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Motivating Amateur Radio Clubs to Open New Initiatives (MARCONI)

Program 6: SERVED AGENCIES & ROLE of WINLINK in EMCOMM

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Operational Guidelines

Statement of Program Purpose: To provide guidance to Amateur Radio Clubs on how to provide communications and security for community groups wishing to receive amateur radio service communication support for their activities. For Clubs with waning membership and lacking in activities, this is an effective way to energize the Club to come together to perform some community service and provide good public relations for the Club with basically minimal time and almost no expense needed from the Club's members or treasury, respectively.

Scope of a Served Agencies Program: Groups that provide emergency and recreational services include SKYWARN for the National Weather Service (NWS) and ARRL; Community Emergency Response Team (CERT); Medical Reserve Corps (MRC); American Red Cross (ARC); Amateur Radio Emergency Services (ARES); and local Town Agencies. There are private non-profit organizations such as the MS Society sponsoring 5K walks, The Hole in the Wall Gang Camp program fundraiser bicycle race, local

YMCA 5K road races; American Heart Association road races, local Town Fairs with associated road races; and any number of for-profit local businesses which sponsor road races and may request or benefit from security and communication services that can be provided by local Amateur Radio Clubs; all one needs to do is ask them if they would like to include amateur radio services as part of their event security.

Our Club, the Meriden Amateur Radio Club/Wallingford Amateur Radio Group (MARC) has a strong bond with the Town of Wallingford Office of Emergency Management. Our Club provides communications consultation, back up communications, personnel support in emergencies, and training for local arms of the emergency management structure, such as CERT and the MRC. The Town of Wallingford has allowed us access to a fully outfitted, repurposed firehouse for use on an ongoing shared basis with other Town Agencies such as the Health Department and Fire Department. We maintain a radio communications center and our W1NRG Club station, a communications trailer for field operations, and equipment to advance our mutual aims. We maintain a good working relationship with the Town officials including the Office of the Mayor, Police Chief, Fire Chief, Director of Public Health and on down through the rank and file. Each Town will have its own organization chart, but they are all fairly similar.

We have also reached out to help organize and support another area CERT team in a nearby Town – North Haven. We are providing technical and logistical assistance based on our public safety backgrounds and experience with the Wallingford Team. Our members have been working with and assisting the Director of CERT training in North Haven to set up a CERT program in that Town. We have also worked with the Hamden CERT group with shared training. All of these inter-town relationships add to the impact of amateur radio on Emergency Services in local Towns. Clubs will find that in return for their auxiliary support regarding amateur radio communications, Towns will often provide support for upgrading old radio equipment and may even provide a site for establishing a radio center in a Town building, such as we have experienced. Such a site can quickly double as a new Club “Shack.” The possibilities are impressive.

We also receive training from the Wallingford Town Health Department and have assisted them in several real world and tabletop medicine/vaccine distribution (POD) training sessions. We also activate and staff our repurposed firehouse which can be used to shelter up to 25 people in times needing disaster evacuations, such as can occur with flooding after rainstorms. Larger shelters would be in the two high schools, and there is an expectation that we would also help staff the facilities as needed.

Our greatest asset is our volunteers, who have both practical and managerial experience in the professional public safety field of police, fire, EMS, and public health and as amateur radio ARES operators during several past disaster deployments, which also included 9/11 in NYC. We are always willing to share our outreach experience and knowledge with other Amateur Radio Club groups and to assist with their needs. It is suggested the Radio Club in the Town contact the appropriate official to discuss how the Amateur Radio Club might provide support for Town Emergency Services.

Using Winlink for Emergency Communications

In the face of natural disasters, power outages, and other emergencies, the need for reliable communication is critical. Traditional communication infrastructures such as cellular networks and internet services often become compromised or completely unavailable during such events. This is where Winlink, a global messaging system that uses radio frequencies to send and receive emails, becomes an invaluable tool for emergency communication.

Winlink, also known as the Winlink Global Radio Email system, allows users to send and receive emails over amateur radio frequencies without relying on the internet. The system can operate on HF (High Frequency), VHF (Very High Frequency), and UHF (Ultra High Frequency) bands, utilizing a network of radio gateways and RMS (Radio Message Servers) to route messages. It is widely used by amateur radio operators, mariners, missionaries, and emergency services worldwide. In scenarios

where physical access is limited and modern technologies fail, Winlink ensures that essential information can still be transmitted, helping maintain connectivity across distances.

