



USE AND DISTRIBUTION NOTICE

- Santa Clara County RACES authorization is granted to use and duplicate this material as-is, as long as this page and the copyright notices on each page are included, acknowledging Santa Clara County ARES/RACES as the holder of the copyright.
- Permission is granted to adapt this presentation to your needs as long as you acknowledge our copyright and include a note similar to "adapted with permission from Santa Clara County ARES/RACES."
- For additional information on training or any of our programs, send an email to: info@scc-ares-races.org


© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved.

1

2015 Year End Summary

Updates and Review



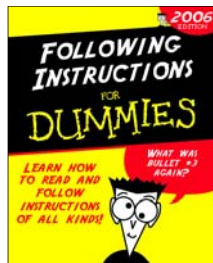
Santa Clara County ARES®/RACES
Revised: 10-Dec-2015

ARES and Amateur Radio Emergency Service are registered servicemarks of the American Radio Relay League, Incorporated and are used by permission.
© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved.

2

Housekeeping

- Refreshments
- Pen/pencil & paper
- Cell phones & pagers
- Side conversations
- Questions
- Breaks
- Restrooms
- In case of emergency





© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved.

3

Agenda


- An update on changes that have occurred during the past year, plus a review of some key procedures.
- Topics covered:
 - Packet
 - Data Network Infrastructure
 - Net Control
 - Audio Excerpts
 - Forms Review
 - Mesh / Wi-Fi Review
 - Training Updates

© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved. 4

Packet Review

2015 Year End Summary



Santa Clara County ARES®/RACES

Revised: 05-Dec-2015

© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved. 5

FCC/User/Personal vs Tactical Calls

- FCC/User/Legal Call Sign
 - Identifies a single person as an operator
 - Follows the person
 - Independent of assignment, function, etc.
 - Used for check-in, check-out, personal requests
- In contrast, a Tactical Call identifies a location or function...

© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved. 6

FCC/User/Personal vs Tactical Calls

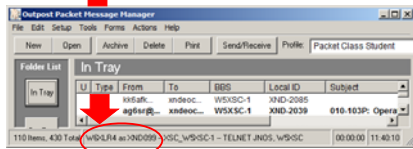
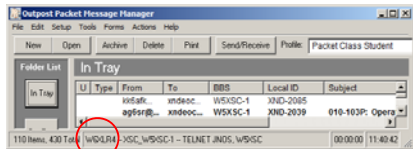
- Tactical Call Sign
 - Identifies a function or location
 - Shelter, fire station, EOC, Staging
 - Does not change when the operator changes
 - Used for activities of the location/function
 - Six characters long
 - Three letter prefix unique to the Served Agency
 - Three character suffix unique to the location
- Examples for Xanadu Drill City
 - XNDEOC XND001 XNDEV2

© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved.

7

Outpost Shows Which Call Sign is Used

- FCC Call: Only the call sign is shown
- Tactical Call: "... as XXXXXX"



© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved.

8

Manual Login with Tactical Call

- Call sign of TNC determines call sign that BBS sees for login/connect
 - TNC:
 - CMD: MYCALL W6XRL4
 - CMD: CONNECT W5XSC-1
 - W5XSC BBS: connects user and places in W6XRL4 mailbox
- To login manually (no Outpost) with a tactical call such as XNDEOC:
 - TNC:
 - CMD: MYCALL XNDEOC
 - CMD: CONNECT W5XSC-1
 - W5XSC BBS: connects user and places in XNDEOC mailbox

© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved.

