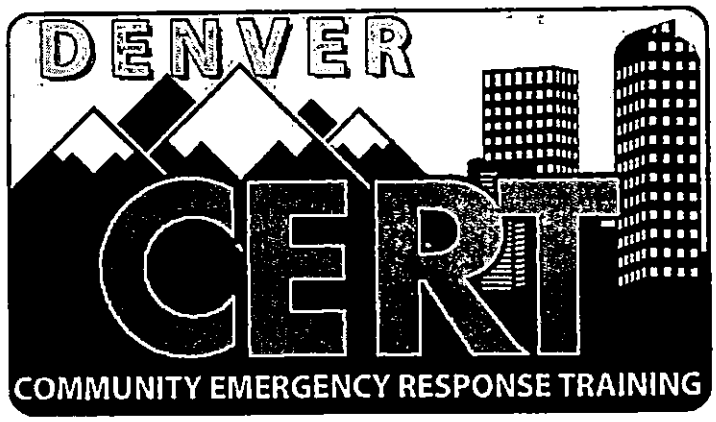
Attachment B



City of Denver Exercise Support
Mass Evacuation Exercise – August 14, 2014
Full-Scale Exercise

INCIDENT ACTION PLAN

INCIDENT OBJECTIVES (ICS 202)

1. Incident Name:	2. Operational Period: Date From: 08/14/2014	Date To: 08/14/2014
AUGUST 14, 2014 EMERGENCY EVAC. EXERCISE	Time From: 1000	Time To: 1700

3. Objective(s):

- Establish an Incident Command structure.
- Manage exercise role players by accounting for them while they are present on the exercise site.
- Satisfy exercise planners need for full documentation of signed waivers from all exercise role players.
- Assure the safety and well being of exercise participants.
- Assist Exercise Staff as otherwise requested.

4. Operational Period Command Emphasis:

- Safety of all participants
- Full accountability of role players

General Situational Awareness

- A chance of showers and thunderstorms. Partly sunny, with a high near 86.
- If lightning is observed, the exercise stops and the time between the lightning and thunder is counted.
- When you count 30 seconds or fewer between lightning and thunder, leave the open areas and take the appropriate shelter IMMEDIATELY.
- Remain sheltered for 30 minutes after the last peal (or sound) of thunder.
- Safe shelter is considered to be inside a substantial building, away from doorways and windows.
- The shelter should be able to keep participants comfortable for up to 1 hour or more. While less than ideal, an enclosed motor vehicle will suffice.

5. Site Safety Plan Required? Yes ☑ No ☐

Approved Site Safety Plan(s) Located at: COMMUNICATIONS CONTROL (ICP)

6. Incident Action Plan (the items checked below are included in this Incident Action Plan):

☑	ICS 202	☑	ICS 206	Other Attachments:	
☑	ICS 203	☐	ICS 207	☑	ICS 201
☐	ICS 204	☑	ICS 208	☐	
☑	ICS 205	☑	Map/Chart	☐	
☑	ICS 205A	☐	Weather Forecast/Tides/Currents	☐	

7. Prepared by: Name: Gary Freeman Position/Title: PSC Signature: _____

8. Approved by Incident Commander: Name: _____ Signature: _____

ICS 202	IAP Page ____	Date/Time: 08/09/2014 1100

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated:
AUGUST 14, 2014 EMERGENCY EVAC. EXE	08142014	Date: 08/14/2014 Time: 1000

4. Map/Sketch (include sketch, showing the total area of operations, the incident site/area, impacted and threatened areas, overflight results, trajectories, impacted shorelines, or other graphics depicting situational status and resource assignment):

The location is in Coors Field, Denver, CO near 20th and Blake Streets in Downtown.

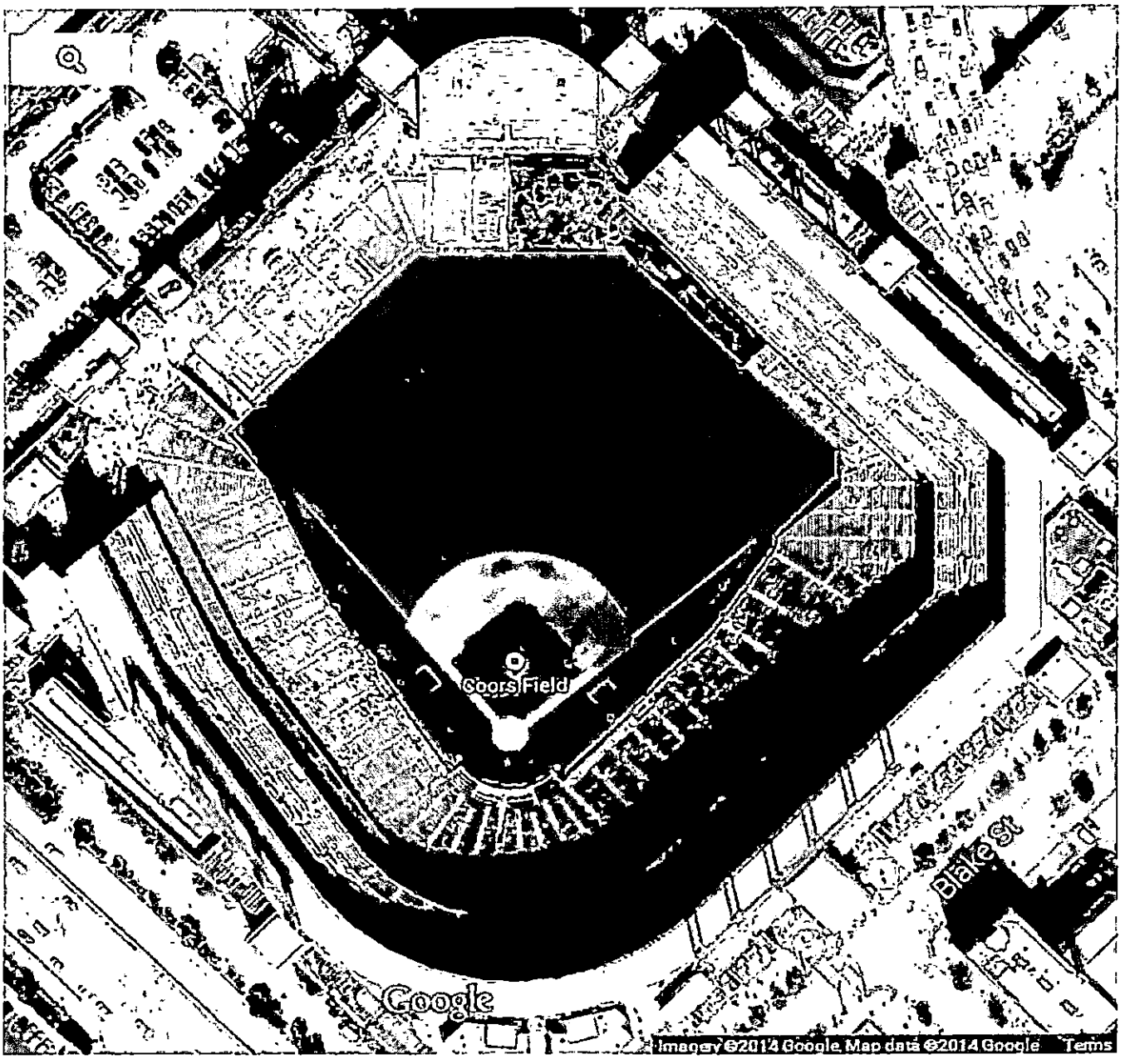
See NEXT PAGE for site views.

5. Situation Summary and Health and Safety Briefing (for briefings or transfer of command): Recognize potential incident Health and Safety Hazards and develop necessary measures (remove hazard, provide personal protective equipment, warn people of the hazard) to protect responders from those hazards.

