



**BOULDER COUNTY**  
**AMATEUR RADIO EMERGENCY SERVICES**  
*Region One – District Three*



**Colorado Amateur Radio Emergency Services**

# **MARSHALL FIRE**

## **“AFTER ACTION REPORT” (AAR)**

Prepared by:

**Allen Bishop**  
**Region One, District Three**  
**Emergency Coordinator**

**January 14, 2022**

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## Introduction

On December 30, 2021 the devastating Marshall Fire roared through Superior and portions of Louisville, Colorado. The fire started south of Boulder and was fanned by intense winds along the front range foothills. Wind gusts from 70 to 105 mph occurred at the base of the foothills, including Boulder and along Highway 93 south toward Golden. The strong winds fanned a destructive grass fire which originated near Marshall and then quickly spread east to Superior and Louisville consuming over 6,200 acres. Approximately 1,084 homes and seven commercial structures were destroyed, and 149 homes and another 30 commercial structures were damaged by the fire.

At approximately 1230 hours, BCARES received an activation request from the Boulder *Office of Emergency Management (OEM)* to activate the *Emergency Operations Center (EOC)* - BCARES ESF-2A communications position. At that time staffing was initiated with the activation of the BCARES Radio Network with three BCARES members assigned to the EOC. The BCARES net was activated by 1500 hours to begin resource management, Everbridge response logging and staffing of assignments as they were issued by the Office of Emergency Management via the EOC.

Staffing for future operational periods was planned on a daily basis with all assignments covered from 12/30 through each daily operational period which was consistent and parallel with the operational periods of the EOC each day. This included the requirements to support evacuation sites and the establishment of emergency radio communications as commercial power failures and preventive shut-downs by commercial suppliers were evolving in the foothills, resulting in the loss of commercial communications including land lines, DSL services and related cellular communications. Following the failure of commercial battery backup systems for cellular and land line communications, 911 services for the Boulder Mountain Communities also failed. To facilitate a restoration of these emergency services, BCARES activated the Mountain Emergency Radio Network (MERN) described in greater detail later in this report.

The intent of this After-Action Report (AAR) is to critique the primary operations of BCARES and provide a constructive assessment of those elements that worked well and those that require changes in order to meet future requirements of similar county-wide events. In addition, a summary of the interactions between BCARES and the *Emergency Support Function* positions of ESF-5, ESF-6 and ESF-13 are also included.

Any questions or concerns are welcomed and should be addressed to the undersigned.

Respectfully submitted:



Allen Bishop  
K0ARK  
Boulder County Amateur Radio Emergency Services  
Region One, District Three  
Emergency Coordinator & Chairman  
[abishop1150@comcast.net](mailto:abishop1150@comcast.net)  
(303) 437-7835 mobile

## **Overview**

The Marshall Fire resulted in the activation of the BCARES EOC radio communications position including the establishment of communications with ESF-5, ESF-6, and ESF-13 for the duration of the activation. As the Marshall fire expanded, evacuation center support was requested for the following evacuation centers:

- YMCA - Lafayette
- North Boulder Recreation Center - Boulder
- Rocky Mountain Christian Church - Niwot

These BCARES operational positions provided on-site situational reports (SIT-REPS) including the following headcount data: number of adult males and females, number of minors (<18) and family units. These reports were obtained through the use of the BCARES digital messaging system (*WINLINK*) with remote stations established at each evacuation center. Hourly status reports were submitted on ICS-213 forms to ESF-6 in concert with the hourly EOC briefings.

As the wind event continued through the first operational period of 12/30 into 12/31, power failures and preemptive shutdowns in the mountain communities of Ward, Gold Hill, Jamestown, Allenspark and Raymond began to evolve and expand. As commercial power was eventually lost at these locations, commercial communications also began to fail as battery backup resources became depleted. Within an 8-hour period, all land line, DSL, and Cell Service also went off-line. These communications failures resulted in the loss of 911 service to the effected communities. As reports were received by the BCARES EOC ESF-2A position from our activated mountain radio stations, the Mountain Emergency Radio Network (MERN) was activated.