9

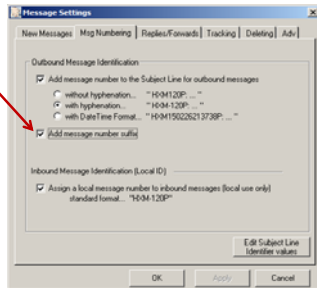
Manual Login with Tactical Call - ID

- Need to ID every 10 minutes and at end of session. On TNC:
 - Disconnect from BBS
 - In command mode, type
 - *CMD: CONverse* ← Enters converse mode; whatever is typed is sent out
 - FCC ID = W6XRL4; Tactical Call = XNDEOC
 - <CTRL-C> ← Returns to command mode

At end of session, switch MYCALL back to normal:
CMD: MYCALL W6XRL4

Message Number "P" Suffix

- The P suffix is added to the message number by Outpost
- It does not mean that it was a packet message, it just means that Outpost assigned the number
- The P was added to reduce the possibility of duplicate message numbers from other message forms
- Box should be checked



Message Numbers

- Don't change the message number you are given!
- If you are given:

MESSAGE FORM <small>Use Ballpoint Pen-Press Hard; Print Clearly (See back for instructions)</small>	When Receiving Msg: Sender's msg. #	Msg. #	When Sending Msg: Receiver's msg. #
Date: 01/01/2015 Situation Severity: (v) Msg. Handline Order: (v) Message Remotely You To: (v)		XND-123	

- Then type

EOC MESSAGE FORM <small>PacFORRES adaptation of SCCo KCS Form 213 (Rev. PR 4 1-2-8) - PacRELEASE 4.1 By PR4 Modification: W6XRL4 (This form works with Outpost/CyDirect for Automatic ASCII text space) For Instructions using this form - Click Here</small>	2) When Receiving Msg: Sender's msg. #	Msg. #	3) When Sending Msg: Receiver's msg. #
		XND-123	
		RED Areas Required	

- It's that simple.



PACKET OPERATIONS

© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved. 13

Packet Operator Field Activities Summary

- **Mobilize to Assignment Location**
 - Use FCC call for communications
- **Execute During Operational Period**
 - Use Tactical Call for location message
 - Use FCC call for personal messages
- **Demobilize and return home**
 - Use FCC call for communications

© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved. 14

Mobilize To Assignment

- Upon arrival at the site
 - Sign in on ICS 211 Check In List
 - Check in with site supervisor
 - Update your 214
- Get briefing from previous operator
- Assess packet equipment
 - Radio settings and connections
 - TNC settings
- Check in to assigned voice net

© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved. 15

Prepare/Check Outpost

- Check Outpost settings before transmitting
 - Correct BBS
 - Frequency
 - TNC settings
- If emergency, remove “xsctest” from bulletin list
- If needed, set up your User Identification with your **Tactical Call** for the Served Agency check in message

© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved. 16

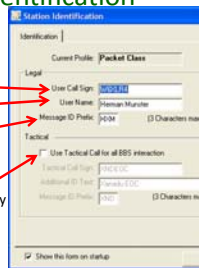
Served Agency Check In Message

- Begin the Operational Period with a packet check in message to the Served Agency
- Send a text message using your assigned (Tactical or FCC) call sign with the following information
 - Name and Call of Packet Operator
 - Name and Tactical call of Packet Station, if used
 - Time the packet station was operational
- Update personal 214
- Do a “Send/Receive” to get any pending messages and bulletins
- Begin operations

© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved. 17

Opening Outpost – User Identification

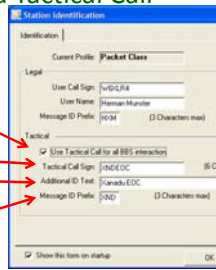
- Using your FCC call sign
 - User call sign
 - Your FCC call sign
 - Name
 - Your full name
 - Message ID Prefix
 - 3 letter prefix used in message number
 - Set according to your served agency policy
 - Or use your initials
- Unclick - **Use Tactical Call**
 - When fields are greyed out – using FCC call



© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved. 18

Operational Period Using a Tactical Call

- To use a Tactical Call
 - Check "Use Tactical Call ..."
 - Outpost will connect to the BBS using this call sign
- Fill in Tactical Call Sign
- Additional ID Text
 - Sent along with FCC call sign and tactical call in final ID packet
- Message ID Prefix
 - 3 letter prefix used in message number
 - Set according to your served agency policy



