After Action Report
Alexandria Radio Club Winter Field Day 2023

Introduction
Alexandria Radio Club participated in Winter Field Day during the weekend of January 28-29, 2023. The Field Day activity began at 2:00 p.m. Eastern time on Saturday, January 28th, 2023 and ran for 24 hours. The event was held at the Alexandria Fire Department Station 210. Station 210 is located at 5255 Eisenhower Avenue Alexandria, Virginia. Station classroom spaces were used for radio operating. We are grateful to the City of Alexandria Emergency Operations Center (EOC) and Station personnel for helping to arrange use of operating space for WFD 2023. This exercise was not open to the public as are ARRL Field Day events.

What is Winter Field Day?
Winter Field Day (WFD) is a communications exercise held in the middle of winter environments during the last weekend in January. Ham radio operators worldwide participate in WFD. Winter Field Day can be worked from the comfort of home; however, WFD was created with the idea that ham radio operators should practice portable emergency communications in winter environments because the potential for freezing temperatures, snow, ice, and other hazards present unique operational concerns. WFD is sponsored by the Winter Field Day Association and is recognized by the American Radio Relay League. See WFD rules at https://winterfieldday.com/rules.php.

Exercise Objectives
Our primary objective was to use WFD as a vehicle to demonstrate Alexandria Radio Club (ARC) readiness and capabilities to deploy communications capabilities during emergencies. Club members operating from home were to use their own call signs following WFD standard rules and requirements. Club members deployed to Station 210 used the Alexandria Radio Club call sign, W4HFH. The deployment exercise had the following objectives:

- Provide an opportunity for ARC members with HF go-boxes to show that they can deploy with their HF go-boxes in case of emergencies or disasters
- Provide a training opportunity for ARC members to learn "how-to's" concerning building and using HF go-boxes. New hams can learn what should be included in a "go box" kit and other important considerations.
- Develop better understanding about how to deploy and use potential City facilities that may be needed during future emergency deployments.
- Provide opportunities to demonstrate the use Winlink for HF radio generated emails
- Provide an opportunity to develop more confidence in ARC ARES deployment capabilities

This deployment exercise was more about training and the logistics of doing portable operating rather than logging maximum radio contacts (QSOs). The focus was on the technical and logistical aspects of preparation and setting up portable and functional HF stations despite winter conditions, and having our participants test their personal preparedness and gear under potential winter conditions.

To simulate emergency conditions, this exercise required use of battery power only for radio operations.

Club Member Exercise Participants

Bob	(KO4ZIK)	20m HF Operator w/Go Box
Erik	(KI4BXU)	20m HF Operator w/Go-box
Jason	(WA6MPR)	20m HF Operator w/Go-box
Alex	(KO4ZMC)	40m HF Operator w/Go-box
Don	(KI4D)	40m HF Operator w/Go-box
Joe	(KT3I)	SATCOM Operator w/Go-box
Sean	(K4KBK)	Participant/Club VP
Rick	(N4ASX)	Participant/ARES Coordinator
Ian	(N8IK)	Participant/Club Board
Jan	(KB2LRX)	Participant/Club PIO
Andrew	(KI4THF)	Participant

