

After Action Report

Overview Description:	Santa Clara County ARES RACES RDF Search and Locate Exercise / Mini-Drill
Event Date:	09 July 2016
Report Date:	09 July 2016
SCC Activation:	XSC-16-04T
Control:	Santa Clara County ARES/RACES
Report Revision:	v02 final
Submitted By:	Mark Laubach, K6FJC SCC ADEC, Event IC

Introduction

Santa Clara County ARES/RACES organized a Radio Direction Finding Search and Locate Mini-Drill on 9 July 2016. The main purpose of the exercise was to provide a practical and “fun” field exercise for Radio Direction Finding (RDF). The purpose of the event was to create a Search and Locate scenario that simulated transmitter with stuck Push-To-Talk (PTT).

The event was conducted according the SCC MAC standards in a “mini-drill” format and may be credited as a County Drill attendance subject to participant adherence to the standards.

This report covers the activities undertaken by responding participants during this event and the subsequent findings.

ii. Type / Location of Event / Drill / Exercise

Event Type: Practical Exercise / Mini-Drill
Event Identifier: XSC-16-04T
Event Name: RDF Search and Locate Mini-Drill, 9 July 2016
Location: Cuesta Park, Mountain View, CA

iii. Description of Event / Drill / Exercise

The following objectives were developed for this exercise:

1. Provide scenario, facilities, and infrastructure to conduct a Mutual Assistance Communicator (MAC) “mini drill” as a practical training event for Radio Direction Finding Basics. Demonstrate “eyes and ears” coordination in support of local Search and Locate efforts
2. Provide interesting RDF locate exercises that are of practical use to Field Responders. Provide current search and locate field status to Incident Command.
3. Conduct the event according to County MAC standards so that any MAC/MIT completing all resource net mobilization/demobilization, paperwork, equipment preparation, performance, etc. can get County Drill credit for appropriate check off items.
4. Provide a drill that included MAC evaluation opportunities for N3, F3, and one S3.

All objectives were in play, with the results described below.

Event resources came from the following organizations:

1. SCC ARES/RACES: Responsible for setting up and providing command staff for the ICP at the event. Four (4) command staff participated in the following roles: Incident

Commander, Net Control Manager, Fox Manager, and Field Evaluator, The IC maintained PIO responsibility during the event. Safety Officer was assigned to the Net Control Manager.

2. Three (3) participants from the SCC MAC program provided Net Control operator services for the Resource Net and Field Event Net. Note that Resource Net was dispatching for both this event and the Los Altos Art & Wine Festival event.
3. Eleven (12) participants attended as Field Responders, all were pre-registered for the event on the SCC website.
4. ICP communication equipment as well as tents, tables, chairs, generators, etc. came from K6FJC and KE6TIM. A Resource Net station and a Field Net station were established.
5. Hidden transmitters (aka "Foxes") and supporting coordination came from N6MEF, KE6TIM, and K6FJC
6. Radio Direction Finding demonstration and "borrow" gear came from: K6FJC, KK6VF, KE6TIM, and N6MEF.
7. Forms, participant packets, ICS documentation, T-cards, staging, signs, and other logistic support came from K6FJC and KE6TIM.

The ICP was established off a public parking lot at Cuesta Park. The field portion of the drill was conducted in the majority of the park (excluding certain areas) and included "The Annex".

Event IPC Staff Summary:

The following summarizes the staffed positions for the event. The NCOs are listed for special mention as they worked the entire drill (they were the only NCO signups).

Position	Name	Call
Incident Commander / PIO (and Shadow Evaluator)	Mark Laubach	K6FJC
Fox Manager	Kevin Smith	KK6VF
Net Control Manager / Safety Officer	Tim Howard	K6TIM
Field Evaluator	Michael Fox	N6MEF
Staging	Betty Reutter ¹	KJ6CBR
Net Control Operator	Judy Halchin ¹	KK6EWQ
Net Control Operator	Michael Kenniston	K6GA
Net Control Operator	Nigel Gore	AF6ZF

Resource Net control started at approximately 0730, and transferred control to The Los Altos Art & Wine staff at approximately 1230 hours (Noon).

Performance Against Objective

1. Provide scenario, facilities, and infrastructure to conduct a Mutual Assistance Communicator(MAC) "mini drill" as a practical training event for Radio Direction Finding Basics. Demonstrate "eyes and ears" coordination in support of local Search and Locate efforts

Three (3) Fox Transmitters were distributed and hidden in the park prior to the planned start of the IC briefing at 0900. One (1) Fox Transmitter was reserved as "extra credit" and was turned

¹ Helped in this position before / after their participation on a Field Team. Special mention for helping out with staff support!

on at approximately 10:40 and hidden in the backback of the Fox Manager as they walked around the park. Each Fox transmitter was a Byonics “Micro Fox”. Each transmitter was programmed with a legal FCC ID, and different operational frequency on 2m, and different transmission behaviors from 100% carrier with ID and tone modulation through to an ID followed by un-modulated carrier with a 25% duty cycle (15 seconds out of 60). An additional Byonics unit was used during the IC briefing and demonstration. All items had attached 4” x 5.5” signage located in plain view (but printed on camouflaged background) that described the object as being used for a Ham Radio Drill, the “name” of the item, and the “code phrase” used to identify the item to Net Control, and the name and phone number of the IC.

