



Final Report
for

2nd Quarter 2022
MDC Section Hospital Drill
April 9, 2022

Sponsored by

Prince George's County
Amateur Radio Emergency Service

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Executive Summary

On April 9, 2022, 42 American Radio Relay League's Amateur Radio Emergency Service radio operators from five counties making up the Maryland Medical Region V came together for a training drill. The five counties are Calvert, Charles, Montgomery, Prince George's and St Mary's.

The Purpose of this Drill was to demonstrate MD Medical Region V continuous communications capability among the five Region V counties, specifically those hospital facilities therein during a disaster event.

ARRL MDC Section
Amateur Radio Emergency Service
Second Quarter Hospital Drill Report
April 9, 2022

Purpose

The Purpose of this Drill is to demonstrate MD Medical Region V continuous communications capability among the five Region V counties, specifically those hospital facilities therein during a disaster event.

Objective

The Objective of this Drill is to observe strengths and weaknesses in order to build upon those strengths and correct that which needs further training, adjudication and preparation for a possible evacuation deployment.

Expected Outcome

The Expected Out Come are a better understanding of the process of setting up an off-site station ‘near’ the affected facility in the event of an evacuation.

Background

During community catastrophes, regular and cell phone service may be disrupted. Without availability of these services, alternate forms of communication must be relied upon.

It is critical to develop communication strategies which include redundant forms of communication in advance of these events. Redundant communications can include a myriad of commercial systems available to the hospital community. Not included in the hospital’s immediate selection of redundant communication systems is a back-up system for a **“When All Else Fails”** incident, a.k.a., Amateur Radio.

Hospital plans for full or partial evacuation should incorporate preplanning and address the incident command and management structure established for its operational area (community). In advance of an event, Hospitals should understand and incorporate local plans and protocols that are in place to support evacuation and should establish Memoranda of Understanding (MOUs) with other hospitals, as necessary, for transfer and mutual aid during an emergency.

Drill Scenario

This is a drill. . .This. is a drill. . .This is a drill.

A strong devastating weather event sneaked into the Southern Maryland county communities in the overnight hours causing five county hospitals to activate their evacuation procedures. The Maryland-DC Section Coordinator activated the Amateur Radio Emergency Service in Calvert, Charles, Montgomery, Prince George's and St Mary's counties to provide back up emergency communications in the field at or near the hospital grounds. See Figure 1.

