Archive makes magazines, books, software, games, and all sorts of hard-to-find material available online to everyone, for free.

Kay Savetz, a licensed extra-class amateur radio operator, is the project's curator. "When I learned that they were planning to build a digital library of all things amateur radio," he says, "I wanted to be a part of making that happen!"

Internet Archive is a non-profit digital library that's been around for more than 25 years. It's best known for the Wayback Machine, Savetz points out, but that's just one slice of what the organization does.

The *Wayback Machine* is a tool for seeing websites as they used to be or websites that no longer exist. You can enter the URL of a page, and it will show you stored captures of the site at various points in the past — sometimes going back as far as 26 years.

If the information has been changed or removed or the site simply doesn't exist anymore, it is often available in the *Wayback Machine*. It has captures of 735 billion web pages, and captures 770 million more every day.

IA's mission is "universal access to all knowledge." It's a library, entirely online, entirely free with no ads, no tracking, just free information. You will need an account to do some things, but the account is free also.

That information includes access to millions of books, magazines, movies and government data, Savetz explains, everything a traditional library has.

IA has more than 99 petabytes of data (that's more than 99,000,000 GB). More than seven million books are available to read, and the organization can scan more than 4,000 books a day, across all topics, not just radio.

The DLARC is funded by the Amateur Radio Digital Communications (ARDC), a private foundation that exists to support amateur radio and digital communication science and technology. ARDC has funded amateur radio-related projects around the world.

The ARDC provides grants to advance amateur radio. Some of the grants are small, like funding a club's equipment upgrades. But others are more significant, like supporting amateur satellite design, Savetz says.

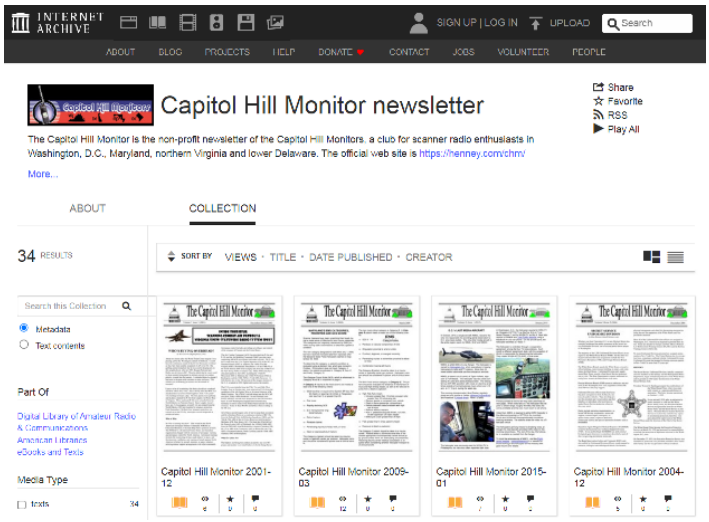
So when ARDC expressed interest in funding an online library dedicated to radio communication, the Internet Archive had the infrastructure and expertise to make that happen.

The DLARC is just one project of the Internet Archive, just a tiny sliver of the information that it stores and makes available, Savetz points out.

As the curator, Savetz has leeway to decide what qualifies as appropriate for the DLARC. He decided to allow all sorts of non-commercial broadcast radio-related material.

In addition to ham radio, that includes CB, shortwave listening, pirate radio, numbers stations, software distribution over radio and general electronics.

The DLARC has the complete run of *73*, with many more magazine runs coming live soon. You will even find the Capitol Hill Monitors newsletters being archived along with various radio journals!



Part of the DLARC library's mission is to preserve and provide online access to print ephemera, personal digital records, "born-digital records," and web-published material that document the history of amateur radio, he says.

"We're scanning hundreds of ham radio-related books and magazines which are important. But just as a national news program doesn't give the full picture of what's happening in local communities, those big-picture publications can't document ham radio at the local level," he points out.

"As you know," Savetz continues, "there are thousands of small ham radio clubs and groups. Some are focused on a geographic region; others are focused on a particular aspect of the hobby like QRP or DXing; others are focused on a particular type of ham, such as hams with disabilities. Each of those newsletters shows a unique perspective about the hobby at the time they were written. They all deserve to be available to everyone."

DLARC is looking for donations of radio-related books, magazines, newsletters, etc. and permission from people who create ham radio content (such as podcasts, newsletters, videos, etc.) to include their material in the library.

Inquiries should be emailed to Savetz. DLARC is also on Mastodon: @dlarc@mastodon.radio

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PLEASE JOIN US AT LEDO'S COLLEGE PARK THIS SUNDAY, JAN. 29, 2023!

Everyone is welcome to join us at our annual winter get-together. This time we are at Ledo's at 4509 Knox Road in College Park on Sunday, January 29 from 2 to 4 p.m.

That is where you will find a good diverse group of people from the D.C. area who are interested in monitoring radio communication.

Guest speakers this time will be the main GMRS repeater managers and gurus, Dr. Michael Trahos, Mike Washvill and maybe, Paul Bowling.

Also, we hope to have YouTube star Andrew Leyden (AKA Penguin 6) to talk about his YouTube channel which is amazingly popular with radio hobbyists and Marine 1, Air Force 1 and POTUS watchers.

Ledo Pizza.

The Capitol Hill Monitor
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This is the 2023 CHM Winter Edition!

CHM GET-TOGETHER SCHEDULED SUNDAY, Jan.29, 2023.

Inside this issue:

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Ken Fowler, Northern Virginia Correspondent
Mike Peyton, Technical Advisor
Mike Agner, Links Editor
Alan Henney, Editor & Treasurer

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* **Scan-DC; local email discussion group:** http://mailman.qth.net/mailman/listinfo/scan-dc
* **CHM Facebook:** https://www.facebook.com/groups/CapitolHillMonitors/
* **The NCR Public Safety Zello Notification Channel:** http://zello.com/scandc

CHM HAS GONE PAPERLESS!

The *Capitol Hill Monitor* newsletter has converted to electronic distribution. But "snail mail" distribution will continue for the time being for those who paid for it.

The online version is identical and is available for free. Please subscribe on the CHM website. When the next issue is available, you will receive an email with a link and a list of topics for that issue.