Of concern during this event are the following:
- A chance of showers and thunderstorms. Partly sunny, with a high near 86.
- If lightning is observed, the exercise stops and the time between the lightning and thunder is counted.
- When you count 30 seconds or fewer between lightning and thunder, leave the open areas and take the appropriate shelter IMMEDIATELY.
- Remain sheltered for 30 minutes after the last peal (or sound) of thunder.
- Safe shelter is considered to be inside a substantial building, away from doorways and windows.
- The shelter should be able to keep participants comfortable for up to 1 hour or more. While less than ideal, an enclosed motor vehicle will suffice.

6. Prepared by: Name: Gary Freeman Position/Title: PSC Signature: _____

 Date/Time: 08/09/2014 1100


Coors Field
Blake St
Google
Imagery ©2014 Google, Map data ©2014 Google
Terms

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated:
AUGUST 14, 2014 EMERGENCY EVAC. EXE	08142014	Date: 08/14/2014 Time: 1000

7. Current and Planned Objectives:

- Establish an Incident Command structure.
- Manage exercise role players by accounting for them while they are present on the exercise site.
- Satisfy exercise planners need for full documentation of signed waivers from all exercise role players.
- Assure the safety and well being of exercise participants.
- Assist Exercise staff as otherwise requested.

8. Current and Planned Actions, Strategies, and Tactics:

Time:	Actions:
1100	Denver ARES/CERT Team report to stadium Gate A. Conduct radio check. Change to exercise frequency.
1105	Set up registration tables and chairs and all documents. Mark lanes for registrants.
1145	Be prepared to start receiving registrations. Some team members at Section 111-114 concourse.
1200	Entry gates opened. Registration begins.
1250	Be ready for STARTEX.
1300	STARTEX.
1420	Be prepared to start receiving check-outs.
1430	ENDEX.
1500	Take down all registration materials and the registration tables and chairs. Remove all signs, banners and other items of the team.

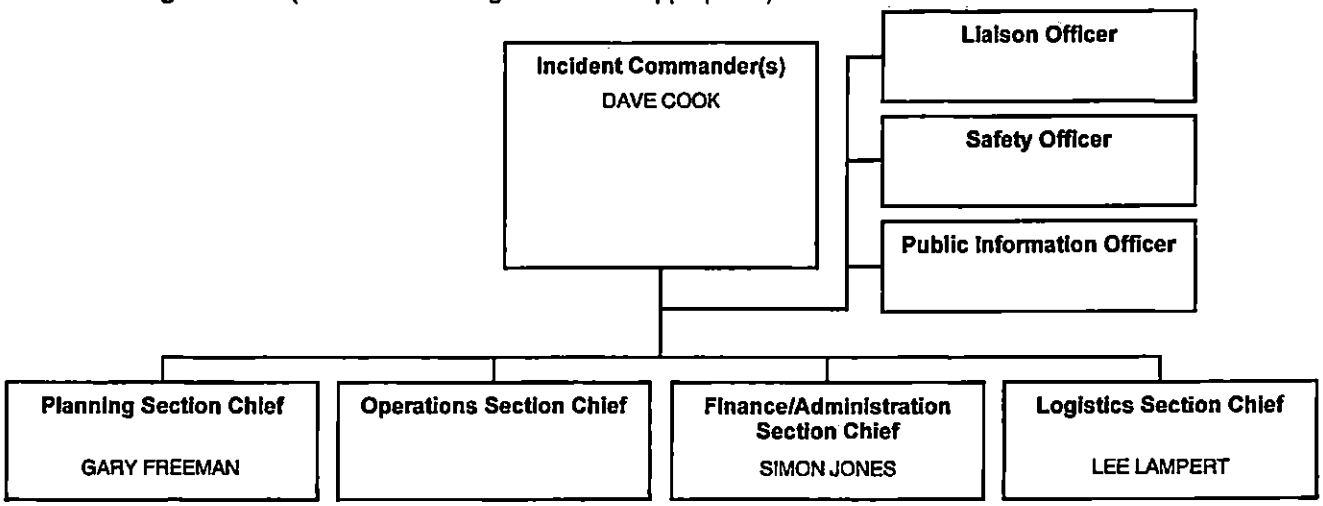
6. Prepared by: Name: Gary Freeman Position/Title: PSC Signature: _____

 Date/Time: 08/09/2014 1100

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated:
AUGUST 14, 2014 EMERGENCY EVAC. EXE	08142014	Date: 08/14/2014 Time: 1000

9. Current Organization (fill in additional organization as appropriate):



6. Prepared by: Name: GARY FREEMAN Position/Title: PSC Signature: _____

 Date/Time: 08/09/2014 1100

ORGANIZATION ASSIGNMENT LIST (ICS 203)

1. Incident Name:	2. Operational Period:	
AUGUST 14, 2014 EMERGENCY EVAC. EXERCISE	Date From: 08/14/2014 Time From: 1000	Date To: 08/14/2014 Time To: 1700

3. Incident Commander(s) and Command Staff:	
IC/UCs	DAVE COOK
Deputy	
Safety Officer	
Public Info. Officer	
Liaison Officer	

4. Agency/Organization Representatives:	
Agency/Organization	Name
DENVER OEMHS	CAROLYN BLUHM
DENVER OEMHS	JIM KRUGMAN
COLORADO ROCKIES	KEVIN KAHN

5. Planning Section:	
Chief	GARY FREEMAN
Deputy	
Resources Unit	
Situation Unit	
Documentation Unit	
Demobilization Unit	
Technical Specialists	

6. Logistics Section:	
Chief	LEE LAMPERT
Deputy	
Support Branch	
Director	
Supply Unit	
Facilities Unit	
Ground Support Unit	
Service Branch	
Director	
Communications Unit	
Medical Unit	
Food Unit	

7. Operations Section:		
Chief		
Deputy		
Staging Area		
Branch		
Branch Director		
Deputy		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Branch		
Branch Director		
Deputy		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Branch		
Branch Director		
Deputy		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Air Operations Branch		
Air Ops Branch Dir.		

8. Finance/Administration Section:	
Chief	SIMON JONES
Deputy	
Time Unit	
Procurement Unit	
Comp/Claims Unit	
Cost Unit	

9. Prepared by: Name: GARY FREEMAN Position/Title: PSC Signature: _____

ICS 203	IAP Page _____	Date/Time: 08/09/2014 1100

INCIDENT RADIO COMMUNICATIONS PLAN (ICS 205)

1. Incident Name:	2. Date/Time Prepared:	3. Operational Period:
AUGUST 14, 2014 EMERGENCY EVAC. EXERCISE	Date: 08/09/2014 Time: 1100	Date From: 08/14/2014 Date To: 08/14/2014 Time From: 1000 Time To: 1700

4. Basic Radio Channel Use:

Zone Grp.	Ch #	Function	Channel Name/Trunked Radio System Talkgroup	Assignment	RX Freq N or W	RX Tone/NAC	TX Freq N or W	TX Tone/NAC	Mode (A, D, or M)	Remarks
		TALK-IN	DRC CENTENNIAL CONE	MUSTER	145.490 W		144.890 W	100.0	A	TALK IN
		TALK-IN BACK-UP	CRRG SQUAW	BACKUP	146.670		146.070	100.0	A	BACK-UP REPEATER
		TACTICAL	525 ALPHA DEVIL'S HEAD	GUARD	447.525 W		442.525	146.2	A	EMCOMM REPEATER-GENERAL OPERATIONS
		TACTICAL BACK-UP	525 BRAVO RESERVOIR	GUARD	447.525 W		442.525 W	207.5	A	EMCOMM REPEATER-GENERAL OPERATIONS
		TACTICAL BACK-UP	TAC 1	BACKUP	146.460		146.460		A	SIMPLEX