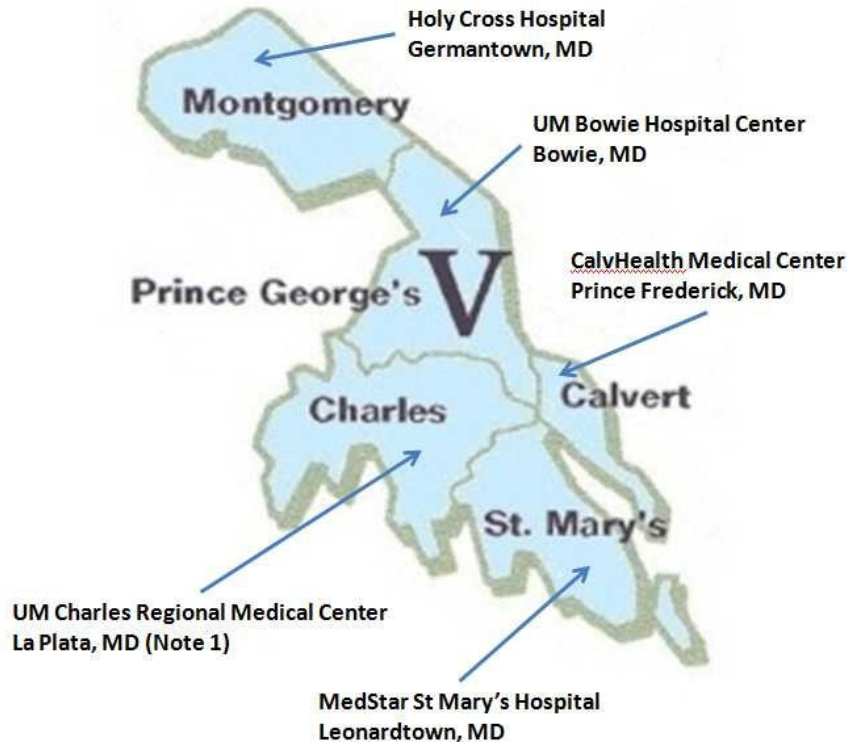


Figure 1

Details

Drill preparations were done on Zoom and a final Drill Plan released on March 14. County sites were instructed to set up at approximately 0900 April 9. Communications were conducted on the Central Maryland Repeater Group's (CMRG) 440MHz linking system to coordinate functions among the Region V County Sites.

Montgomery County kicked off the Drill with a Winlink Express email destined for St Mary's County. . .with a twist. The email was to be 'relayed' through the remaining counties in a prearranged path. See Figure 2.

¹ Note (1): Actual operations conducted in Waldorf due to limited space at their hospital for setting up HF antennas on the hospital grounds

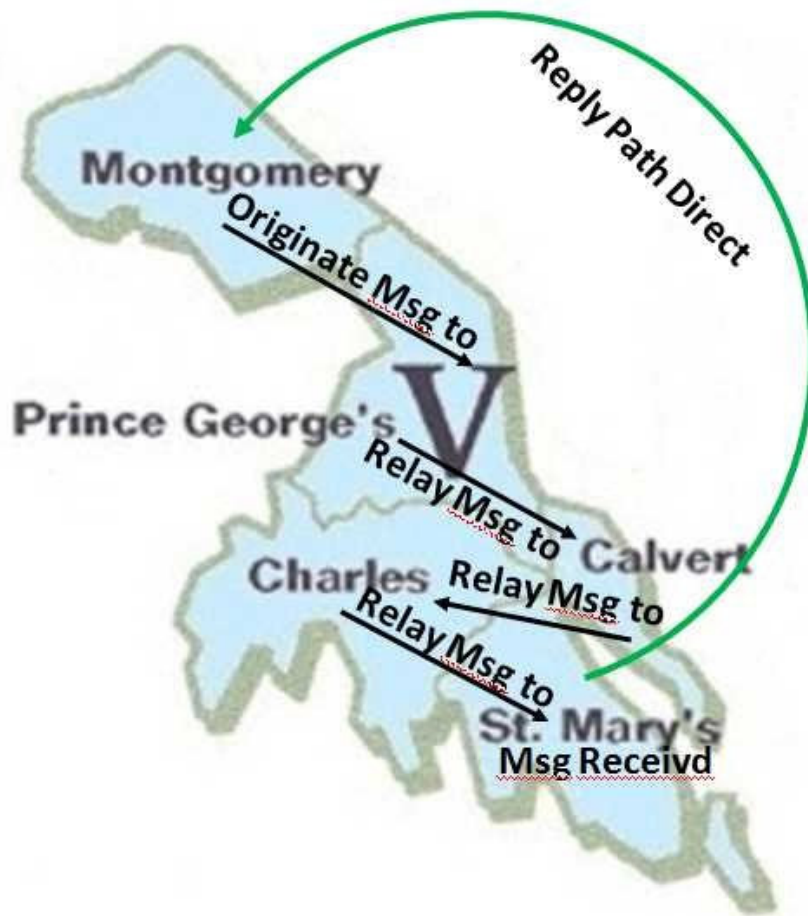


Figure 2

At St Mary's, the message was reviewed, replied and sent back directly to the originator in Montgomery County bypassing relay stations. Mission complete.

Posting Position Reports

The second part of the Drill was putting up their location on Winlink's Position Reporting system. The Winlink Express program has a feature that allows stations to post their location along with any comment necessary. This comes in handy for several reasons. It may be possible to order additional radio operators in the form of relief, replenish supplies and possibly alert authorities of ground conditions for transporting the injured.

The Report is automatically generated as soon as the position is posted on the Winlink Server. Anyone can access the site to provide supply support to the radio operators. All five stations successfully uploaded their position, and can be seen in the following graphic in Figure 3.

