

After Action Report Earthquake 2016 Exercise



Cupertino
ARES/RACES

1. Overview

Description: Communications Outage, Packet Edition
Event Date: 10 December 2016
Report Date: 22 January 2017
CARES Event: CUP-16-34T
RACES Event: CUP-16-34T
Control: Cupertino ARES/RACES
Report Revision: 1.0, **FINAL**
Submitted by: Jim Oberhofer KN6PE

Requirements for Reporting¹

Completing an After Action Report is part of the required SEMS reporting process. The Emergency Services Act, Section 8607 (f) mandates that the Office of Emergency Services (OES) in cooperation with involved state and local agencies complete an After Action Report within 120 days after each declared disaster. Section 2450 (a) of the SEMS Regulations states that, "Any city, city and county, or county declaring a local emergency for which the governor proclaims a state of emergency, and any state agency responding to that emergency shall complete and transmit an after action report to OES within ninety (90) days of the close of the incident period as specified in the California Code of Regulations, Title 19, s2900(q)."

CARES will follow this requirement for reporting the results and recommendations for this Training Event.

i. Introduction and Background

Terms

ARK Shipping containers with emergency supplies used by Cupertino Citizen Corps to support a local response where assistance is rendered to City residents. There are 6 ARKs within the City covering approximately equal zones.

CARES: Cupertino Amateur Radio Emergency Service, ARES/RACES organization supporting the City of Cupertino.

CCC: Cupertino Citizen Corps; the City's umbrella organization for CARES, CERT, and MRC.

CERT: Community Emergency Response Team; trained members who can assist others in their neighborhood or workplace following an event when professional responders are not immediately available to help.

DOC: Department Operations Center. Manages the overall field CCC deployment; aggregates data to be passed to the EOC. Advises EOC Staff on CCC capabilities, readiness, and activities.

MRC: Medical Reserve Corps; volunteers who are practicing or and retired physicians, nurses and other health professionals, as well as other citizens interested in health issues, who are eager to volunteer to address their community's ongoing public health needs and to help their

¹ <http://www.caloes.ca.gov/cal-oes-divisions/planning-preparedness/after-action-corrective-action-reporting>;
<http://temp.caloes.ca.gov/PlanningPreparednessSite/Documents/01%202450.pdf>

	community during large-scale emergency situations.
NCO/NCS:	Net Control Operator / Net Control Station. The control function that ensures the efficient passing of messages between stations on the frequency.
PSAP:	Public Safety Access Point; a call center responsible for answering calls to an emergency telephone number for police, firefighting, and ambulance services. Trained telephone operators are also usually responsible for dispatching these emergency services.
RRO:	Radio Room Operator. The position that originates and receives messages for exchange with field responders.
Served Agency:	An agency, special district, or other recognized organization with which CARES has a signed Memorandum of Understanding to assist in time of need.
Zone	One of 6 regions within the City of Cupertino supported by an ARK.

Introduction

The City of Cupertino supports testing the community emergency response plans and ongoing disaster preparedness readiness as an essential component to a successful community disaster response. One aspect of disaster preparedness is the on-going evaluation of risks that the City may encounter, and the capabilities, plans, and processes that are in place to mitigate or respond to the risks. This report describes the exercise results in response to one such risk.

Cupertino OES continues to invest in ARKs as well as refine the mission of the City volunteers who will respond to and operate out of the ARKs. Recent Citizens Corps exercises focused on specific processes critical to support the city. In doing so, it has been 4 years since we have opened and operated from all ARKs at the same time.

With a major earthquake as the scenario, the December 2016 exercise was designed to bring several recent process and tool initiatives to play as we would expect to do during an actual event. See the objectives below for the scope of the systems under test. The City of Cupertino authorized this exercise with training activation number CUP-16-34T. This report covers the activities undertaken by CARES and the findings from that drill.

ii. Type / Location of Event / Drill / Exercise

Event Type:	City of Cupertino, CARES Training Activation
Event Identifier:	CUP-16-34T
Event Name:	Earthquake 2016
Location:	City of Cupertino

iii. Description of the Event / Drill / Exercise

The objectives for this exercise were:

1. Exercise voice and packet message passing procedures.
2. Exercise ARK Startup procedures to Level 2.
3. Test ARKnet communications with the EOC.
4. Exercise the amateur radio equipment and procedures at the SCC Fire Stations located in the City.
5. Exercise CCC to DOC information roll-ups.