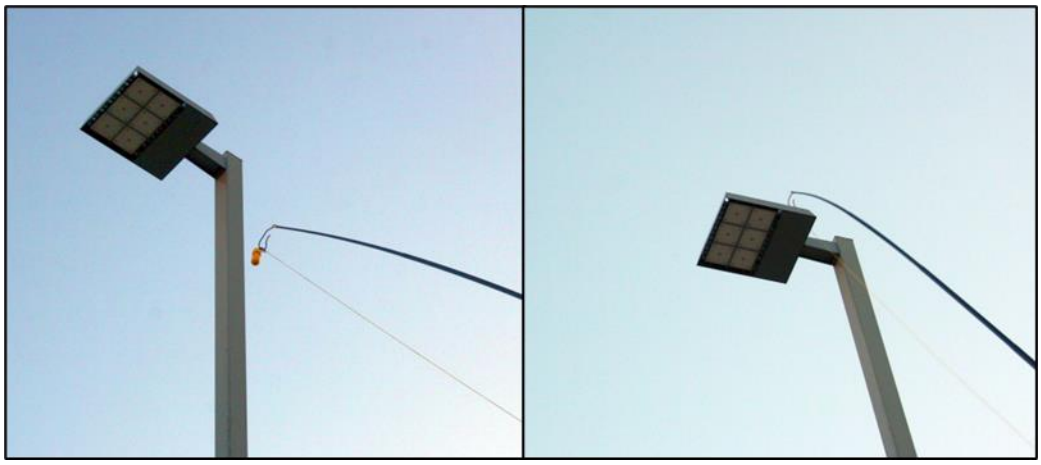
Visitors

City of Alexandria Councilman Kirk McPike visited the event on Saturday. He was able to meet and chat with all participants; and was shown our antenna installations and operating stations. During his visit, he expressed the importance of our capabilities to respond in case of potential city emergencies. He was photographed with our club participants.

Operational Details for Winter Field Day 2023

Set up

On Friday, January 27th at 4:45 p.m. Joe (KT3I), Bob (KO4ZIK), Ian (N8IK), Jan (KB2LRX) and Don (KI4D) met at Station 210 to install antennas for the event. Two HF antennas were installed as planned. What appeared to be the most challenging aspect was mounting the end of an antenna using the parking lot light pole as the support. Actually, this took little time. We were able to mount one end of the 63ft. MyAntennas.com EFHW-4010P antenna to the top of the parking lot light pole using a 30ft. telescoping pole with a weighted line dropped over the top of the fixture. Sling-shots and bows were ruled out because of built-up structures in the vicinity. Direct access to building supports for mounting the other antenna ends and coaxial cable runs required permission from station personnel to gain physical accesses. Joe, KT3I, provided those accesses. Joe works at Station 210 as a city firefighter. Installation of the two antennas took just over an hour.



Mounting Antenna Wire support on Top of 30ft. Tall Light pole

Setting up for battery power took place at 12:30 p.m. on Saturday, January 28th. Joe and Don transported several battery boxes totaling over 400Ah to the station classroom where operating would take place. Bob brought his personal battery box to the event. The two Valence Batteries (276Ah) below were the main batteries, and they were supplemented by other battery boxes totaling over 130 Ah. Some Go-box owners also brought their own batteries.

(2ea.) Valence Batteries (276Ah)

Station Operations

Scheduled hours of on-air-operation was broken down into three-hour time slots:

- 2:00 p.m. to 5:00 p.m. on Saturday, January 28th.
- 5:00 p.m. to 8:00 p.m. on Saturday, January 28th.
- 8:00 a.m. to 11:00 a.m. on Sunday, January 29th
- 1100 a.m. to 1:59 p.m. on Sunday, January 29th

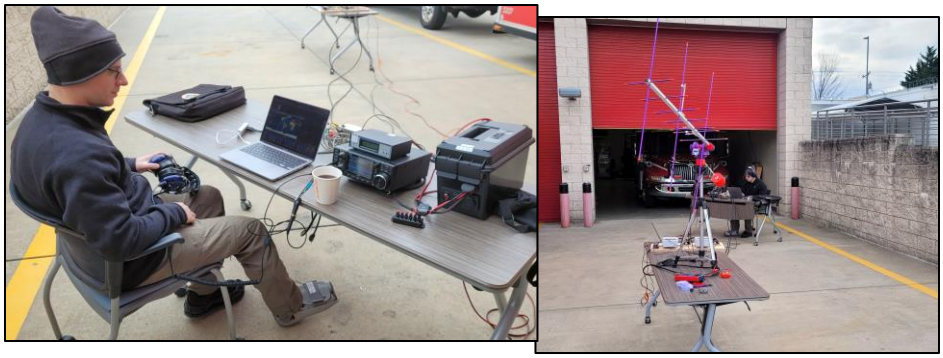
On Saturday, Joe, Bob, and Don arrived early. Joe and Don completed the coaxial cable run from the antennas to the classrooms. Prior to 2:00 p.m. Alex (KO4ZMC) reported for operating. Jan (KB2LRX), Sean (K4KBK), Ian (N8IK) and Andrew (KI4THF) subsequently arrived. Jan was the event photographer on Saturday.