*As a historical note: MERN was established following the Four-Mile fire of September 2010 to ensure emergency communications were maintained as commercial communications and power were lost. The MERN network consists of repeaters that were installed at the fire stations at Gold Hill and Allenspark along with the privately owned Airlink repeater and the community centers of Nederland and Raymond. These repeaters provided the emergency communications links that facilitated the restoration of 911 communications back to the dispatch center for the duration of the power outages.*

## **Situational Assessments and Operational Communications Objectives**

- ✓ Activation of amateur radio communications at ARES Region 1, District 3
- ✓ Activation of BCARES to support the event with assignments to the EOC.
- ✓ BCARES members and mutual aid ARES operators from neighboring Districts established local communications to the BCARES EOC radio position from designated field locations.
- ✓ Transmission of Situation Reports via ICS-213 forms to ESF positions as directed by County Emergency Management.
- ✓ Transmit BCARES SITREPs to Regional and District level leadership as formatted ICS-213 forms using WINLINK and email systems.

## **Operational Elements**

In accordance with the briefing by the OEM, the following deployment elements were added to the initial BCARES functional assignments:

- Element # 1:** Activation of the BCARES ESF-2A Position at the Boulder County Emergency Operations Center. (Initial activation)
- Element # 2:** Activation of the following radio networks within Boulder County:
- BCARES Radio Network – Primary Net
  - Mountain Emergency Radio Network (MERN)
  - Allenspark Neighbors Emergency Network (ANEN)
  - Airlink (Alternate Access Radio Network)
- Element # 3:** Establishment of BCARES voice and digital messaging communications capabilities at each of the reporting and evacuation centers.
- Evacuation Centers
    - YMCA - Lafayette
    - North Boulder Recreation Center - Boulder
    - Rocky Mountain Christian Church - Niwot
- Element # 4:** Activation of the Mountain Emergency Radio Network (MERN) covering the following mountain communities with operational procedures for reporting 911 emergency calls from the following foothills communities:
- Gold Hill
  - Ward
  - Jamestown
  - Allenspark
  - Raymond
- Element # 5:** Establishment of an alternative 911 call system to allow those mountain communities that lost commercial power and subsequent voice communications the ability to report 911 emergencies through the MERN communications network to the ESF-2A (BCARES Communications) position and then reported in person to the 911 center which is co-located in the Boulder County EOC facility. This element was critical to maintaining effective 911 services during the wind driven failure of commercial power and related commercial communications within the affected mountain communities listed in Element #4.

## Critique and Recommendations

<b>ACTIVITIES</b>	<b>POSITIVES</b>	<b>NEGATIVES</b>	<b>RECOMMENDATIONS</b>
1. Activation of BCARES Net	Activated at 1500 hours with adequate staffing for the first operational period.	None	None at this time.
2. Activation of ESF-2A Position	Allowed BCARES to get ahead of the mission growth curve early on.	None	None at this time.
3. Establishment of ESF reporting	Through the use of ICS Form 213, hourly reports were provided to ESF-6 as evacuation center populations Continued to grow.	The 213 forms were not filled-out correctly. Date and time stamps were not filled in, resulting in the lack of ability to chronologically list the 213s as they were submitted.	Refresher training on use of ICS forms.
4. Situational Status reports	I The MERN networks were activated without delay due to the presence of BCARES members already in place at their mountain residences.	The amount of voice traffic at times tended to overwhelm the primary BCARES net.	Additional staffing will have to be committed to early on so that a "Resource Net" can be established as radio traffic increases.
5. Stand Down of Field Locations	As evacuation sites were closed, BCARES members who were providing radio links to the EOC stood down their operations on a timely basis and returned to their homes.	None	None at this time.
6. Staffing	9 out of approximately 60 members deployed with 0 additional available for expanded operational periods. Additional staffing had to be requested from other Regional/Section ECs.	A continuing issue of poor response has jeopardized the capabilities and commitments of BCARES. This lack of commitment by members compromises our MOU agreements.	The actual number of volunteers will continue to be reduced making staffing a challenge as long as the COVID-19 pandemic continues unabated. To offset this situation, it will be necessary to continue to rely on outside resources within the ARES framework.
7. Operations Period Support	Due to the EOC's initial operational period of 24 hours, the demand on BCARES staffing was met with the Initial Everbridge activation.	Once the EOC's operational period continued for a second 24 hour operational period, BCARES was not capable of staffing assigned Tasks with its own members.	A re-invigorated membership is needed to ensure members understand the importance and commitment of emergency communications providers.