Event resources came from the following organizations:

1. Cupertino ARES/RACES: Responsible for staffing the EOC, Communications Van, and Field Responder locations at the ARKs and County Fire. Thirty-two (32) CARES members participated in the exercise.
2. CERT: Responsible for staffing the Field Responder locations. Twenty-nine (29) Cupertino CERT members participated in the exercise.

Volunteer Responders			
Name	Call Sign	Organization	Assignment
Aberg, Fari	KF6UVS	CARES	HYA ² Field Operator
Aglstrand, Alan	---	De Anza College	DZA Responder
Alhait, AJ	KK6UCT	CARES	HYA Field Operator
Boleda, Al	---	CERT	MVA Responder
Capener, Chris	AI6CC	CARES	Comm Van Shift Supervisor
Casconi, Bob	KJ6WBF	CCC	EOC Dept Operations Center
Dobyns, Wynne	---	CERT	MVA Responder
Donhoe, Mary	---	De Anza College	DZA Responder
Eandy, Cheri	---	De Anza College	DZA Responder
Ericksen, Ken	KI6SYY	CCC	DZA Citizen Corps EC
Escherbeck, Gerhard	N6ESC	CARES	MVA Field Operator
Escherbeck, Lisa	N6EEL	CARES	MVA Field Operator
Finnegan, Kenneth	W6KWF	CARES	MVA Field Operator
Frieson, Doug	KJ6LLY	CARES	LSA Field Operator
Gontang, Allan	KD6QPP	CARES	Field Supervisor 2
Gyger, Walt	K6WGY	CARES	DZA Field Operator
Halchin, Judy	KK6EWQ	CARES	Comm Van Facilitator
Iataee, Iris	---	CERT	RSA Responder
Jin, Anna	KG6YIQ	CARES	GGA Field Operator
Kagawa, Masa	NW6UP	CARES	DZA Field Operator
Kang, Tae	KE6CZS	CARES	GGA Field Operator
Laubach, Mark	K6FJC	CARES	GGA Field Operator
Leung, Ho-Ming	KK6YQT	CARES	F72 Field Operator
Levine, Sue	KK6WHI	CARES	Comm Van NCS/RRO
Levine, Rick	KK6WHJ	CARES	Comm Van NCS/RRO
McCarthy, Maryln	---	CERT	MVA Responder
Meng, Jenny	---	De Anza College	DZA Responder
Muni, Pattappaiah	KI6HYS	CARES	MVA Field Operator
Oberhofer, Jim	KN6PE	CARES	Field Supervisor 1
Olarig, Arianne	KK6QFQ	CARES	MVA Field Operator
Pecko, Patricia	---	CERT	RSA Responder
Presley, Darryl	KI6LDM	CARES	RSA Field Operator
Rajaram, Sidharth	KJ6ZKV	CARES	RSA Field Operator
Reed, Pam	---	The Forum	MVA Responder
Reedman, Diane	---	CERT	HYA Responder
Ross, Betsy	---	CERT	GGA Responder
Schober, Alicia	---	CERT	MVA Responder
Shekhar, Acpana	---	De Anza College	DZA Responder
Sherman, Dick	N6IK	CARES	LSA Field Operator
Stevens, Skip	WA6VFD	CARES	F72 Field Operator
Stieber, Marcel	AI6MS	CARES	MVA Field Operator
Stieber, Tony	KJ6OHT	CARES	HYA Field Operator
Tallinger, Bev	---	CERT	LSA Responder
Tallinger, Jerry	---	CERT	LSA Responder
Tanner, Mary	KI6GCX	CARES	F71 Field Operator
Tanner, Brian	AG6GX	CARES	F71 Field Operator
Trollman, John	K6HVJ	CARES	MVA Field Operator
Trollman, Helen	---	CERT	MVA Responder
Wehner, Sigrid	---	CERT	MVA Responder
Wen, Todd	KK6UCR	CARES	MVA Field Operator
Wilkenson, Leroy	KG6OGA	CARES	RSA Field Operator

3. City Staff: Additionally, City Staff members were present and responsible for the following:

² DZA: DeAnza College ARK. GGA: Garden Gate School ARK. HYA: Hyde Middle School ARK. LSA: Lawson School ARK. MVA: Monta Vista ARK. RSA: Regnart School ARK. F71: SCCFD Station 71. F72: SCCFD Station 72.

- a. OES Logistics. One staff member performed logistical support for deployed field teams.

The drill was initiated as a pre-announced event with Citizens Corps members knowing how and where to respond at the appointed time.