5. Special Instructions:

6. Prepared by (Communications Unit Leader): Name: GARY FREEMAN Signature: _____

ICS 205	IAP Page _____	Date/Time: 08/09/2014 1100

COMMUNICATIONS LIST (ICS 205A)

1. Incident Name:	2. Operational Period: Date From: 08/14/2014 Time From: 1000	Date To: 08/14/2014 Time To: 1700
AUGUST 14, 2014 EMERGENCY EVAC. EXERCISE		

3. Basic Local Communications Information:

Incident Assigned Position	Name (Alphabetized)	Method(s) of Contact (phone, pager, cell, etc.)
IC	DAVE COOK	CELL-720-347-9650 ; RADIO-KC0MHT ; TAC-
PSC	GARY FREEMAN	CELL-720-258-5015 ; RADIO-KD0SQA ; TAC-
LOGS	LEE LAMPERT	CELL-303-356-7995 ; RADIO-KD0WCN ; TAC-
	CHRIS TENORIO	CELL-303-927-9005 ; RADIO-KD0DUJ ; TAC-
	KEVIN GRIMSINGER	CELL-303-520-1175 ; RADIO- KD0WCM ; TAC-
	BEN ROE	CELL-303-229-7479 ; RADIO-K0YDS ; TAC-
	ROGER JONES	CELL-720-272-8673 ; RADIO-KD0TBG ; TAC-
	CURTIS GARRETT	CELL- ; NO RADIO
ADMIN	SIMON JONES	CELL-720-626-9769 ; RADIO-KE0ABH ; TAC-

4. Prepared by: Name: GARY FREEMAN	Position/Title: PSC	Signature:
ICS 205A	IAP Page	Date/Time: 08/09/2014 1100

MEDICAL PLAN (ICS 206)

1. Incident Name:	2. Operational Period: Date From: 08/14/2014 Time From: 1000	Date To: 08/14/2014 Time To: 1700
AUGUST 14, 2014 EMERGENCY EVAC. EXERCISE		

3. Medical Aid Stations:

Name	Location	Contact Number(s)/Frequency	Paramedics on Site?
Section 111-114	Concourse		☑ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No

4. Transportation (indicate air or ground):

Ambulance Service	Location	Contact Number(s)/Frequency	Level of Service
Denver Paramedics (Ground)	777 Bannock, Denver Colorado	303-436-7222	☑ ALS ☐ BLS
Rural/Metro Ambulance (Ground)	3350 Peoria St. Ste 100 Aurora, CO 80010	303-343-7098	☑ ALS ☑ BLS
Action Care Ambulance (Ground)	P.O. Box 2439 Parker, Colorado	720-870-4700	☑ ALS ☑ BLS
			☑ ALS ☐ BLS

5. Hospitals:

Hospital Name	Address, Latitude & Longitude if Helipad	Contact Number(s)/ Frequency	Travel Time		Trauma Center	Burn Center	Helipad
			Air	Ground			
Denver Health Medical Centre	777 Bannock Denver, CO	303-436-6222 303-602-7399 ER		10 min	☑ Yes Level: 1	☑ Yes ☐ No	☑ Yes ☐ No
University of Colorado Hospital	12605 E 16th Avenue Aurora, CO 80045	720-848-9111		20 min	☑ Yes Level: 1	☑ Yes ☐ No	☑ Yes ☐ No
Presbyterian/St. Lukes	1719 E 19th Avenue Denver, CO	303-839-6000 303-839-7111 ER		15 min	☑ Yes Level: 4	☐ Yes ☑ No	☑ Yes ☐ No
St. Joseph's	1835 Franklin St. Denver, CO	303-837-7111 303-318-2220 ER		15 min	☑ Yes Level: 2	☐ Yes ☑ No	☑ Yes ☐ No
					☐ Yes Level:	☐ Yes ☐ No	☐ Yes ☐ No

6. Special Medical Emergency Procedures:

In the event of a medical emergency that requires calling for an ambulance, the exercise will be STOPPED IMMEDIATELY in the vicinity of the emergency and a clear path established for ingress and egress of emergency equipment.

Because paramedics will be on-scene, first contact should be made with them for any treatment or transport arrangements.

☐ Check box if aviation assets are utilized for rescue. If assets are used, coordinate with Air Operations.

7. Prepared by (Medical Unit Leader): Name: GARY FREEMAN Signature: _____

8. Approved by (Safety Officer): Name: GARY FREEMAN Signature: _____

ICS 206	IAP Page ____	Date/Time: 08/09/2014 1100

SAFETY MESSAGE/PLAN (ICS 208)

1. Incident Name:	2. Operational Period:	Date From: 08/14/2014	Date To: 08/14/2014
AUGUST 14, 2014 EMERGENCY EVAC. EXERCISE		Time From: 1000	Time To: 1700

3. Safety Message/Expanded Safety Message, Safety Plan, Site Safety Plan:

Safety plan for this event:
1. Denver ARES/CERT members are responsible for their own health and safety.
2. Please advise your team partner of any health issues you have so your partner can be aware in the event of a problem.
3. This will be a very long day, 1100 to 1700.
4. The weather forecast is close to 90 degrees with a 20% chance of thunderstorms. Please be prepared for this.
5. Dress appropriately, and wear your CERT vest. Shorts are allowed. Wear sturdy shoes and no sandals or flip flops.
6. You may be assigned to a location without shelter or cover. Be prepared.
7. If you can, drink electrolytes such as Gatorade or similar drinks to keep your electrolytes balanced. In all cases, stay hydrated.
8. Your are responsible to bring snacks and a hat (CERT or otherwise).
9. Should you start feeling ill, or if you are injured, you are to call or contact the Safety Officer by radio or in person, immediately.
10. EMTs will be on site. If needed, an ambulance will be called.
11. Bring and use sunscreen. Recommended 30 SPF or higher and broad spectrum.

Lightning:
1. The principle lightning safety guide is the 30-30 rule. The first "30" represents 30 seconds. When lightning is observed, stop and the time between the lightning and thunder is counted. When you count 30 seconds or fewer between lightning and thunder, take shelter IMMEDIATELY.
2. The second "30" represents minutes. Remain sheltered for 30 minutes after the last sound of thunder. Safe shelter is considered to be inside a substantial building, away from doorways and windows. The shelter should be able to keep everyone comfortable for up to 1 hour or more. While less than ideal and NOT preferable, an enclosed motor vehicle will suffice. Avoid contact with the steering wheel, ignition, keys and/or radio. The exercise may continue if the time between the lightning and the thunder is greater than 30 seconds.
3. More than one half of lightning deaths occur after a thunderstorm has passed.

Weather:
1.A chance of showers and thunderstorms. Partly sunny, with a high near 86.
2.If lightning is observed, follow the directions above for "Lightning."

General:
1. Safety is our paramount concern. Follow your CERT training. Be safe at all times. If you have questions about the event or potential actions, ask.
2. If necessary, the event will be stopped by THREE LONG WHISTLE BLASTS. Stop what you are doing immediately. Stand still and be quiet. Wait to be told what to do.

4. Site Safety Plan Required? Yes ☑ No ☐

Approved Site Safety Plan(s) Located At: Registration Desk

5. Prepared by: Name: GARY FREEMAN Position/Title: PSC Signature: _____

ICS 208	IAP Page ____	Date/Time: 08/09/2014 1100

Ghostbusters-like crew of amateur HAM radio operators help in emergencies

By Andy Vuong The Denver Post The Denver Post
Posted:

DenverPost.com

When disaster strikes and traditional telecommunications services are curtailed, who do emergency responders call?