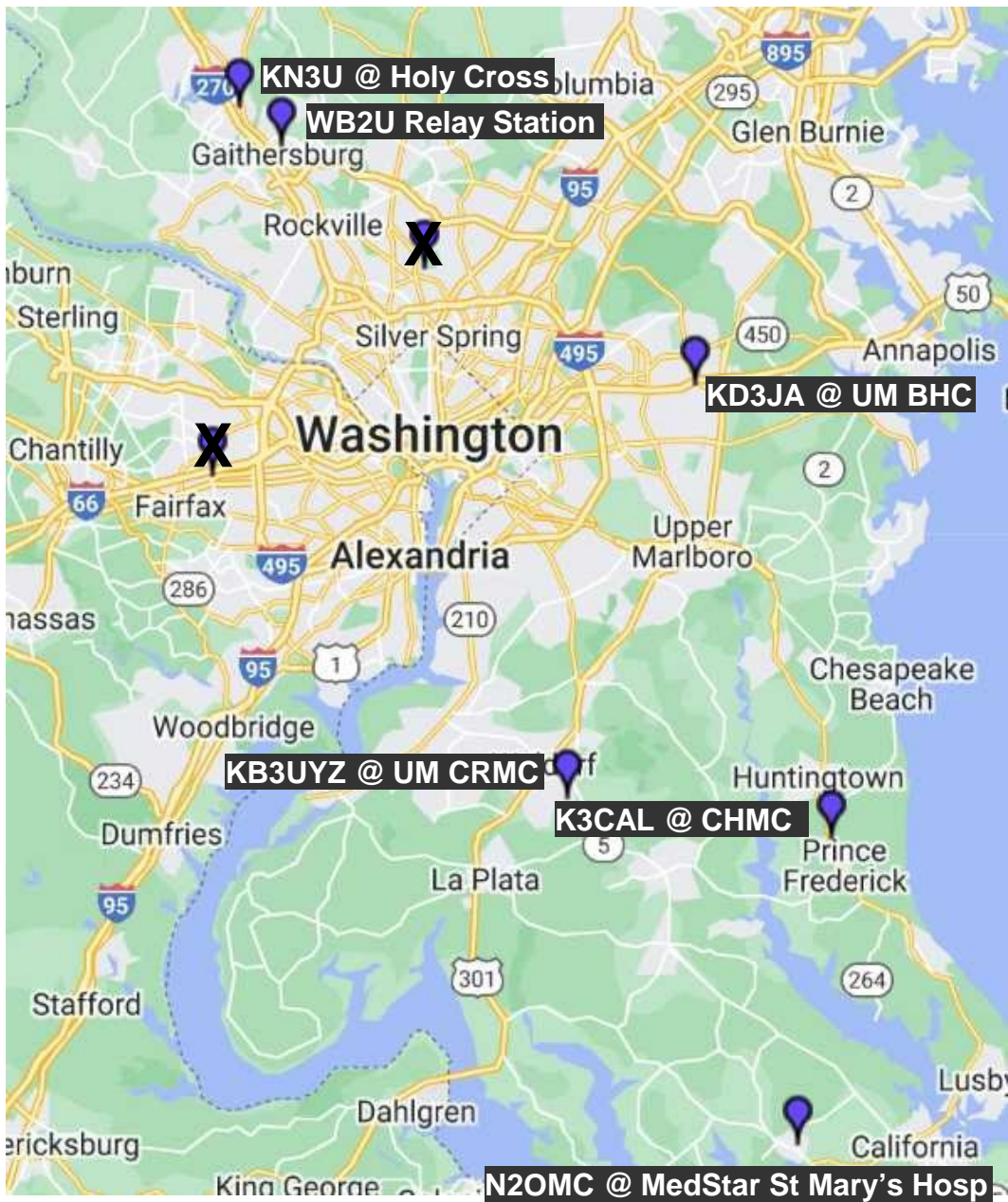


Figure 3

Drill Participants

There was excellent participation among the five Region V counties follows

Calvert

KB3RAN
KC3RKP
KC3WRX
KH6CCUJ
N3AE
WB6NCO

Charles

N3YRZ
KB3UYZ

Montgomery

AC3N
KC3MIX
KC3PLT
KN3U
N3DDS
WA3UEA
WB2U

Prince George's

K4LIZ **WDC EC**
KA3AHI
KA3MNL
KB0URZ
KB3N
KB3SPH
KB3SWS
KB3VWG
KB3YQK
KC3DSO
KC3TCZ *
KC3TLO *
KC3TMG *
KD3JA
N3WYG
N3XL
N6CJB *
W4ATN
W9WNH
WA3YTK
WB3KAS
WI3N

St Mary's

AC3U
KB2SKP
KC3RWE
N2OMC
N3AK

Howard

N3AWP HF NCS

* = Newly Licensed

Observations

It was cold.

Several radio operators from several sites expressed the notion that peer-to-peer HF connections did not appear to be as efficient as other modes of choice. If this is all you have at your disposal in a disaster, (think when all else fails) then make the best of it. This Drill was not about using the best mode of choice, but to practice a given specified mode, and everyone succeeded. Next time a different mode will be tried as learning experience.

In the January Hospital Drill, operators were ham strung (pardon the pun) because selected frequencies were given as a requirement. Lessons Learned here; operators coordinated their message transfer frequency on the Central Maryland Repeater Group 440 Linking system, and all was well. The CMRG system is an RF only system requiring no Internet linking connectivity. A great benefit to the MDC Section EmComm Program.

Observation from Calvert operations (Response provided):

“No apparent NCS on CMRG, resulting confusion. Multiple interleaved conversations.”

Response: Didn't think it was necessary in that there would only be, at a minimum, one inbound and one outgoing message for each county. Comment taken under advisement for future drills and exercises.

“For reasons unknown, exercise message path appeared to be Mont to PG to Charles to Calvert to St Mary's rather than the planned Mont to PG to Calvert to Charles to St. Mary's”

Response: The Drill Incident Commander decided to throw in a last minute change to observe the reaction and assess the solution that followed. Parties handled the issue well; mission success.