During Operational Period

- Send, receive, process packet messages
- Check for new bulletins and follow any new instructions
- Maintain voice radio contact
- Maintain ICS 214 Unit Log
- If prolonged period of inactivity (30+ minutes)
 - Perform a "Send/Receive" operation to verify connection with BBS
 - Message not needed
- Report any problems as instructed
 - Site supervisor
 - Voice net

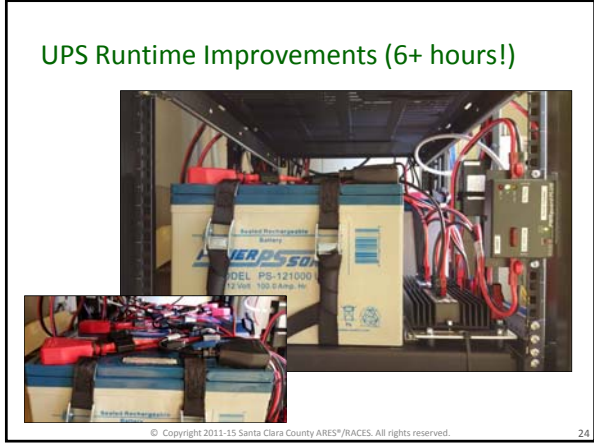
Demobilization

- Send a text message to the Served Agency using your assigned (Tactical or FCC) call sign
 - Name and Call of Packet Operator
 - Name/Tactical call of Packet Station, if used
 - Time the packet station is assigned to a new operator
 Or
 - Time the packet station is being deactivated
- Brief the incoming operator
- Paperwork!
- Check out with site supervisor
- Sign out on the Site ICS 211
- Update your ICS 214

NETWORK INFRASTRUCTURE IMPROVEMENTS

© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved. 22

- ### Key Focus in 2015
- Backbone redundancy, prep for higher speed access
 - Each site to have at least two high-speed (n * 10 Mbps) links
 - Upgraded link between W2XSC and W4XSC (80 Mbps)
 - ½ completed new link between W2XSC and W1XSC
 - Still looking for new site in NW part of county for W3XSC
 - Hardened backbone sites
 - Improved routing infrastructure
 - Improved UPS runtime in the event of a generator failure
 - Result: 6+ hours of battery runtime at Crystal Peak
 - Frazier Peak is next
 - Improved remote sensor infrastructure
- © Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved. 23



Relief Briefings



- All defined in the “Performance Standards and Best Practices”
 - Assignment, activation number
 - Served agency, person in charge, how recognized
 - Frequencies, tactical calls, locations, contact numbers
 - Who to contact regularly
 - Radio, power supply, antenna information
 - Nearest telephone: location and number, how to dial out
 - Location of toilet, water, food, first aid, and other supplies
 - Summary of previous operational period
 - Current status of: people, resources, incident
 - Pending issues for next operational period
 - Introduce replacement to rest of team

Copyright © Santa Clara County ARES®/RACES. All rights reserved.

28

Local Net Transfer/Handing-off



- For local hand-off with single net control operator
 - Relief operator can work as scribe briefly, just prior to hand-off
- For local hand-off with net control & scribe team
 - Replacement arrives early, familiarizes self with location
 - Replacement receives briefing from shift supervisor
 - Net Control runs net solo while scribe briefs replacement with details
 - Scribe catches up on anything missed
 - Net Control announces shift change, stand by for 30 seconds
 - Scribe slides into net control seat; replacement slides into scribe seat
 - Replacement → Scribe → Net Control → Break
 - Announce that net is resumed

Copyright © Santa Clara County ARES®/RACES. All rights reserved.

29

Remote Net Transfer/Hand-off

- You may need to transfer a net to a remote net control
 - Initial resource net control transfer to EOC or event location
 - Hand off to a more experienced net control operator
 - Evacuation of net control location
- Information to transfer
 - Current status of all who are checked into net
 - Resource Net transfer involves current en route status information
 - Any other instructions as may be necessary; see relief briefing list
- Key points
 - Priority One: Maximize accuracy; losing someone is not an option!
 - Priority Two: Minimize transfer time
 - Always use good communications techniques: 5 words at a time; proper pro-words; pause before speaking; eliminate need for repeats

Copyright © Santa Clara County ARES®/RACES. All rights reserved.