Performance against Objectives:

1. Exercise voice and packet message passing procedures.

Results: **MIXED**. While formal message passing worked as practiced, some tactical and administrative (unwritten) voice messages took longer than necessary. Packet operations resulted in only 3 messages passed to County Comm over a 90 minute period. While this message load to County Comm may be more realistic, more analysis is needed of received messages to fully understand the status of the other anticipated messages

2. Exercise ARK Startup procedures to Level 2.

Results: **SATISFACTORY**. The ARK Activation Level 2 procedures worked as planned with all ARKS opened and made operational. While some process adjustments are needed, the outcome for this objective was very positive.

3. Test ARKnet communications with the EOC.

Results: **SATISFACTORY**. This was the first test during a drill for ARKnet. Telephone communications was established between the DOC and De Anza ARK. The test of the infrastructure build-out to date was successful.

4. Exercise the amateur radio equipment and procedures at the SCC Fire Stations located in the City.

Results: **SATISFACTORY**. CARES activated the 2 SCC Fire Stations that were part of this exercise. Voice and Packet communications worked with all County Fire equipment working without issue.

5. Exercise CCC to DOC information roll-ups.

Results: **UNSATISFACTORY**. The Van-to-DOC network was brought up and made operational. Telephony service was established between all available VoIP phone locations. The BETA versions of the Ics213mm v3.2 and Outpost v3.2 programs were not deployed due to insufficient training and no process definition. CARES needs to answer the feasibility question on the usefulness of these tools first before further investing in this capability.

iv. Chronological Summary of Event / Drill / Exercise

The following is a very high level summary of the main activities that were submitted after the test. All times listed here are in local time.

Time	Loc	Description, Notes, Comments
0700	Comm Van	Comm Van at City Hall
0740	Comm Van	Comm Van staff briefing
0800	Comm Van	Resource Net is active, message net is ready
0838	GGA	CARES member assigned to Garden Gate ARK
0845	LSA	CARES member assigned to Lawson ARK
0854	RSA	CARES member assigned to Regnart ARK
0900	F72	CARES member assigned to Seven Springs Fire Station
0902	F71	Cupertino Fire Station Comm Ops operational
0905	Comm Van	Assigned Field Supervisor 1
0930	LSA	Passed 1st message from Lawson ARK to the EOC
0936	RSA	Regnart ARK operational
0945	GGA	Passed 1st message from Garden Gate ARK to the EOC
0945	F72	Fire Station Comm Ops operational
0947	DZA	Passed 1st message from De Anza ARK to the EOC
0950	MVA	Monta Vista ARK Codes retrieved, starting setup
1020	MVA	Passed 1st message from Lawson ARK to the EOC

Time	Loc	Description, Notes, Comments
1048	Comm Van	Drill operations ended
1050	DZA	Shutting down ARK operations
1055	MVA	Shutting down ARK operations
1100	RSA	Shutting down ARK operations
1100	F72	Shutting down Fire Station operations
1105	GGA	Shutting down ARK operations
1109	F71	Shutting down Fire Station operations
1131	Comm Van	Resource net and Message net are shut down
1135	EOC	Debrief in the EOC

v. Response at SEMS Levels (as appropriate):

Include a summary, conclusions, the field response, and other local, operational area, regional, state or federal response.

Interaction with Santa Clara County Comm

A County RACES member responded to Santa Clara County Communications Center (County Comm) to staff the resident amateur radio system. While drill messages were passed to County Comm, no actual hand-off of 911 messages was made to County Comm dispatch for their action (simulated or otherwise).

This exercise also uncovered the need for a clear county-level process for interacting with County Comm staff. See the Corrective Action Plans for information on next steps.

vi. Interacting Systems, Agencies, and Programs:

Include mutual aid systems (law enforcement, fire/rescue, medical, etc.); cooperating entities (utilities, American Red Cross, Sheriff's Office, City Departments, etc.); telecommunications and media interactions.

Field Operations Teams

Eight field operations teams were deployed with each team consisting of at least one CARES member and one or more CERT members. As anticipated when officially activated for an emergency, this partnership will allow Cupertino Citizen Corps to deploy more field teams with communications capability than if we had to double-up with communicators. However, to ensure CARES members had a successful ARK experience, at least 2 CARES members were deployed to each ARK. The roles of the members were as follows:

1. CARES: radio facing; maintained radio contact with the EOC; was control operator for all packet operations; made all required communications log entries as necessary.
2. CERT: community facing. Was the first point of contact with an approaching community member to take their report; engaged the public as necessary. SIMULATED community request scenarios were scripted and the CERT team member evaluated the immediacy of the request and determined the essential elements of the request to be conveyed by formal radio messages to SIMULATED served public safety agencies.