## **Message Log Report – BCARES Digital Net**

The following data was based upon the reporting structure and requirements for the period BCARES supported the Marshall Fire (12/30 through 12/31)

<b>MESSAGE TYPE</b>	<b>FREQUENCY</b>	<b>SENT TO</b>
Shelter Status Reports	Hourly	ESF-6
Mountain Comm. Reports	Hourly	ESF-13
<b>Number of Days Reporting:</b>	<b>2</b>	
<b>Number of Shelter Reports:</b>	<b>18</b>	
<b>Number of Comm Reports:</b>	<b>10</b>	
<b>TOTAL REPORTS:</b>	<b>28</b>	

## **Final Assessment**

The overall performance of those members of BCARES who responded to the call-out was exceptional. From the number of members who signed up and reported to their assignments to the mission focus and activities they were responsible for – everyone without exception operated professionally and well above the expectations of the leadership at BCARES and its served agency leaders.

However, while those that responded to the Everbridge call-out are acknowledged, the overall performance of the BCARES membership was disappointing. With over 60 bonified members in “good standing”, less than a dozen responded to this emergency. If it were not for the ARES Region One, Section leadership and their support in providing 4 staff personnel and 2 management staff resources, BCARES would not have been able to support the Marshall Fire event in concert with the expectations of its served agencies.

In summary, while I believe the primary goals were achieved by BCARES, specifically in the area of WINLINK based messaging and WEBEOC reporting, if it were not for external resources from our Region, the mission would have been jeopardized from the second operational period and beyond.

## Concerns and Recommendations

As with any emergency event, there are factors that were not anticipated and injects that were not expected. This particular fire event, loss of mountain communications and the pandemic environment within which it was executed provided a window into just how vulnerable we all are, whether it is in a personal vein or within the world of emergency communications.

Future events require more thought and scrutiny regarding the ability to provide key data from within operational event locations and environments. Setting up automated weather stations throughout Boulder County can be a significant tool in firefighting and related aerial support. Having real-time weather reporting and especially wind and visibility data are key to the effective and safe management of air assets. Unfortunately, the Marshall Fire was both a fire and wind event which precluded the use of aerial firefighting assets where real-time weather reporting was of little use.

It was also clear that there is the need to ensure all members are trained on the setup and use of digital messaging equipment and requisite applications such as WINLINK. These are services that require frequent testing and training to maintain competency. A training curriculum needs to be created with hands-on training implemented on a quarterly basis. In most cases, those that were originally trained have not utilized the packet sets we have at our EOC facilities for months if not years. You don't have time to read a manual when responding to an emergency.

Lastly, I suggest that each Region and District survey their members and ask the tough and straight forward question, "Would you be available and deploy during a national or significant regional crisis such as a long duration grid failure, pandemic that overwhelms medical resources or in this case a wind driven fire event that compromised the ability to fight the fire and provide reliable commercial 911 services to a mountain environment?" I believe most members will opt to operate from their place of residence, if able, and not leave their families alone. Others may have a plan to re-locate and meet up with other family members in a more safe and secure location, rendering them also unavailable. However, in this current example, the majority of members were not affected by the event directly. Yet they did not respond in the numbers expected and needed.

Therefore, we have to ask the tough question – WHY?

Finally, it behooves us to consider what our level of commitment really is when asked to support our served agencies in major crisis activities. It will be necessary to call upon all ARES organizations across the state and try and muster the needed resources to address these extraordinary events. *This one single factor exemplifies the need for all members to have common expertise in all facets of voice and digital emergency communications and to be ready and willing to deploy with that knowledge.*

I strongly believe we need to craft "Table-Top" exercises that represent these unusual and more frequently occurring events. This needs to be addressed and resolved in 2022.

Respectfully submitted,



Allen Bishop

K0ARK

Boulder County Amateur Radio Emergency Services (BCARES)

Chairman & Emergency Coordinator

Region 1, District 3



# MARSHALL FIRE IMAGES