30

Procedure for Transfer of Net

NC1 = Current Net Control NC2 = Replacement Net Control

Who	What
NC2	Announces presence; ready for net control transfer
NC1	Acknowledge; announce start of H&W; requests NC2 to acknowledge each response with a tactical call such as "net2" (or similar)
NC1	Calls each person, one at a time, <u>phonetically</u>
Individuals	Respond as usual (for resource net: street location, odometer, call sign)
NC2	"acknowledged, net2" or "roger, net2"; or "say again ..."
NC1	Acknowledges; repeats process for rest of people on net
NC1	Fills in NC2 on any other pending issues; asks if ready to take net
NC2	Acknowledges all info; confirms ready
NC1	Announces transfer of net
NC2	Announces self as net control

Copyright © Santa Clara County ARES®/RACES. All rights reserved. 31

Exercise: Transfer of Level 3 Resource Net

- Need 5 volunteers
 - Net control 1
 - Net control 2
 - Scribe for net control 2 (optional)
 - Traveler 1
 - Traveler 2
- Before you start:
 - Net Control 1: write down traveler call signs
 - Travelers: make up a street location and odometer reading
- Follow the script ...
 - "<...>" indicates where you substitute your actual information
 - Example: <NC2 call sign> means you say Net Control 2's call sign
 - Net Control 2: fill in ICS-309 as you go
 - Scribe for NCO2: fill in Travel Tracking Form as you go

Copyright © Santa Clara County ARES®/RACES. All rights reserved. 32

Exercise: Transfer of Level 3 Resource Net

Who	What
NC2	Net control, this is <NC2 call sign>, ready for net control transfer
NC1	<NC2 call sign> roger; Break; I will now conduct a H&W check; when I call you, respond with street location, odometer and your call sign; <NC2 call sign> I want you to acknowledge each response as tactical call "net2"
NC2	Roger, net2
NC1	<traveler 1 call sign spelled phonetically>, health and welfare
Traveler 1	<Respond with your street location, odometer, call sign>
NC2	Roger, net2
NC1	Acknowledged. <traveler 2 call sign spelled phonetically>
Traveler 2	<Respond with street location, odometer, call sign>
NC2	Say again odometer
Traveler 2	<Respond with odometer>
NC2	Roger, net2
NC1	Health and welfare check complete

Continued on next page ...

Copyright © Santa Clara County ARES®/RACES. All rights reserved. 33

Exercise: Transfer of Level 3 Resource Net

Continued from previous page ...

Who	What
NC1	Net2 did you need any other fills?
NC2	Negative
NC1	O.K. Additional information follows: You need to contact Jenny at 867-5309 to unlink the repeaters after you close the net.
NC2	Acknowledged.
NC1	Are you ready to take the net?
NC2	Affirmative.
NC1	This is <NC1 call sign> turning over net control to <NC2 call sign>; <NC1 call sign> clear.
NC2	This is <NC2 call sign>, net control for the Santa Clara County Resource Net. This is a directed net...

Copyright © Santa Clara County ARES®/RACES. All rights reserved.

34



Performance Review

2015 Year End Summary



Santa Clara County ARES®/RACES

Revised: 10-Dec-2015

© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved.

35

Note: Examples from actual nets and ICS forms will be used to illustrate areas that we all need to work on.

Thought you said you could handle constructive criticism...



©2009 Judy Nelson

© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved.

36



On-Air Performance Review

2015 Year End Summary

© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved. 37








Instructions

- Listen to each recording
- Give a thumbs-up if it was properly done
- Give a thumbs-down if it could be improved
- Be ready to justify your opinion
- If it can be improved, how would you say it better?