For contact logging, all stations used the N3FJP software during the entire event. With instructions from Alex a network connection was made between computers at the 20m station and at the 40m station. This enabled real-time viewing of all contacts by both stations on a single screen. Joe had already activated a local WIFI network for this networked operation.

Bob operated the 20m station from 2:00 p.m. to 8:00 p.m. Jack (KE7VOU), who was scheduled to operate the 20m station from 5:00 p.m. to 8:00 p.m., was unable to attend.

Alex operated the 40m station from 2:00 p.m. to 8:00 p.m., except for a period when KI4D operated the station.

Joe set up his SATCOM station operation and began searching for SATCOM contacts. He continued, but was limited by obstructions impacting the look angle of his antenna beam.



Joe (KT3I) at the SATCOM Station

During mid-afternoon, we were visited by City of Alexandria Councilman Kirk McPike. He expressed a sincere interest in what we were doing with Winter Field Day and voiced his understanding of how our activities could support the city during emergencies. We quickly organized a photo shot with him and club participants with Jan taking the photo.

City of Alexandria Councilman Kirk McPike with Club Members

After approximately 2 hours of operating, at the suggestion of Bob, antennas were swapped. The 40m station, which did not have the best impedance match with the Palomar Bullet 9 71ft. antenna, was switched to the MyAntennas.com EFHW-4010P antenna. Immediately, there was an improvement in contacts on 40m. Also, the 20m station seemed to do better using the Palomar Bullet 9 antenna.

After the antenna swap Bob was having a lot of success reaching farther and farther west as the afternoon wore on. Eventually he made contact with the western side of Washington state.

At some point it was decided that it was pizza-time. Don went on a run to Pickett street's Domino Pizza and returned with pizza and Dunkin Donuts, coffee and cold water.

By 8:00 p.m. it was obvious that Alex was having the most success with contacts on 40m. In addition to search and pounce, he would run frequencies with a great success. At one point Alex made contact with N3FJP, the author of the software we were using. By the end of the evening, Alex had been so successful that he was awarded an IC-706MIIG "Go-Box" of his own by KI4D.

Alex Operating on 40m HF

On Sunday, January 29th, Joe and Don arrived early and Erik was waiting. Rick (N4ASX) arrived and brought McDonalds breakfast sandwiches for the team; and Sean brought morning coffee and donuts from Dunkin Donuts. Bob and Jan subsequently arrived.

Erik began operations on 20m for his 3-hour time frame at 8:00 a.m.

Alex arrived at 8:00 a.m. and again began operating the 40m station using his newly acquired Icom IC-706MIIG transceiver.

Soon Erik noticed that when the 40m station transmitted, his IC-7300 transceiver's front end would become saturated and desensitize to protect itself. He switched to the CW mode and continued to operate.

Jason (WA6MPR) arrived early for his operating slot which was to begin at 11:00 a.m. At 11:00 a.m. Erik and Jason changed shifts.

Shift Change for Erik and Jason

Jason began operating in the 20m station slot and operated until 1:59 p.m. Alex and Bob were able to help get Jason's computer networked using N3FJP.

Alex and Bob with Jason Getting Jason's Computer Networked Using N3FJP

Joe resumed operation of the SATCOM station on Sunday searching for that elusive SATCOM contact worth 500 bonus points. Later that morning, Joe returned from his SATCOM station with an excited look on his face; he had accomplished success with a SATCOM contact with a Winter Field Day station in Michigan. He had earned 500 bonus points for the club. Alex operated on 40m until he had to depart; and at this point, Don operated the 40m station until the end of on-air-operations.