Additionally, both CARES and CERT responders had an opportunity to create packet messages to be sent to the EOC or County Comm.

911 Message Process

One of the ancillary tests of this exercise was to pass all 911 messages to County Comm by AX.25 packet radio. This 911 message process must be fully developed, reviewed, tested and evaluated before final adoption. Not too much of a surprise, the performance against a preliminary list of critical success factors points to plenty of room for improvement. For this drill, the following was concluded:

1. Field Teams can differentiate a 911 request from a general request.
Results: INCONCLUSIVE for this drill; it appears that not every station created and sent a 911 packet message.
2. Field Teams can summarize community requests into succinct messages to be passed to County Comm.
Results: INCONCLUSIVE for this drill; it appears that not every station created and sent a 911 packet message.

3. The 911 packet system received and recorded all incoming 911 requests.
Results: Very Good. The County Comm packet station was activated and polled for incoming messages every 3 minutes. The actual poll time must be agreed to by County RACES to balance timely delivery of critical 911 messages to County Comm with channel utilization.
4. 911 message hand-off of all incoming 911 requests to County Comm for dispatch.
Results: Out of scope for this drill. This aspect of the process will be tested once the process is defined and validated.

Communications Systems

1. All radio nets were run on Simplex. Coverage and use was reported as satisfactory except for Monta Vista ARK (furthest from the EOC); reception was problematic and required a higher gain antenna form them to hit the EOC.
2. The VAN-to-DOC network was activated and worked as planned. The network application used was limited to VoIP telephone service.

CCC Department Operation Center

The CCC DOC was staffed. The following specifics are noted here:

- The DOC originated and passed messages to the Comm Van for transmission to the Field.
- Interactions with the EOC: received messages were passed by paper hardcopy net and telephone to the DOC.

vii. Improvements, Conclusions, Recommendations:

As applicable, include a description of actions taken, assignments, associated costs or budget, timetable for completion or correction, and follow-up responsibility.

The following is a summary of the key observations and recommendations.

What worked

- Net controls stations did a good job.
- Retrieving the ARK access codes worked.
- All ARKS were opened.
- ARK generators worked, many within 3 pulls to start.
- Phone demo of ARKnet from De Anza ARK to the DOC.

What didn't work / needs improvement

- Monta Vista ARK antenna and coverage.
- Equipment problems... Radio (cabling), PCs, radio frequencies not programmed.
- Message handling; also differentiate between informal and 3rd party messages.
- Personal HT Tone and Squelch not correctly set.
- DZA ARK is aluminum. Need to note that Mag Mounts only work from the ARK corners (steel).
- Long pause between checking in and getting the assignment.
- Not all messages were passed in 5-7 word blocks.
- Voice vs packet decision making needs refinement.

Assessment against Critical Tasks

The Preparedness Measures listed below are essentially a rephrasing of each Critical Task's Process Task Element. Each Process Tasks Element was evaluated per for the 5 Results/Metrics by asking the question: "do we have a working < Process Tasks Element>?"

Results/Metrics

- Yes: task element exists, and essentially worked
- Partial: task element exists, but the results were mixed; may need some work time or resources permitting
- No: task element exists, but did not work; definitely needs work
- N/A: task element exists, but was Not Applicable for this drill
- Incomplete: task element does not exist, and is still under development.

Results may not necessarily be derived from activities from this drill, but continues to give CARES an opportunity to further refine select Critical Task elements.