Copyright 2015 Santa Clara County ARES®/RACES. All rights reserved. 38

Resource Net

- Net Control Instructions 
- Check-In   
- Check-Out   









Copyright 2015 Santa Clara County ARES®/RACES. All rights reserved. 39

Tactical Net – Dealing with Tactical Call Signs

- Net Control ID 
- Tactical Call Sign Check-in/Assignment   
- Tactical Call Assignment Change 
- In Position   
- Check-Out 












Copyright 2015 Santa Clara County ARES®/RACES. All rights reserved. 40

Tactical Net – Gathering Information

- NCO pre-announce info request, format 
- NCO instructions before gathering reports 
- Info Reports     
- Health & Welfare 














Copyright 2015 Santa Clara County ARES®/RACES. All rights reserved. 41

Tactical Net – Other Directed Net Activities

- NCO Instructions 
- Directed Net 
- Status Update     
- Dead Air 
- Temporarily Leave Net / Return  
- Ask/Receive Info 







Copyright 2015 Santa Clara County ARES®/RACES. All rights reserved. 42

Shadow Net – Open Net

- Prowords 
- Listen up!   
- Status Reports    
- Radio configuration 
- Tactical Call conversation 
- Noise!   

Copyright 2015 Santa Clara County ARES®/RACES. All rights reserved. 43

Hospital Net – Directed Net


- Message Handling Order 
- Message Passing  
- Dealing with interference 
- Radio configuration  

© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved. 44

Key Points


- Net control operators:
 - Define expected response format
 - Pre-announce upcoming information gathering, when possible
 - Give instructions that avoid doubles
- Net participants
 - Listen up and answer promptly when called
 - Answer in requested format -- no more, no less
 - When using tactical calls, call and answer using tactical call
- All
 - Attend training! Best performers had more training.
 - Know how to configure your radio; check configuration before using
 - Minimize the number of words (on-air time) used
 - Observe proper handling order at all times
 - Use proper prowords at all times
 - Be prepared for the environment: noise, heat, cold, rain, ...
 - The last thing you say should be your FCC call sign

Copyright 2015 Santa Clara County ARES®/RACES. All rights reserved. 45




Forms Review

2015 Year End Summary




Santa Clara County ARES®/RACES

Revised: 05-Dec-2015

© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved. 46

ICS 214 – Unit Activity Log

- Our version: ICS 214-SCCo
- A record of all major activities and events
- EVERYONE fills out a 214
 - Individuals: a unit of one
 - Teams: Team leader
 - Start when you get assignment (home)
- Occasional message traffic?
 - Just log it right on the 214
- Use multiple pages if necessary
- Turn in to supervisor at end of shift
- Instructions on back
- Neatness counts




<http://www.scc-ares-races.org/operations.html>

© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved. 47

Exercise: ICS-214 Unit Log

- Create an ICS-214 log for the following scenario in City of Xanadu (XND)
 - Incident is "Tree Lighting", activation number: XND-15-TLE
 - You are assigned a Tactical Call of "Rover 1"
 - The Event IC is Herman Munster W6XRL4
 - The event is scheduled for 1600 to 2100 hours today
 - You leave home at 1515 hours, mileage 123
 - You arrive at the staging location at 1545 hours, mileage 133
 - The event starts at 1600
 - Lots of activities take place during your 5 hour shift such as: H&W, shift change, breaks, messages, etc. (we won't log these for this exercise to save time)
 - You are released at 2105 and check out of staging

Your ICS-214 should be completed as you would submit it when checking out



© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved. 48

Exercise: ICS-214 Unit Log

UNIT LOG ICS 214-SCCo ARES/RACES		1. Incident Name and Activation Number <i>Xandu Tree Lighting XND-15-TLE</i>	2. Operational Period (Date/Time) 12/12/2015 12/12/2015 From: 1600 To: 2100
3. Unit Name / Tactical Call / Designators <i>Rover 1</i>		4. Unit Leader (Name, Call Sign, ICS Position) <i>Your Name, Your FCC Call Sign</i>	
5. Personnel Roster Assigned			
Name	Call Sign	ICS Position	Home Base/City