Teams were dispatched to the field at approximately 0950 and last team returned to the ICP at approximately 1210.

2. Provide interesting RDF locate exercises that are of practical use to Field Responders. Provide current search and locate field status to Incident Command.

Based on the attendance four (4) field teams were organized during the IC briefing. A fifth field team was organized after the Shadow “evaluate” was released by their Principle. Each team had RDF capability with at least one operator, as well as at least one operator for maintaining contact with Net Control. The summary of teams finding Fox transmitters items is:

RDF Located Items				
Team	Fox 1	Fox 2	Fox 3	Fox 4
1	Yes			
2	Yes	Yes	Yes	
3	Yes	Yes	Yes	Yes
4	? ²	Yes	Yes	
5	Yes			

The introduction briefing provided a demonstration of three different techniques direction finding: shield tube and body shielding technique, a Doppler butterfly “handi finder” reception antenna, and a VK6YNG “blue box” D.F. receiver with Yagi antenna. Several participants brought shield tubes of their own, we had three (3) handi finder antennas, and five (5) blue box systems, three with an Arrow yagi and two with self-made “measuring tape” yagis. (one participant brought their own blue box + measuring tape yagi).

3. Conduct the event according to County MAC standards so that any MAC/MIT completing all resource net mob/demob, paperwork, equipment preparation, performance, etc. can get County Drill credit for appropriate check off items

The event was conducted according to SCC MAC standards. Participants seeking drill credit were directed to participate in the mobilization and demobilization resource nets, fill out and turn in all required forms, follow procedures, equipment, and personal dress.

4. Handling of questions from the public, referral to PIO, etc.

Mark Laubach, IC, also acted as the PIO for the event. Operating in a public park we anticipated higher than normal questions from the public regarding our activity. We had a few visitors to the ICP and the Public Information Table. One of our Field Team members was

² Net Control Log: Fount it Summary indicated a question mark.

observed giving a practical demonstration of a shielding tube to a family with some interested children.

5. At ICP, provide field team location status on a map of the park and maintain a list of found items.

All field teams were instructed to report their grid position in every communication with Net Control. A larger grid map of the park was placed with Net Control and a set of numbered pins. The goal was to move the pin on the map to indicate the last “heard from” location of the team.

iv. Chronological Summary of Event / Drill / Exercise

All events took place on Saturday, 9 July 2016. All times listed here are in local time. This summary is a compilation of submitted ICS-214s, net control logs, and other logs. Note that all planning paperwork as well as all scanned forms have been uploaded to the SCC Races Drill Planning Yahoo website for archival.

0615 KE6TIM – Linked repeaters W6ASH, AA6BT, and N6NAC
0645 K6FJC, KE6TIM began ICP, PIO, and Net Control setup
0730 Resource Net Control (mobilization) up and running from ICP
Note: staff in transit before the net was up self-announced
0814 First participant arrives at Staging
0859 Last participant arrives at Staging
0905 IC briefing and demonstration commences
1000 Field tactical net up
1000 First team departs ICP
1148 Resource Net Control (demobilization) up and running from ICP
1215 Last team arrives back at ICP
1200 Resource Net Control transferred to Los Altos Art & Wine festival (earlier than the planned 1300 time)
1230 ICP breakdown started
1330 Last Time Out on ICS 211.

The Resource Net repeaters were left linked for the Los Altos Art & Wine demobilization net usage later in the day. Note: they were unlinked at 1730 .

v. 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 Improvements, Conclusions, and Recommendations.

What worked?

- ICP setup went smoothly. All was established well before first participant arrived. No last minute ICP issues.
- Adequate staff to cover staffing and net control operator needs. But only because we pulled two people (Judy Halchin KK6EWQ and Betty Reuter KJ6CBR) to help out with NC and Staging respectively prior to their participation as field responders.
- Participant packets were prepared in advance, with exception of T-cards, which were handed out with the packet.
- Evaluations were favorable and indicated that the “mini drill” formatted worked well, and

that more RDF exercises are desired.