One of the key advantages of Winlink in emergency communications is its resilience. During disasters like hurricanes, earthquakes, or wildfires, conventional communication methods are often disrupted. Winlink provides a decentralized and robust alternative that can function independently of damaged infrastructure. Emergency responders and relief agencies can use it to coordinate operations, request supplies, and provide updates to command centers and the public. This operational continuity can be the difference between a coordinated response and widespread confusion.

A real-world example of Winlink's effectiveness occurred during Hurricane Maria in 2017, which devastated Puerto Rico and rendered most traditional communication systems inoperable. Amateur radio operators using Winlink were among the few able to communicate with the outside world, relaying crucial information to emergency management agencies and families across the globe. Their ability to send emails, resource requests, and situation reports provided a lifeline during the first critical days of the response effort.

Another important feature of Winlink is its capability to handle forms and structured messages. This is particularly beneficial for emergency management, where standardized forms such as ICS-213 (General Message), ICS-214 (Activity Log), and other FEMA and Red Cross documents can be transmitted digitally. This ensures clarity, consistency, and efficiency in communication, reducing the chances of errors and misunderstandings. By using templates, responders can quickly share situational reports, damage assessments, and logistical needs without spending time drafting messages from scratch.

Winlink also supports position reporting and weather bulletins, which can aid in situational awareness during an emergency. By integrating GPS data, users can share their location with other operators or

emergency coordinators. This is especially useful in search and rescue missions, evacuation planning, and tracking the movement of response teams. Additionally, timely weather updates can inform tactical decisions and ensure the safety of personnel in the field. Combined with APRS (Automatic Packet Reporting System), this data becomes even more useful for mapping and tracking large-scale operations in real time.

Beyond its immediate tactical use, Winlink also contributes to strategic planning. Historical logs of communications can be reviewed to assess response effectiveness and improve future emergency plans. This after-action analysis is a key aspect of modern emergency management and helps drive continuous improvement. Emergency planners can evaluate response times, message clarity, and operator availability to make informed decisions about how to refine protocols.

Training and preparedness are essential to effectively use Winlink during emergencies. Amateur radio operators involved in emergency communication groups, such as ARES (Amateur Radio Emergency Service), RACES (Radio Amateur Civil Emergency Service), and SATERN (Salvation Army Team Emergency Radio Network), often participate in drills and exercises to ensure they can deploy and operate Winlink systems efficiently. These exercises help identify gaps in coverage, equipment needs, and operator skills. Furthermore, coordination with local emergency management agencies helps integrate Winlink into broader communication frameworks, ensuring a unified and streamlined response.

Some communities have gone a step further by incorporating Winlink into their official emergency operations plans. For example, county emergency management offices may maintain dedicated radio stations equipped with Winlink, operated by trained volunteers who can step in immediately when needed. This proactive integration not only speeds up response times but also fosters stronger relationships between amateur radio volunteers and professional emergency managers.

The accessibility of Winlink also enhances its value. With relatively affordable equipment and an amateur radio license, individuals and organizations can join the network. This democratization of

emergency communication empowers communities and fosters a sense of preparedness and resilience. High schools, colleges, and community centers have started offering amateur radio training programs that include Winlink usage, encouraging the next generation of emergency communicators.

Technological advancements continue to expand Winlink's capabilities. With developments like VARA HF (a modern digital mode that enables high-speed transmission) and portable digital stations that can be set up in the field, Winlink has become more efficient and user-friendly than ever before. Solar-powered and battery-operated systems make it feasible to operate Winlink stations off-grid for extended periods, further enhancing its utility in disaster zones.

In addition to supporting emergency response, Winlink is also used in public service events and non-emergency situations. Large-scale marathons, bike races, and festivals often rely on amateur radio communication to ensure safety and logistical coordination. These events provide valuable practice opportunities for Winlink operators, allowing them to test their systems under real-world conditions and refine their procedures in preparation for emergencies.

In conclusion, Winlink serves as a vital communication tool in emergency situations where conventional systems fail. Its ability to transmit emails and structured data via radio waves makes it a resilient, flexible, and efficient solution for emergency responders. By investing in training, integrating Winlink into emergency plans, and continuing to advance its technology, communities can enhance their preparedness and response capabilities in times of crisis. As natural and man-made disasters become increasingly frequent, systems like Winlink will play an ever more important role in safeguarding lives, protecting infrastructure, and supporting recovery efforts. The collaborative spirit of the amateur radio community, combined with innovative tools like Winlink, ensures that communication can persist even in the darkest of times.