“Better use of tactical callsigns (county name) on CMRG would have helped.”

Response: Nothing precluded the use of Tactical call signs in the Drill

“80M propagation varied significantly. Switch to 40M was necessary. 109 solar flux today.”

Response: Noted by other county operations and took the same approach

“Could not raise Charles on CMRG frequencies. Created confusion on message forwarding plan and real-time changes in plan.”

Response: Charles operations unable to access CMRG. They opted to use 147.15 repeater out of Brandywine. This should have been conveyed to Calvert operations, but was not. Oversight.

“WL2K inherent inability to send P2P and have ability for 3rd party copy is highly limiting. Suggest MDC consider trying MT-63 FLDIGI mode as an alternative in a future exercise.”

Response: This was a Winlink Express operations due to the fact that communications were across county lines. The decision was made years ago that emergency communications across county lines in the MDC Section will be conducted using Winlink Express. What is used within the confines of the county is strictly up the EC and associated ARES group.

“VHF/UHF WL2K Packet "may" have worked better using available digipeaters”

Response: Digipeaters are a wonderful and useful tool in emergency communications operation. The coordinated effort to obtain agreement among the Packet Node Sys Ops to operate on the same frequency would be highly doubtful. Then the issue of which frequency and finally how would this be disseminated in a true comms down event.

“Interested in learning if VARA worked better than Adrop today. We did not have VARA.”

Response: It is a known fact that HF VARA would have been a better choice for the Drill. An informal survey showed many operators were not VARA capable, hence the reason to go with a mode consistent with the capabilities of the radio operators, i.e., ARDOP. Future drills and exercises will consider the option for two parties to negotiate the mode as they did for agreeing on a frequency.

Eighty meter propagation was not the best for us in the morning hours of the day. By some verbal reports, our Net Control Station N3AWP, in Howard County was barely readable. Follow up needed.