- DSW “for the day” participation form worked well.
- Evaluations were performed: two F3 evaluations and one S3 evaluations. We have a single new F3 and a single new S3 from this event.
- Pre-prepared IC briefing checklist permitted a thorough briefing (although a little long). Last minute additions were added. Note again to leave blanks lines on future forms per section, to permit late minute additions.
- Sixteen (16) ICS 214’s were turned in for 19 participants. Three were from our non-MAC/MIT participants and not expected, therefore 100% 214 turn-in.
- Mountain View Community department required a form be filed so that they had a record of the event and notice would be sent to internal departments including Policy and Fire. A several page addendum was included describing the event as well as a complete description and photos of the Fox transmitter details. The package was submitted to MTV Parks and Rec about 4 weeks before the event. No feedback was received from MTV. Following feedback from last year, we did not set up canopies in the parking lot. Otherwise, we had no visits from police or fire.

What didn’t work / needs improvement / suggestions for next RDF drill

- Not all forms were completed with “Prepared by…” information, date and time, etc.: specifically the two Resource Net Tracking Tool forms and one participant’s ICS 214,
- Not everyone brought an identification vest as directed. Like last year, our SJC participants prefer their t-shirts. Our non-MAC, non-MIT participants do not have go-kits, hence cannot be expected to have a vest. For the next drill that will include non-MIT/MAC participants, we should have ½ dozen vests borrowed from the trailer to cover needs.
- The T-card instructions need to be made more clear on wanting the MAC ratings held by the individual and not their drill or MAC title.
- Adapted from 214 comment: Putting out a summary PDF to all participants several days in advance will help overcome some “instruction and information” problems. The amount of information we provide at staging may be overwhelming to many, as well as our jargon for those who are not MIT or MAC rated. This would not be an ICS form, but something specific to the event for aid in radio programming, etc. We can also include any youtube vidieo URLs that show how to use the blue box, shield tubes, direction finding in general, etc. Some of the instructional material could also be placed into the event information on website as well as sent as reminder / preparation email.
- From 214 comment: Received a recommendation to use earthquake wax to hold down the public information display holders (from blowing over in the wind).
- One of the field teams was consistently having trouble maintaining contact with Net Control. For one H&W check, the IC had to walk within shouting distance of the team to get them on the radio. The net control assignee on the particular team is a recognized city EC team member. Not sure what to do in the future, but to continue to remind teams of their responsibility to maintain contact with Net Control.
- ICS 309 for Drill Tactical should be more clear on which fox was found by which team (for event reconstruction from the logs), as well as the “to” for each communication.
- ICS 309 only shows one H&W check for all teams starting at approximately 1109. Perhaps want to increase amount. Notice that Team 1 had a H&W check at 1109, and then no message activity until 11:45.
- Net Control did not announce that the tactical net was begin shut down, even though we still had staff on the net. Suggest tightening this up to make sure no one is left dangling on any frequency.
- Need to put into next RDF event a reminder that the fox found message is 1) always

informal, and 2) should include communication that is required for the drill. For this RDF drill, the code phrase was required in the communication to Net Control. Put note in IC briefing to remind people that a code phrase may be used in assisting Search and Rescue; e.g., avoid directly announcing to the listening public/press that they found a dead body. Also, consider thinking up other code phrases for the next time these are used that don't sound like canned phrases.

- One field participant arrived at 0859 ignoring the clear directions that all participants need to plan travel so as to be cleared through staging with radios programmed prior to 0900. IC briefing was delayed until 0905. Again, not sure how to effectively reinforce this as for a real event, the IC will not delay. Reminders in email seem to be ignored by certain individuals.
- The IC briefing may be a slight bit lengthy will try to improve slightly next time, but don't cut out anything important.
- We need to set back the event canopies about 3 to 4 feet from the paved walk-way (sidewalk). We didn't have a problem this event, but a line at staging or at the PIO table could have potentially interfered with the multiple other visitors to the park using that same sidewalk.
- We should implement some sort of feedback mechanism for all participants of all drills. For example, when the individual or team completes their assignment, they perform a debriefing where they turn in their paperwork. That debriefing should be delivered to someone on the staff who can also provide them direct feedback on their performance.
- One team reported hearing two different style Morse code IDs on one of the fox frequencies. While this might be the case in real-world situations, (having signal mixing and intermodulation impairments) it might be interesting to do an inter-mod study prior to next RDF drill and select a frequency to make this intentional with one of the fox frequencies; e.g., we might use a additional fox that beats against Tac 1.
- Suggest leaving the Demo Fox running as a known location Fox and on a tripod mast with signage for the participants / public. This might provide better practice for some teams that are getting acquainted with their RDF equipment.
- Might want to consider holding this RDF mini-drill every 6-8 months rather than every 12 months.

vi. Planning and Event Documentation Archival:

The SCC ARES RACES Drill Planning Yahoo website is used for archival:

<https://groups.yahoo.com/neo/groups/scc-drill-planning/files>

In addition to all planning documentation, scans of all ICS 211, 309, NCO logs, participant ICS 214 forms, T-cards, evaluation forms, and signed safety briefings have been uploaded to the website.