A Ghostbusters-like crew of amateur radio operators.

Better known as hams, these are hobbyists who spend their days toiling as divorce attorneys, software engineers or drone- helicopter designers.

During their free time, they serve as experts in old-school communications technology that rides on radio frequencies referred to as the amateur band.

On Friday afternoon, about 65 volunteer ham radio operators were stationed at emergency operations centers, or EOCs, and shelters along the Front Range. Some started helping just as the Colorado floods hit Thursday, and a couple hundred hams have been rotating shifts.

"From Colorado Springs all the way up to Fort Collins, we've had hams involved at each EOC and the state EOC," said Jack Ciaccia, Colorado section manager for the American Radio Relay League, the national association of amateur radio operators. "We've looped them all together via ham radio, and we've linked all of the shelters that we had access to via ham radio. In some cases, like in Lyons, in Jamestown, in Estes Park, ham radio has been primarily the only communications in and out for a while."

Ciaccia, who manned the Boulder County station Friday, said there are several thousand licensed hams in Colorado. About 700 are members of the Amateur Radio Emergency Service, which provides support during floods, fires and other disasters.

"We've been active literally since the forecast came out two days ago," said Robert Wareham, section emergency coordinator for Colorado ARES. "The state and local governments couldn't afford to have us on payroll, but when disaster strikes, they find us indispensable."

More than 50 repeater systems are installed along the Front Range, atop mountain peaks and commercial towers, enabling communications among 5-watt handheld radios and other equipment.

"We can tie multiple repeaters together so we can cover a wide area," Wareham said. "The real magic of amateur radio is we can put together things very quickly."

If there are areas with insufficient coverage, Wareham said hams could get a portable repeater system up and running in as little as 30 minutes.

"During the High Park fire, several of our people worked with the Forest Service and assisted them in setting up their own repeaters out on various mountain peaks because we knew the area, and we also know how to set up the technology equipment," he said.

The Mile High Chapter of the Red Cross sought assistance from ARES on Friday and lauded the group's help.

"We are very fortunate ... to have a representative from the Denver Amateur Radio Emergency Service here, volunteering his expertise and service 24/7," said Elisa DiTrolio, a volunteer spokeswoman for the Red Cross in Denver. "He is monitoring traffic and shelters, and staying in regular contact with the state EOC."

Andy Vuong : 303-954-1209, avuong@denverpost.com or twitter.com/andyvuong

Pueblo County Sheriff's Office

Kirk M. Taylor Sheriff
J.R. Hall Undersheriff

Darlene Alcala
Bureau Chief
Detention

Mark A Mears
Bureau Chief
Emergency Services

David J. Lucero
Bureau Chief
Law Enforcement

May 13, 2015

To: ARES Region 5, District 2 (Pueblo and Huerfano County's) and District 1 (Fremont and Custer County's) Members:
CC: Mike Conder, Chas Carmichael, Chris Truby, Steve Worley, Carrie Worley, Dan Wantuck, Curtis Hubbell, John Fink, Gary Maier, Neal Tew, Bob Nelson, Mark Balsick, Deb Balsick, Dave Balsick, Jeff Reynolds, Don Conway, Richard Holmes, Amanda Alden-Carrier, Jeff Carrier, Emit Hurdelbrink and George Bartling,

ARES Team,

The Pueblo County Sheriff's Office would like to thank the Amateur Radio Emergency Services (ARES) Region 5 Districts 1 and 2, and all of the Colorado ARES members who supported the Pueblo Chemical Stockpile Emergency Preparedness Program (CSEPP) exercise held in Pueblo, Colorado on May 6, 2015.

Your exemplary efforts were noted by this agency and by the federal exercise evaluators. The ARES demonstration of crucial backup communications capabilities at the Pueblo County Sheriff's Office Emergency Operations Center, the Pueblo Field Command Post, the American Red Cross Evacuation Shelter and the State of Colorado, Emergency Operations Center reflects well on the ARES team.

Thank you again for investing your valuable time, infrastructure, equipment, dedication and expertise while practicing with us. We look forward to your continued participation in the future.

Thank you.

Yours in Service,

Kirk M. Taylor
Sheriff

Dayton New Product Tour, Part II, p. 30

Amateur Radio

http://www.cq-amateur-radio.com

COMMUNICATIONS & TECHNOLOGY

SEPTEMBER 2012

CQ

NOW in Digital and Print Editions!

Hams Respond to Colorado Wildfires, p. 13

- CW Results, 2011 CQ WW DX Contest, p. 20
- Focus on Open Source Hardware, p. 56

On the Cover: Colorado burning... and amateur radio operators were in the thick of the emergency response. Story on page 13. Photo info on page 90.

Colorado ARES® Raises the Bar on Amateurs' Wildfire EmComm Response; Amateur TV Plays Vital Role

BY RICHARD FISHER * KI6SN

"It has been a terrifying past few weeks in Colorado, both here on the Front Range and west across the Great Divide," wrote Jack Ciaccia, WMØG, in July from Boulder.

The worst fires in state history had been ravaging Colorado, and as ARRL Colorado Section Manager, Ciaccia kept his fingers on the pulse of the emergency communications provided by a legion of radio amateurs across the state.

His reflections were posted on the Amateur Radio Emergency Service (ARES®) website chronicling hundreds of hours of amateur radio service during the firestorms in June and July.

"There were dozens of Colorado ARES® volunteers on site at any one of eight fires across the state," Ciaccia wrote in his preliminary report (photo A). There were twice as many EmComm operators, as well, "on standby and on resource nets who were being constantly rotated in shifts to relieve their brethren on duty throughout these busy weeks – operating on a 24/7 basis."

WMØG noted that "coordination of the operations on a disaster of this size takes strong, strategic leadership, flexible and responsive tactical management – and dedicated and trained personnel. Fortunately, here in Colorado, we have all of that within our statewide ARES® organization."

Managing Masterfully: SEC NØESQ

Section Emergency Coordinator Robert Wareham, NØESQ (photo B), who had oversight of the ARES® Area Command, "worked extremely well in managing resources between multiple districts and missions," WMØG said. "Special acknowledgment goes out to ARES® Districts 15, 16 and 22 for lending personnel and equipment to D14 in support of the Waldo Canyon Fire response," Ciaccia said. (***IN DEPTH:*** *See pictures and Reuters video from the Waldo Canyon Fire near Colorado Springs, <http://huff.to/M96XFU>. – KI6SN)*

Wareham had visited the ARES® Incident Command Post in the amateur radio operations trailer in Colorado Springs, which "proved to be an excellent resource from which to coordinate resources for the Waldo Canyon Fire—our most active incident. Hundreds of people utilized Red Cross shelters in El Paso and Teller counties."