The event also allowed club members a chance to enjoy the event, and chat about almost anything.

N4ASX and K4KBK

Shut Down

Jason, Jan, Joe and Don began Winter Field Day shut down at exactly 2:00 p.m. The shut-down process involved dismantling the stations, transporting station equipment to vehicles, removing antennas and cable, and cleaning up the Fire Station 210 work spaces. The shut-down was completed at approximately 3:30 p.m. We were very, very fortunate to have Joe do the inspection after we did our clean-up to make sure we got it right.

Winter Field Day Statistics Summary

Alexandria Radio Club (W4HFH) operated for 12 hours and made over 200 contacts during the event while contacting 42 states, Puerto Rico, and Canada. The top 5 states with the most contacts were PA (25), OH (18), NC (16), NY (14) and VA (13). There were 126 contacts on 40m, 84 contacts on 20m, and one contact on 70cm. There were 210 phone contacts and 9 CW contacts on the HF bands; with one phone contact via SATCOM.

Conclusions and Lessons Learned

For our first Winter Field Day, we were very, very fortunate to have so many things in our favor. From the time Rick Bunn first mentioned Winter Field Day in mid-December, to Kevin Coleman securing Station 210 as the location on January 3rd, to having Joe Porcelli (KT3I), who works at Station 210 on our team; things could not have been more in our favor. Considering all of these factors and a work mishap with Joe's leg, this was a very successful operation. This successful event established that the club can react and organize a response to a relatively short notice requirement, and do well. For the first time, club members were able to use their own "Go-boxes" operating on battery power while simulating emergency communications with the club call sign, W4HFH. This was also our first time operating on HF at a City of Alexandria emergency response facility, Fire Station 210. Under Winter Field Day 2023 rules, we operated with 100-watt transmitters on 40 meters and 20 meters HF for a total of 12 hours on Saturday and Sunday.

The W4HFH WFD statistics report reflects the nature of this training exercise. This exercise was primarily focused on logistics and training objectives, and not on contesting to achieve maximum contacts. That is, a normal contesting station does not make deliberate changes in station equipment configurations every 3 hours during contests. Each Go-box owner brought in different equipment and had to make different adjustments for proper station operation. Also, W4HFH operated roughly one-half of the time allocated for WFD contesting. It seems we had more mid-range contacts from the north and west than close-in contacts. This may have had to do with placement and orientation of our antennas. More complete understanding of the propagation patterns of our antennas will take further study.

Feedback from WFD participants with Go-boxes and the operating stations revealed a feeling that we accomplished both the club objectives and their personal objectives. Being able to test our personal Go-box stations during a training exercise is the best way for us to have confidence that we are ready for real emergencies. From a technical

standpoint, one feedback comment was that we needed to have filters for our radios to prevent mutual interference; and we do have such filters. Next time we need to remember to put them on the preparation's checklist. It was also commented that we need more club members available with Go-boxes because those scheduled to operate may suddenly become unavailable. Also, there is a possibility that multiple city locations may need HF capabilities. It would certainly be important to exercise these capabilities to make sure they are ready for real emergencies.

It was a unique experience for the club to see a club member, who is a youth, demonstrate such exceptional abilities as ham operator Alex did. He was very knowledgeable and exceptional as a ham, and we learned from him. As most organizations involved with youth should, his presence required us to have youth protection guidelines in place. We were able to quickly develop proper guidelines for the club; and fortunately, we had club members with formal youth protection training present at the WFD event at all times.

Finally, thanks to all club members who contributed to this effort with their equipment, efforts or time to make this effort a success. However, we can't say enough about Joe (KT3I). Success with this effort would not have been possible without his many contributions from start to finish.

Submitted: February 1, 2023
Prepared by: Don Lewis, KI4D
Alexandria Radio Club