	Critical Task	Preparedness Measure (ref: Process Task Element Description). Do we have a working ...	Results/Metrics
1	9-1-1 Operations	9-1-1 end to end Message Process	PARTIAL
1	9-1-1 Operations	County Communications Center site access	No
1	9-1-1 Operations	County Communications Center equipment check	No
1	9-1-1 Operations	9-1-1 County RACES operational relationship	No
1	9-1-1 Operations	9-1-1 Field Operations procedure and resources	Partial
2	ARK Operations	ARK Strategy and Operations	Incomplete
2	ARK Operations	ARK Activation Levels procedures	Incomplete
2	ARK Operations	ARK inventory and replenishment process	YES
3	County EOC Comm	TBD	TBD
4	Event Management	Shift Supervisor (COML) Procedures	NO
4	Event Management	Resource management and characterization	NO
4	Event Management	Resource provisioning process	NO
4	Event Management	Resource tracking process (T-Cards)	NO
5	Field Communications	Field responder operations procedures	Partial
5	Field Communications	City Packet operations procedures	Partial
5	Field Communications	Message type definition and handling procedures	Partial
6	NCO, Messaging	Message NCO Process	NO
7	NCO, Resources	Resource NCO Process	NO
8	Safety Assessments	PSA Process	N/A
8	Safety Assessments	ISA Process	N/A
8	Safety Assessments	Agreements with San Jose Water, Cup Sanitary District	YES
8	Safety Assessments	Information Security procedures	Partial
9	SCCFD Station Ops	SCCFD ACES program	NO
9	SCCFD Station Ops	Fire Station qualification	NO
9	SCCFD Station Ops	Fire Station Access procedure	NO
9	SCCFD Station Ops	Agreements with SCC Fire Department	NO
9	SCCFD Station Ops	SCCFD Station equipment check plan	NO
10	VA/EOC Operations	Van Qualification plan	YES
10	VA/EOC Operations	Van Operations & Deployment Plan	Partial
10	VA/EOC Operations	VAN equipment check plan	NO
10	VA/EOC Operations	VanNet Setup & Operations Procedures	Partial
11	Watches	Creek Watch Plan and Procedures	NO
11	Watches	Ember Watch Plan and Procedures	NO
11	Watches	Message content definition	NO

viii. Logs, attachments:

As applicable, include a description of actions taken, assignments, associated costs or budget, timetable for completion or correction, and follow-up responsibility.

The following reports are attached:

1. Corrective Action Plan

End of Report.

A. Improvement Plan

This IP has been developed specifically for CARES as a result of 2016 Earthquake Exercise (CUP-16-34T) conducted on 10 December 2016. These recommendations draw on the results of the After Action Debrief. The IP has been formatted to align with the Corrective Action Program System.

Critical Task	Element	Description	Corrective Action	Responsible Organization	POC	Start Date	End Date
9-1-1 Operations	Planning	9-1-1 end to end Message Process	Finalize County Comm message handoff process				
9-1-1 Operations	Planning	9-1-1 end to end Message Process	Finalize 9-1-1 message format				
ARK operations	Planning	ARK Activation Levels procedures	Finalize ARK Activation Level Guide w/ CCC; publish and distribute	CCC Steering Committee	CARES		
Event Mgmt	Planning	Resource mgmt and characterization	Define procedures, tools for resource provisioning; Table top exercise to evaluate.				
Field Ops	Planning	Field responder operations procedures	Revisit Message Handling procedures.				
Field Ops	Planning, Exercise	Message type definition and handling procedures	Formalize on message types, approach for passing; Table top exercise to evaluate.				
Field Ops	Planning	City Packet operations procedures	Refine packet check-in procedures.				
Field Ops	Eq & Systems	City Packet operations procedures	Check, correct all packet kit radio frequency memory programming.				
Field Ops	Eq & Systems	City Packet operations procedures	Check in on the weekly County Packet net.				
NCO, Message	Planning	Message NCO Process	Revisit, update Message NCO, contact procedures.				
NCO, Message	Exercise	Message NCO Process	Evaluate, adopt ICS 309 for NCO logging; Table top exercise to evaluate.				
NCO, Resource	Planning	Resource NCO Process	Review and adopt/adapt County RACES Resource Tracking procedures.				
NCO, Resource	Planning, Exercise	Resource NCO Process	Investigate SCC RACES Travel Tracking Form; Table top exercise to evaluate.				
NCO, Resource	Planning	Resource NCO Process	Add Travel Net procedures to Cupertino 5K Run events.				

Critical Task	Element	Description	Corrective Action	Responsible Organization	POC	Start Date	End Date
SCCFD Station Ops	Eqt & Systems	SCCFD Station equipment plan	Finish Monta Vista Station Setup.				
SCCFD Station Ops	Personnel	SCCFD ACES program	Finalize ACES program definition and qualification.				
SCCFD Station Ops	Eqt & Systems	SCCFD Station equipment plan	Check all packet radio and voice radio frequency memory programming.				
VAN/EOC Ops	Eqt & Systems	VanNet Setup & Operations Procedures	Correct VANnet PC/network setup problem.				
VAN/EOC Ops	Eqt & Systems	VAN equipment plan	Check all packet radio and voice radio frequency memory programming.				