In a June 14 *Denver Post* article, Randy Long, K7AVV, of Masonville, said since June 10 he had

*1940 Wetherly Way, Riverside, CA 92506
e-mail: <ki6sn@cq-amateur-radio.com>

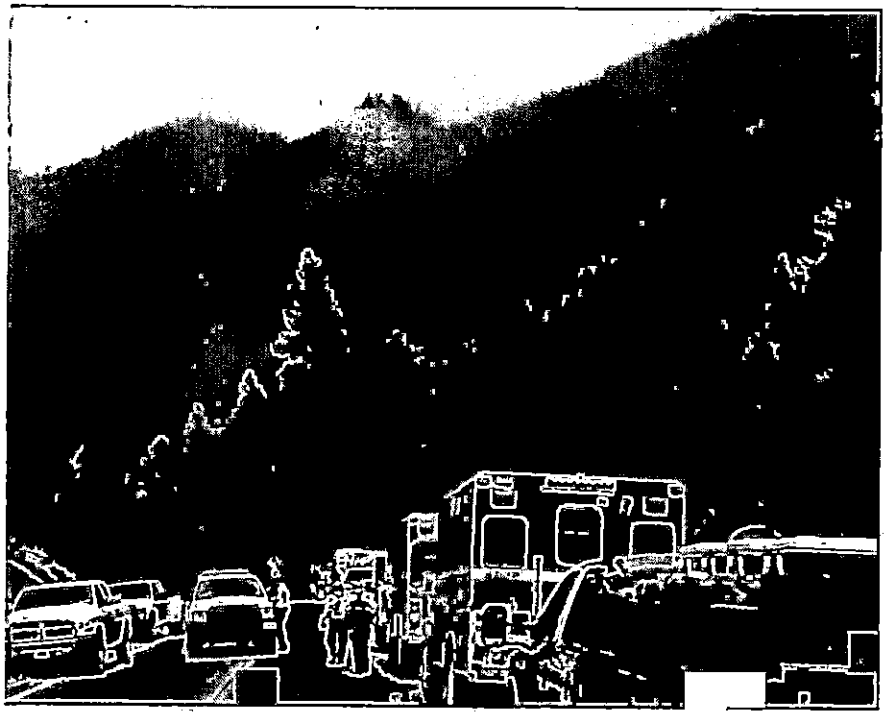


Photo A– On June 27, fire crews in Cache La Poudre Canyon battled the High Park wildfire in the Arapaho and Roosevelt National Forests and Pawnee National Grassland. The fire was started by a lightning strike on June 9. (Courtesy of U.S. Forest Service)

Photo B– Colorado Section Emergency Coordinator Robert Wareham, NØESQ, who had oversight of the ARES® Area Command, "worked extremely well in managing resources between multiple districts and missions," Section Manager Jack Ciaccia, WMØG, said. (Courtesy of Colorado ARES®)

been "managing operators staffing eight-hour shifts around the clock." They set up portable repeaters and relayed messages between the fire lines and command posts. About 40 operators volunteered to provide EmComm.

NØESQ, "along with Long and a handful of ARES® volunteers, reported to the National Guard Armory in Fort Collins as the nearby High Park Fire encircled the Buckhorn and Horsetooth mountains—the sites for some of the public safety communications towers for Larimer County," WMØG said. (Photo C)

"These are the kind of things we train for day in and day out," Wareham told the *Post*. "We just want to keep the people in this county safe." The story said there are about 50 repeater sites in the mountains.

"Shortly after the High Park Fire broke out, radio amateurs in Estes Park and Fort Collins were called upon to provide communications support to the American Red Cross. Hams set up antennas and a cross-band repeater to provide communications from Red Cross Headquarters in Estes Park to their facilities at the fire base, as well as to a Red Cross evacuation center that had been set up at a local high school."

Ciaccia said under Wareham's leadership, the EmComm command structure "had the capability to expand as necessary. Due to the amount and size of the wild land fires, a State Area Command was set up with ARES® Regional ECs reporting twice daily with fire updates, logistical information, schedules, and so on."

This data was coordinated and reported to the served agencies and sent to the Colorado State and FEMA operation centers. "The High Park Fire in Fort Collins, the Flagstaff Fire in Boulder and the Waldo Canyon Fire in Colorado Springs were being managed as Type I (high-severity) fires simultaneously," Ciaccia said.

Shifting from Field Day to Fire Duty

"In the midst of the High Park Fire in District-10 in Larimer County," WMØG reported, "a fast-burning fire broke out in the town of Estes Park in a forested residential section near the east entrance to the Rocky Mountain National Park. (Members of) the local ARES® group—which coincidentally had been practicing emergency preparedness skills on ARRL Field Day—immediately were able to transfer their attention, communication skills and equipment to the real-time emergency at hand."

The High Park Fire was very large and destructive. At containment, it had burned an area larger than Rhode Island—more than 88,000 acres. More than 250 homes had been destroyed.

"The communications tasks here were varied and the agencies needing communications assistance were many," Ciaccia said. "ARES® D-10 simultaneously provided auxiliary communications to the Red Cross, the Larimer County EOC, the Colorado State Patrol, the USFS and the Incident Command Post."

Radio Amateurs on the Front Lines

The EmComm operators, "both experienced and newly enlisted, performed very well throughout the nearly-three weeks of their involvement," WMØG said. "The group was called upon to be prepared to replace communications for the County Sheriff's Communications Repeater which was in the midst of the fire and in danger of being destroyed early on.

Photo C– A communications tower at the top of Rist Canyon is surrounded by scorched earth as the High Park Fire ravaged the area west of Fort Collins, Colorado. A legion of Colorado ARES® and RACES radio amateurs provided emergency communications to fire crews and authorities across the state. (Courtesy of Dave Steinke, USDA)

"Mutual aid was provided by NØESQ in the form of the newly-built Pod-Comm," a rugged communications box with amateur radio HF/VHF/UHF voice-and-data capable radios and statewide trunked system radios.

"It was an extremely useful tool and the need for more of these units deployed strategically throughout Colorado showed they definitely would be beneficial to the ARES mission," he said. News of D-10 ARES®'s work was carried in a *Denver Post* news story.

There's More: Quick Action in Boulder County

Just as the fire teams were getting a handle on the High Park Fire, WMØG wrote, "notification came in to Allen Bishop, KØARK, the EC of D-11 Boulder County ARES®, that a lightning bolt had set off a fast-moving and potentially dangerous wildfire just above the town of Boulder on a peak of one of the city's scenic Flatiron Mountains.

"I happened to be traveling with Allen," Ciaccia said. "We were coming back from visiting the High Park Fire. We immediately responded to the Boulder County EOC where we met the Boulder OEM Director, Mike Chard, who gave us his immediate requirements for deployed ATV (amateur television) to be looking at the fire and for packet communications to be deployed to his designated evacuation shelter.

"We activated the ham gear located at the Boulder County ARES® position at the EOC and started a resource net on a designated repeater frequency while maintaining operations on our main 2-meter repeater," Ciaccia said. "Within 20 minutes, a P5 ATV picture was being received at the EOC and transmitted from a member's home who had a good angle to the fire. "Another portable ATV crew dispatched to the back side of the fire for another TV angle. An hour into the fire we had packet, voice and ATV video communications coming into the EOC." *(**SEE:** "ATV's Vital Role in Colorado's Firefight." —KI6SN)*

On to Waldo Canyon, Colorado Springs

WMØG soon got news that thousands of people were being evacuated and many homes were in immediate danger of being destroyed in the Waldo Canyon Fire raging in Colorado Springs. "We all know now just what a tragic fire this turned out to be—the most destructive in Colorado's history," Ciaccia said. (Photo D)

"That title had been put on the Four Mile Canyon fire in Boulder in 2010 and just a week (earlier) had been newly claimed by the High Park Fire. Now the Waldo Canyon Fire would be the latest holder of that dubious title. Two innocent lives lost, almost 400 destroyed homes valued at more than $110 million will be the tragic legacy."

RMHam Comm Trailer Called to Action

D-14 hams in the Colorado Springs area were immediately on the scene doing almost all of the same activities as those who were needed at the High Park Fire. "Only this time, many more evacuation centers would need to be staffed and ham radio communications gear and personnel installed," WMØG wrote. "After coordinating with our SEC, it was determined by the D-14 EC, Bill Heckler, and Regional EC, Sharon Agun, KCØPBR, that deployment of the versatile and well-equipped Rocky Mountain Ham Communications trailer would be a great asset to have as an ARES® command post."