Typical Served Agencies Scenario (Case Study):

Getting Started: In 2022 we were approached by the Hole in the Wall Gang (HITWG) Charity from Ashford, CT, which provides services to disadvantaged children from all over the world. We were asked to assist in a fund-raising bicycle charity event which included 15-, 30-, and 62-mile bicycle routes in south central CT, with the start/finish in Middlefield, an adjacent town to Wallingford. The event was called Pedal for Pies. Our Club members met with race organizers and worked up a plan to provide communications coverage for various rest/water stations along the 3 routes. The HITWG group's expectations were discussed, and a communications plan developed which involved simplex and radio ops on 2 repeaters, which were necessary to cover the route due to its size. Our Club has a core base of users with experience in these types of events. We also cooperated with area amateurs from the Middlesex Amateur Radio Club and received permission to use the Killingworth repeater, maintained by the Shoreline Amateur Radio Club. It really does take a village.

We were able to provide amateur radio communications for the command post at Lyman Orchard in Middlefield, which was the start-finish, and along the route at water/first aid stations. We also provided vehicles to follow behind the 3 race routes and were alert for bikers who were struggling with the course and needed assistance either mechanical or medical. Information was fed both to and from the command post via 2-meter repeaters in Wallingford and Killingworth.

At the last minute, the 62-mile portion of the event was dropped due to inclement weather conditions of rain and high winds, which challenged the safety of the participants. The 15- and 30-mile runs occurred as scheduled. The 62-mile route is expected to return in 2023.

Equipment for Setting Up Served Agencies: Equipment needed includes personally owned vehicles and Club owned 2-meter radios, including "go" boxes, portable antenna structures. Future bicycle events could involve more stations along the route, and possible use of our Town of Wallingford communications trailer at

the command post. We will develop an operational hand-out sheet for volunteers, including a list of stations along the routes and their tactical call signs, procedures for calling for medical assistance, maps, and other resources. In this manner, every station is fully briefed in writing as to the operation plans and protocols. Every station will also be aware of their specific operational orders. This also helps with documentation for the post event debriefing and in future planning.

Conducting Served Agencies: Several planning sessions with HITWG organizers took place via Zoom. They have done these events at other locations but not in our geographical area. The lead time needed was at the direction of the sponsor (HITWG).

Served Agencies Challenges: The main challenge was the hilly terrain and size of the area. A secondary challenge was the need for adequate numbers of volunteers, and the need for some backup personnel to be available. Communications vis-à-vis the ability to actually hear all stations is always a concern and contingency plans need to be addressed.

Served Agencies Costs: Our direct costs were minimal. Fuel costs are an issue but not excessively so. Participants were compensated with lunch and the all-important T-shirt. We have requested minimal dollars from Club funds for ARRL ARES yellow safety vests for participants, which will identify our roles and purpose to the public and provide pedestrian safety. These will be used for future events and will be available for other public activities.

Served Agencies Rewards: The rewards for this activity include the satisfaction of completion of the event and the establishment of a good relationship with the HITWG event organizers. They were grateful for our roles and have asked us to come back and assist in future events. Planning for this year's event is taking place. This will likely become an annual Club activity, similar to several of our other events including an MS

walk and a YMCA road race. The positive impact this activity has on the Sponsors and the Towns involved regarding their perception of the benefit and importance of amateur radio cannot be overstated. It provides a raison d'être for amateur radio. We have been amply rewarded by the Town and the Sponsor with letters of gratitude for our efforts, and with budgetary support of our radio program's infrastructure. A clear win-win-win for our Club, the Town, and the Sponsor. This was also the first event for some Club members, and it provided a positive experience for them, further ensuring the growth of our membership. Facebook commentary and other social media posts were very helpful in publicizing the event and our Club's participation. Even smaller events such as providing a 5k charity road race with amateur radio security/communication coverage can reap large positive benefits. The Club's impact grows, and hams are attracted by the activity and soon membership starts to increase. These new members invariably lead to new activities. All that is needed to start down this road is a call to the Sponsor asking if they would consider incorporating amateur radio into their event. This is an excellent Program to increase Club member involvement and Club visibility in the Community. **Δ**

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MARCONI PROGRAM

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