Recommendations

A command decision for the Drill was not to use the ICS 309 Communications Log, in that there would only be, at a minimum, one inbound and one outgoing message for each county. A bad decision. In a real event, this information will be very useful informing the served agency incident commander the status of sent messages. Did you send the message? When did you send the message? Has a reply been received yet? Will you please follow up on this please?

Recommended that all future Drills, formal or informal have their ICS-309 Communications Log preserved for future review.

A recommendation from the MONT site as follows:

“For the long term, we need to develop some RMS gateway stations in Maryland to make better use of the Winlink Hybrid Network as well as the optional RMS Relay capability. Perhaps we can set up a Zoom meeting among interested parties to discuss that. I’ve spoken to Steve Waterman about this. He has some specific recommendations along those lines, and has offered to assist us if we plan to pursue that.” *Al Taylor, KN3U*

Response: PRGE ARES has done a little Winlink Hybrid but not enough to keep it fresh and active. Will take it up with MONT ARES for a late Spring/early Summer project.

Summary

A great turn out of ARES support for the Drill. This was the first attempt at a cross-county (multiple counties, in fact) EmComm Drill. The mission to pass traffic through five counties with a direct return was successful; rough on the edges but the message was delivered.

Future Drills will focus on the corrective actions based on the above issues observed. Consideration for VARA will be explored based on increase radio operator’s usage.

Finally, a recommendation was made to bring on the next MD Medical Region (perhaps Region III) for a similar Drill, concluding with a joint Region III and Region V training exercise.

Appendices

The Drill Plan was created using the ICS 201 Incident Briefing form. It was sent to all Region V sites for review and comment prior to the start of the Drill. A Final Plan was delivered, shown on page 12.

1. Incident Name MD Medical Region V Comms Drill	2. Incident Number 2022-04	3. Date/Time Initiated April 9, 2022 at 0800-1200
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4. Locations

**Maryland Hospital Association
Medical Region V**

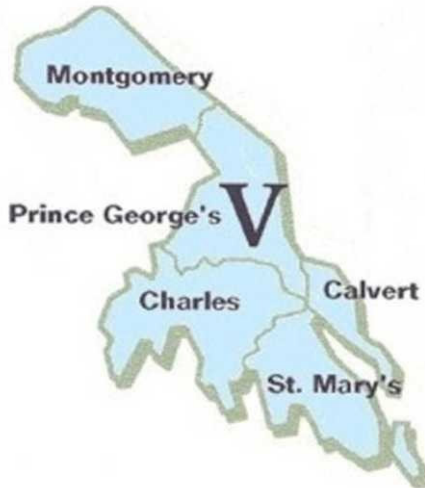


Figure 1: Maryland Medical Region V Counties

Station locations in Figure 1 counties.

Calvert	Calvert Health Medical Center Parking Lot
Charles	UM Charles Regional Medical Center Parking Lot
Prince George's	UM Bowie Health Center Back Lot
Montgomery	Holy Cross Germantown Hospital Parking Garage
Saint Mary's	MedStar St. Mary's County Board of Elections

Maryland Hospital Association

MHA serves Maryland's hospitals and health systems through collective action to shape policies, practices, financing and performance to advance health care and the health of all Marylanders.

MHA's membership is composed of (about 50) community, teaching and specialty hospitals and health systems. Allied with the American Hospital Association, MHA is an independent organization headquartered in Elkridge, Maryland.

5. Current and Planned Objectives

- A. The **Purpose** of this Drill is to demonstrate MD Medical Region V continuous communications capability among the five Region V counties, specifically those hospital facilities therein during a disaster event.
- B. The **Objective** of this Drill is to observe strengths and weaknesses in order to build upon those strengths and correct that which needs further training, adjudication and preparation for a possible deployment.
- C. The **Expected Out Come** is a better understanding of the process of setting up an off-site station 'near' the affected facility in the event of an evacuation.
- D. Part 1 is a one P2P message originating in MONT county destined for STMA. See Figure 2. Part 2 has two parts: (a) Post a Winlink Position Report. (b) Post your position on the APRS server, aprs.fi. See Figure 3.