Within the day, the RMHam Comm trailer (photo E) and ARES® D-22 staff

Photo D– Carrying on emergency communications during the Waldo Canyon Fire from the RMHam Comm trailer are, from left, John Maxwell, WØVG; David Markham, WØCBI; and Jeff Ryan, KØRM. (Courtesy of Colorado ARES®)

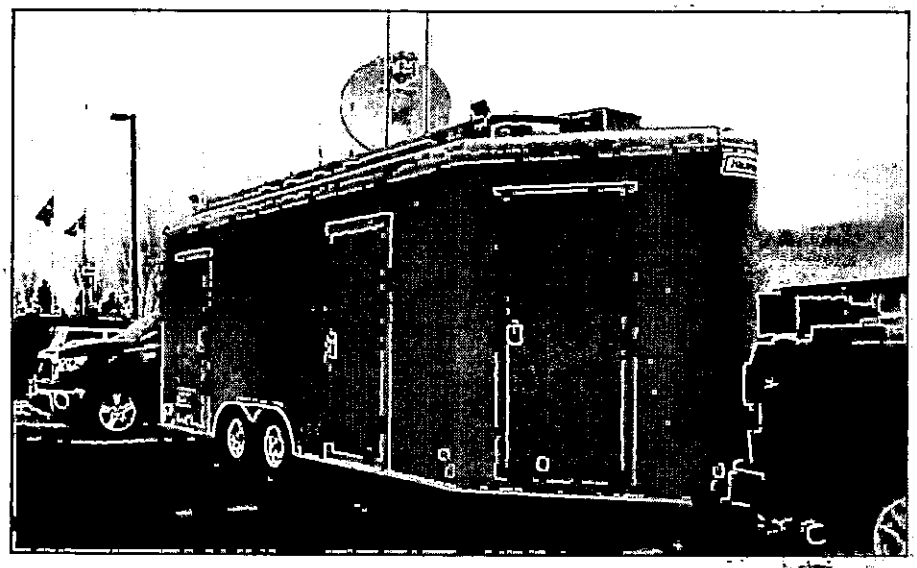


Photo E– Deployment of the versatile and well-equipped Rocky Mountain Ham Communications trailer was "a great asset" as an ARES® command post. (Courtesy of Colorado ARES®)

ATV's Vital Role in Colorado's Massive Firefight

Among the many resources and skills Colorado ARES® brings to the EmComm table, amateur television (ATV) ranks among the most important, according to ARRL Section Manager Jack Ciaccia, WMØG. It played a critical role in fighting fires that have ravaged the state this summer – and has been a key element in Boulder County ARES®'s (BCARES) quiver since the mid-1990s.

"It is the singularly most requested item our served agency – Boulder County Sheriff and his OEM – wants in any emergency," he said. "We have been utilizing ATV for more than 15 years."

It has been used primarily in the fight against wildfires, "due to the ability to send requested live pictures available back to a windowless EOC (Emergency Operations Center)," WMØG said, giving fire managers "a real-time look at the fire and possibly the effect of a flame retardant drop, water drop, and so on." It can give them a look at the terrain and the fire's encroachment, as well (photo F).

Yesterday and Today: All Impressive

"During the Four Mile Fire back in the fall of 2010—where 168 homes were lost—the BCARES ATV crew was spotting endangered residences via their telephoto lenses and coupled with the known GPS coordinates and compass directions provided from the ATV crews, were able to identify exactly where the home was," Ciaccia said. "This allowed the heli-tankers to drop a quick load onto those homes while the Hot-Shot teams were dispatched. At least a half-dozen homes were saved via the ATV crews proactive involvement."

When the recent Flagstaff Fire (in Boulder) was escalating, the Type I (high-severity) fire assessment crews, which had come from Southern California, "complimented Boulder County Sheriff Joe Pelle and the OEM over and over on the efficiency, equipment and personnel . . . They had never seen a county-level EOC in the United States running with such capabilities and professionalism," Ciaccia said. "They did not know that live TV could even be done!" (Photo G)

The crews made a point to visit the BCARES ATV remote positions around the fire and "were amazed by what the BCARES crews were capable of doing" in transmitting video from such remote and rugged locations. "They told BCARES that if and when the fire escalated to a Type I fire under their command, they would like BCARES to continue sending TV pictures for their Type I team's use, too," he said. "The fire never reached more than a Type II (medium-severity) fortunately, and no residences were ever threatened due to the quick response by the local wildfire teams."

The ATV camcorders used by BCARES have infrared capability, as well, "and we find that when darkness comes there is usually nothing visible but smoke. The infrared video gives the EOC and the Command Post a look at what is under the smoke—*the hot spots.* In those infrared shots, you can also see the firefighters on the scene if you need to." (Photo H)

ATV has also been used for monitoring areas where flooding is possible, where there is *no other way* to get a wireless video picture out because of the rugged terrain. "We utilize homebrew ATV portable repeaters to get the signal up and out of the canyons back into town," WMØG said. "The same method is used in any remote locations we might have to serve."

KH6HTV's Expertise and Generosity

All of the transmitting ATV equipment BCARES uses was built "by our ATV guru, Jim Andrews, KH6HTV, <http://www.kh6htv.com> (photo I), who splits his time between his home here in Boulder and his home on Maui," Ciaccia said. "Jim also provides to the community—at his own expense—a very nice ATV repeater on a hill overlooking Boulder that is utilized by the local hams with their own ATV gear on a weekly ATV net. It is used, as well, during these emergency situations. We utilize 70cm, 23cm and 33cm frequencies in both AM and FM modes for video transmission and 2-meter voice coordination of the crews.

"We have developed rugged Pelican® boxes <http://www.Pelican.com> with custom-made video switching and distribution abilities plus additional signal amplification, and so on," Ciaccia said. "We can give any combination of pictures up to a quad-split picture from four different cameras and switched either at the EOC or at the remote site." (Photo J)

ATV EmComm Training, Readiness

ATV training is provided by the BCARES group "and any new member can even borrow a portable ATV setup to get familiar with that mode," Ciaccia said. "That gear is available from the BCARES extensive cache of ATV equipment. This is also true for packet, D-Star, WinLink, and so on—whatever modes they typically can field in an emergency. BCARES does not depend on anyone's personal gear when an emergency arises. It is all stowed in a room provided by the Boulder Sheriff's Communications Center under direction of the OEM."

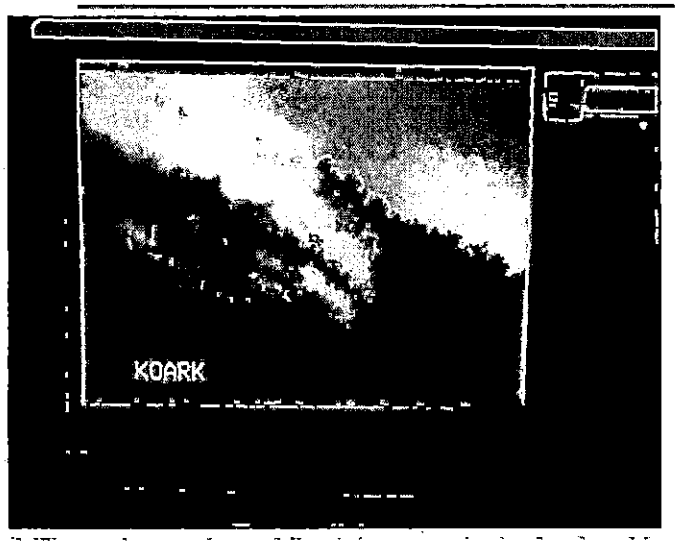


Photo F– Live ATV video such as this from the Flagstaff Fire in Boulder gives Colorado fire managers "a real-time look at the fire . . . and a look at the terrain" to help make critical decisions on strategies and managing resources, Colorado SM Jack Ciaccia, WMØG, said. (Photography courtesy of ARES®)

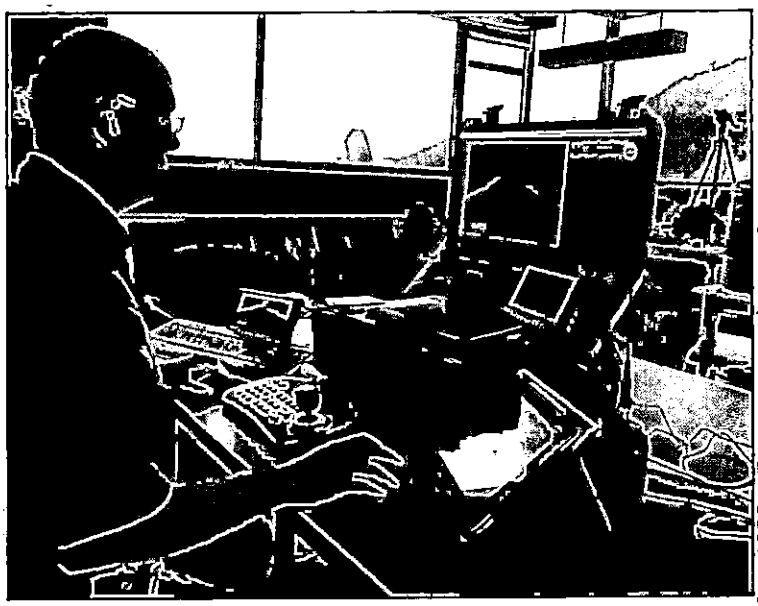


Photo G– Joey Stanford, NVØN, supports ATV ARES® operations during the Flagstaff Fire in Boulder, Colorado.

Photo H– Managers in the Emergency Operations Center watch nighttime ATV video taken of the spreading fire using infrared videography. "You could also see the firefighters on the scene if you needed to," WMØG noted.

At the EOC, the OEM and sheriff have given BCARES a room adjacent to the EOC to house all of its radio, packet, computer and ATV gear. One switch turns it all on.

All the antennas are on adjacent communications towers and there is no waiting time to get ready to run when the team is called out, WMØG added. "A number of BCARES people are trained to run the multiple stations at the EOC. Within the EOC, BCARES has a seat at the ESF-2 position and our people are all trained on WebEOC and we have our own space to store BCARES related information and to address queries as they are happening. To say that we have a good relationship with our served agency is an understatement. BCARES is part of their emergency plan and their response team, *period*."

Real-Life Training in a 'Rather Benign' Situation

BCARES has a Memorandum of Understanding, as well, with the Colorado University Police Department and provides it with ATV to its Command Post during the university's PAC-12 home football games. "The CUPD uses it for monitoring the gates when the crowds are coming in and leaving to make sure they have the appropriate level of personnel and to be able to direct people inside to a lesser used gate if needed," Ciaccia said.

"Also, the ATV is used to monitor any police, fire or ambulance personnel deployed within the stadium to make sure they have sent adequate resources. This activity provides BCARES a great training resource in a rather benign, but real-life situation. The challenges of getting ATV pictures from remote or *blind* areas of the stadium and campus are similar to obstacles we encounter in other activities."

WMØG said the CUPD provides BCARES with ATV equipment as a donation for their use. "Many other college security teams from around the country have expressed an interest in duplicating this sort of volunteer activity, but usually can't find the resource in their area from their local ham radio community."

ATV Interest and Use Spreads

Other ARES® groups around Colorado have recently expressed an interest in developing ATV tool for their toolkits. "BCARES will provide all of the training to them if requested," Ciaccia said. "We foresee a time when we can seamlessly utilize ATV up and down the Front Range of Colorado in a wide-scale emergency if necessary."

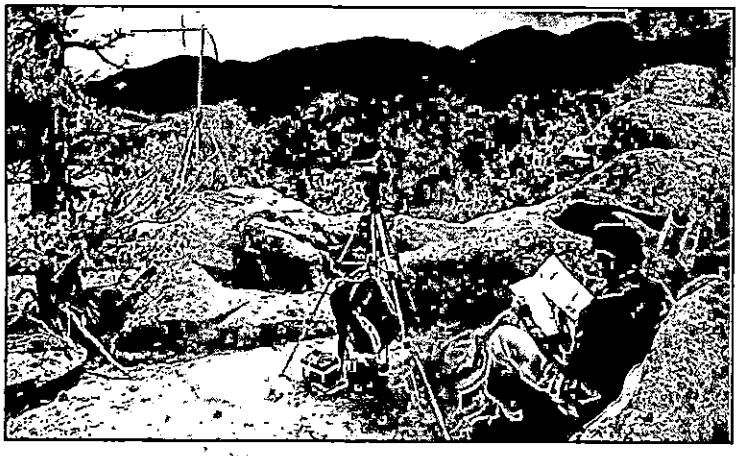


Photo I– Jim Andrews, KH6HTV, who is a driving force in acquiring and using ATV equipment deployed by Colorado ARES®, occupies a video transmission site in a remote location.

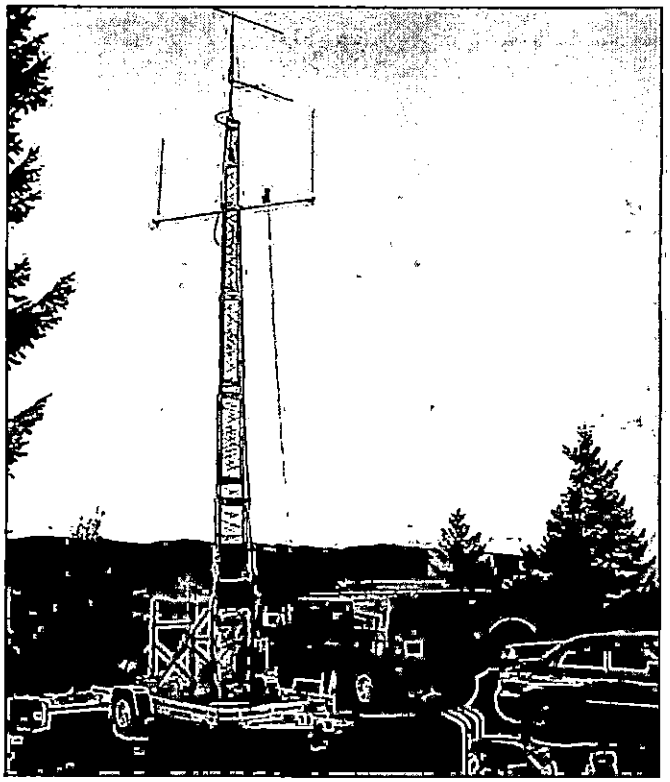


Photo J– Allen Bishop, KØARK, has his ATV tower was set up for transmission of video signals to fire managers in the Emergency Operations Center.

"would be traveling south to bring their ARES mutual aid assets to the scene. Again, our ARES amateurs performed admirably and long. They dutifully completed shifts that were sometimes boring, sometimes overwhelmingly-emotional," Ciaccia said.

Meantime, a new fire was reported on Pine Ridge Mountain west of Interstate Highway 70 east of Grand Junction. "ARES® and RACES (Radio Amateur Emergency Service) members from the west slope responded and (were) involved in various auxiliary communication duties throughout," WMØG said.

Section Manager's EmComm Duties

"My job during all of these fires was primarily to keep ARRL Rocky Mountain (Division) Director Brian Mileshosky, N5ZGT, and ARRL HQ Emergency Communications Chief, Mike Corey, K1IU, informed as to what we were doing," Ciaccia said, adding that the League "was extremely interested in how we were responding and promised any equipment or additional trained personnel if I felt it necessary."