6. Organization

The following organizations participation

- A. Appointed County Emergency Coordinators of Amateur Radio Emergency Service of the Maryland-DC Section, Atlantic Division of the American Radio Relay League.
- B. Representatives from Maryland Hospital Association attending at Montgomery and Prince George's County sites.

7. Contact Information

Drill NCS	N3AWP	n3awp@arrl.net
Calvert	N3AE	n3ae@arrl.net
Charles	N3YRZ	msack@verizon.net
Prince George's	WB3KAS	wb3kas@arrl.net
Montgomery	W3TDH	w3tdh@arrl.net
Saint Mary's	N2OMC	n2omc@arrl.net

8. Bands and Frequencies

Operations will take place on 40 and/or 80m depending on whatever works. HF Frequencies shall be agreed between connecting stations using CMRG Linking System or through Drill NCS, N3AWP, HOWA EC on 3820kHz.

CMRG 440 Linking Repeaters (pl 167.9Hz all sites)

Laurel	444.700+	WA3GPC
Suitland	448.925-	N3ST
Frederick	444.100+	N3ST
Baltimore	449.675-	N3ST
Baden	447.075	N3ARN

9. Communications Concept

Part 1 WL2K HF P2P

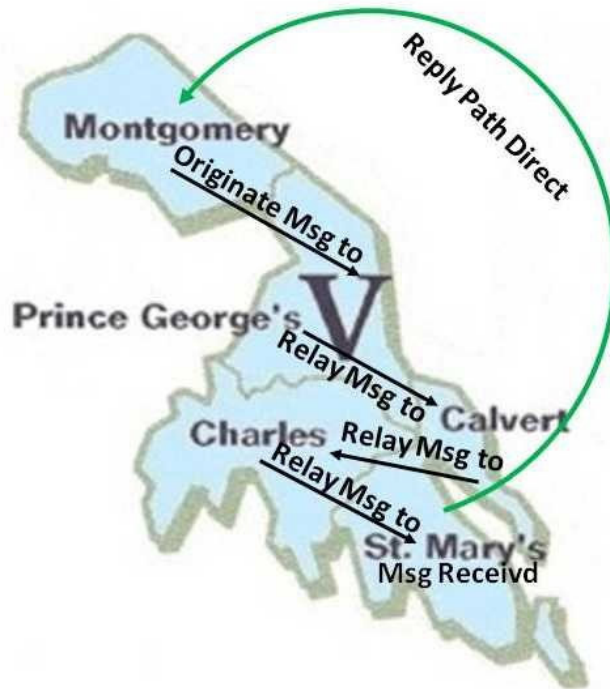


Figure 2: Sequential Peer- to Peer Relay Paths

- A. A Winlink P2P Message will originate from the MONT operation's site and deliver to STMA operations site through the remaining four Region V counties.
- B. Relay stations (call signs TBD) will **forward** message to next county per map to the intended recipient in STMA's operation's site .
- C. St. Mary's operations will reply back to MONT, but use the **forward** option to originator direct, no relays.
- D. MONT operations sends the file to KA3AHI@winlink.org. This file will be included in the Final Drill Report.