WMØG said he believes when the After Action Reports have been completed, "we will certainly find out what we did right, where we can improve and what didn't work well. All of the items you would expect to see on any critique . . . Our ARES® people proved that they understand and can implement ICS (Incident Command System) and NIMS (National Incident Command System) procedures and can operate shoulder to shoulder with any local, state or federal agency in a major scale emergency.

"I couldn't be prouder than to be associated with this fine group of men and women involved in amateur radio public service and dedicated to emergency communications," Ciaccia said.

Our Change of Plan

In August's "Public Service" column we noted that a feature recognizing the 47th season of the Hurricane Watch Net would be forthcoming in this month's column. Unfortunately, on many levels EmComm events have overtaken that plan, as our reporting here shows. We expect to carry the Hurricane Watch Net piece in next month's edition—*Lord willing, and the creek don't rise.* HWN's is a very interesting and historic story you'll not want to miss. 73, Richard, KI6SN

On the Cover

Flames rise high above the treetops near the Mount Saint Francois area of Colorado Springs, Colorado. The Waldo Canyon fire was one of eight major wildfires that ravaged the Centennial State in June and July, destroying hundreds of homes and thousands of acres of woodland. Amateur radio operators from around the state responded to help provide communications as needed, including major use of amateur television (ATV). In the inset photo (from left to right), John Maxwell, WØVG, of Lakewood, Colorado; David Markham, WØCBI, of Aurora, and Jeff Ryan, KØRM, operate during the Waldo Canyon fire from the Rocky Mountain Ham Communications trailer, dubbed RMHam Comm. Ryan is the ARRL Rocky Mountain Division's representative to the League's Emergency Communications Advisory Committee and served as Colorado Section Manager from 2001–2011. For more details on the amateur radio response to the Colorado wildfires, see the accompanying Public Service column. (Credits: Main photo: US Air Force photo by Master Sgt. Jeremy Lock, courtesy US Dept. of Agriculture/US Forest Service; inset photo courtesy Colorado ARES®)

Homeland Security

Office of Emergency Communications

April 2012

Emergency Communications Case Study: Amateur Operators Aid Emergency Communications During Violent Storms in Tennessee

SEVERE WEATHER HITS TENNESSEE

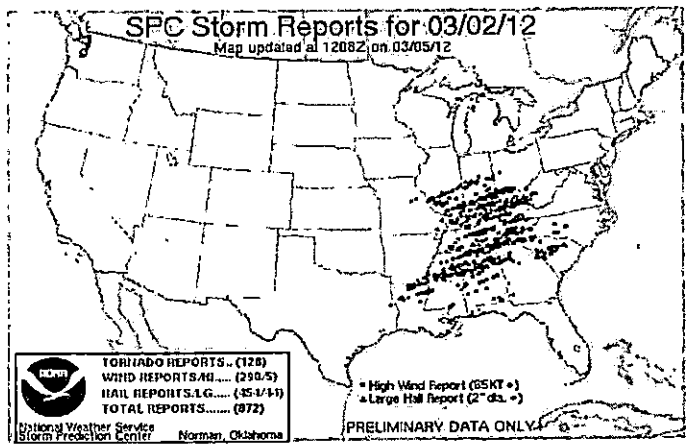
Between February 29 and March 2, 2012, two powerful storm systems spawned a series of thunderstorms and tornadoes that ripped up trees, destroyed homes and buildings and killed more than 50 people across a wide swath of the Midwest and South. The National Oceanic and Atmospheric Administration (NOAA) estimated that 45 tornadoes hit 11 States during that three-day period, causing more than $1 billion in damage.

Tennessee was affected by the second of these two devastating storm systems. NOAA estimates that 8 tornadoes touched down in the State, and 10 of Tennessee's counties were declared disaster areas. The unrelenting onslaught of severe weather overwhelmed the capabilities and resources of emergency response and communications throughout the region.

Emergency communications officials in Tennessee have a strong working relationship with amateur radio operators also known as Auxiliary Communicators, many of whom have received training on how to operate within emergency operations centers. As a result, when the storms developed and damaged communities, Auxiliary Communicators were ready and able to fill communications gaps and offer additional assistance.

AUXILIARY COMMUNICATORS PROVIDED EARLY WARNINGS

In Tennessee, the Middle Tennessee Emergency Amateur Radio System (MTEARS) is the statewide system through which local Auxiliary Communicators can report significant weather observations and damage reports. The system is monitored by Tennessee's National Weather Service and by many of the local emergency operations centers, including the State Emergency Operations Center (SEOC) in Nashville. MTEARS has been in existence for nearly 15 years, and is a cooperative venture between private individuals, local emergency management agencies, and the Tennessee Emergency Management Agency.



On the afternoon of March 2, an MTEARS report noted a large storm cell approaching Nashville. As a result, a tornado warning was issued by the National Weather Service. Inside the emergency operations center, a meteorologist monitoring the radar predicted the cell would come very close to the SEOC itself. Due to the advanced warning provided through MTEARS, staff at the center had time to relocate to the building's lower level.

As the storm passed through, cell phones became overloaded and useless, but reports and information sharing continued uninterrupted via the Auxiliary Communications circuits. In the end, a funnel cloud passed very near the SEOC, but did not touch down. Some trees were twisted and damaged, but the building and everyone inside were unharmed.

Later that night, Tennessee Deputy Governor Claude Ramsey called the State Emergency Operations Center (SEOC) requesting more information on tornadoes that were reported just a few minutes prior in Jackson and Putnam counties. The Direction and Control Officer, who was monitoring MTEARS, was able to provide a near-immediate report on conditions in those areas. Throughout the storms and across the State, MTEARS continued to report warnings and relay damage reports from amateur operators in the field.

ROLE OF AUXILIARY COMMUNICATIONS

For nearly 100 years, Auxiliary Communicators have been assisting public safety in communications during natural and man-made disasters. There are an estimated 3 million amateur radio operators worldwide with 750,000 of them in the United States. Each one in the U.S. must obtain a license through the Federal Communications Commission, and operates on designated frequencies for amateur radio service.

Because amateur operators are using systems that are separate from those used for emergency communications, they can often transmit messages when normal telephone, Internet, and radio systems are down. When all else fails, they keep information flowing between government officials and emergency operations centers until normal service returns. These volunteers often have a passion for providing emergency communications support, and they can serve as valuable, reliable, and cost-effective communications resources.

In December 2010, the DHS Office of Emergency Communications began offering an Auxiliary Communications (AUXCOMM) Workshop as part of its Technical Assistance program. The course, which is requested through Statewide Interoperability Coordinators, focuses on the ability of amateur operators to work with other organizations and agencies through the National Incident Management System/Incident Command System (NIMS/ICS) framework.

The two-day, 20-hour course is open to licensed amateur operators, who have completed specific prerequisites. The workshop walks the operators through a series of NIMS/ICS forms and protocols, and covers how to communicate and work within the structure of emergency operations centers. Along with the training in NIMS/ICS, the course can help build trust and familiarity by allowing Statewide Coordinators and other public safety professionals to get to know some of their local amateur operators and their capabilities. The operators, in turn, learn how to modify their services to work effectively with public safety. In Tennessee, 30 amateur operators attended the workshop conducted in the fall of 2011.

CONCLUSION

These are just a few examples on how Auxiliary Communicators can play an important role in sustaining communications and providing timely information in the event of a natural or man-made disaster. Through continued training and coordination with public safety at the State and local levels, Auxiliary Communicators will continue play an important role in disaster response and recovery for years to come.

FOR ADDITIONAL INFORMATION

Please contact OEC@dhs.gov or visit www.dhs.gov (keyword OEC).