9. Communications Concept (cont'd)

Part 2 WL2K HF Gateways

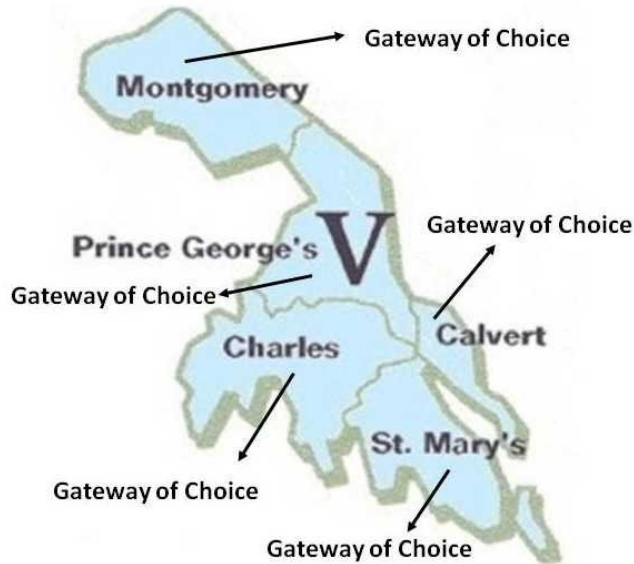


Figure 3: Sending WL2K Position Reports to the WL2K Server

- A. All Drill stations will exercise HF Winlink Position Reporting. Obtain GPS coords from cell phone. Use a call sign not previously used in the Drill. Send any time during the Drill.
- B. All Drill stations will place their position on the APRS server, aprs.fi. Use same call sign as in para A above. Do not use a mobile call sign, as the point on the map will move.

10. Drill Reporting Requirements

- A. ICS-214 Activities Log, as detailed as you are able. It is used for putting the Final Drill Report together. Include issues resolved on the spot, any visitors who might have stopped by, etc. Include all call signs of those who supported the event.
- B. Send the 214 documents and pictures with a brief narrative to ka3ahi@aol.com.

Prepared by: Jim Montgomery

Position/Title: MDC Section SEC

Signature:

ICS-201

Date/Time: 2022-03-14:0633

Jim Montgomery

List of Abbreviations
January 01, 2022

ACS	Auxiliary Communications System	JCAHO	Joint Commission on Accreditation of Health Care Organizations
ANAR	Anne Arundel (County)	JHH-FL	Johns Hopkins Hospital, St. Petersburg, FL
ARDOP	Amateur Radio Digital Open Protocol	JHH-MD	Johns Hopkins Hospital, Baltimore, MD
ARES	Amateur Radio Emergency Service		
ARESMAT	ARES Mutual Aid Team		
ARRL	American Radio Relay League		
BACI	Baltimore (City)	kHz	kilo Hertz
BACO	Baltimore (County)	LRH	Laurel Regional Hospital
BHC	Bowie Health Center	MHz	Mega Hertz
CALV	Calvert (County)	MICU	Medical Intensive Care Unit
CARR	Carroll (County)	MMMC	MedStar Montgomery Medical Center
CHAR	Charles (County)	MONT	Montgomery (County)
CMRG	Central Maryland Repeater Group	MSMHC	MedStar Southern Maryland Hospital
CRMC	Central Region Medical Center	NCR	National Capital Region
CTCSS	Continuous Tone Coded Squelch System	NCS	Net Control Station
		NVIS	Near Vertical Incident Skywave Operations
DCH	Doctors Community Hospital	Ops	
EC	Emergency Coordinator	P2P	Peer-to-Peer
EM	Emergency Management	PGC	Prince George's County
EmComm	Emergency Communications	PGCHD	Prince George's County Health Dept.
EOC	Emergency Operations Center	PGHC	Prince George's Hospital Center
FCC	Federal Communications Commission	PIO	Public Information Officer
FRED	Frederick (County)	POC	Point of Contact
Freq	Frequency	PR	Public Relations
FSB	Fire Services Building	PRGE	Prince George's (County) Location
FWMC	Fort Washington Medical Center	QTH	
HARF	Harford (County)	RACES	Radio Amateur Civil Emergency Service
HC	Holy Cross		
HCGH	Holy Cross Germantown Hospital	RMS	Radio Messaging System
HCSH	Holy Dross Silver Spring Hospital	RO	Races Officer
HD	Health Department	SET	Simulated Emergency Test
HEROs	Hospital Emergency Radio Operators	SM	Section Manager
HEOC	Hospital Emergency Operations Center	SMS	Short Message Systems
		SNS	Strategic National Stockpile
HF	High Frequency	SSB	Single Side Band
HIPAA	Health Insurance, Portability, and Accountability Act	TALB	Talbot (County)
		UHF	Ultra High Frequency
HOWA	Howard (County)	VHF	Very high Frequency
IC	Incident Commander	WDC	Washington, DC
ICS	Incident Command System	WinMOR	Winlink Messaging Over Radio
IT	Information Technology	WL2K	Winlink 2000