UNIT LOG ICS 214-SCCo ARES/RACES		1. Incident Name and Activation Number <i>Xandu Tree Lighting XND-15-TLE</i>	2. Operational Period (Date/Time) 12/12/2015 12/12/2015 From: 1600 To: 2100
3. Unit Name / Tactical Call / Designators <i>Rover 1</i>		4. Unit Leader (Name, Call Sign, ICS Position) <i>Your Name, Your FCC Call Sign</i>	
5. Personnel Roster Assigned			
Name	Call Sign	ICS Position	Home Base/City
<i>Your Name</i>	<i>Your Call Sign</i>		

© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved. 49

Exercise: ICS-214 Unit Log

Instructions for completing the form:

Field #	Field Title	Instructions
4	Unit Leader	For individuals: Enter your name and call sign For teams: Enter the name, call sign and ICS position of the individual in charge of the unit.
5	Personnel Roster	For individuals: Leave blank For teams: List the name, call sign, ICS position and home base/city of each member assigned to the unit during the operation period.

Most forms have the instructions on the back

© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved. 50

Exercise: ICS-214 Unit Log

UNIT LOG ICS 214-SCCo ARES/RACES		1. Incident Name and Activation Number <i>Xandu Tree Lighting XND-15-TLE</i>	2. Operational Period (Date/Time) 12/12/2015 12/12/2015 From: 1600 To: 2100
3. Unit Name / Tactical Call / Designators <i>Rover 1</i>		4. Unit Leader (Name, Call Sign, ICS Position) <i>Your Name, Your FCC Call Sign</i>	
5. Personnel Roster Assigned			
Name	Call Sign	ICS Position	Home Base/City

6. ACTIVITY LOG	
Time (24:00)	Major Activities & Events / Occasional Messages (Indicate From / To / Msg# / Msg Text)
1515	<i>Left Home, OD 123</i>
1545	<i>Arrived at staging, OD 133</i>
1600	<i>Event starts</i>
2105	<i>Released, checked out of Staging</i> ← Activity Detail Here

7. Prepared By (Name, Call Sign, ICS Position) <i>Your Name, Your FCC Call Sign</i>	8. Date & Time Prepared <i>12/12/2015 - 2105</i>	9. Page <u>1</u> of <u>1</u>
--	---	------------------------------

© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved. 51

END FORMS REVIEW

© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved. 67




Mesh / Wi-Fi

2015 Year End Summary



Santa Clara County ARES®/RACES


Revised: 07-Dec-2015

ARES and Amateur Radio Emergency Service are registered servicemarks of the American Radio Relay League Incorporated and are used by permission.
© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved. 68

Mesh / Wi-Fi Review

- March 2015 – Mesh / Wi-Fi Workshop with 33 participants
- Discussed
 - IP Networking basics
 - Discussed hardware available to use
 - VOIP phones
 - Power over Ethernet (POE)
 - Frequencies
 - Part 15 vs Part 97 considerations
 - Hands-on exercises








© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved. 69

Mesh / Wi-Fi Review

- County Wide Drill - April
 - One aspect of the exercise provided hands-on use of a Mesh Network

- Milpitas BBQ Festival - May
 - 3 Ticket Booths with Mesh nodes, VOIP phones, and cameras
 - Command post with Asterisk PBX, VOIP Phones, video display

- Sunnyvale
 - Workshop: May and July - 8 plus nodes, VOIP phones, Asterisk PBX
 - Field Day: June - 4 nodes with cameras and VOIP phones
 - SNAP Graduation: October - 2 nodes with phones, voicemail, 1 camera
 - Joint workshop with Cupertino: August

© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved.

70

Mesh / Wi-Fi Review

- Cupertino SCC Sheriff's Heroes 5K Run - November
 - 6 locations
 - Mesh nodes, VOIP phones, cameras, Asterisk PBX

- A Mesh / Wi-Fi workshop is scheduled for June 2016

Additional information: www.scc-ares-races.org/mesh/

SCC Mesh User Group: groups.yahoo.com/group/scc-mesh


© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved.

71

END MESH/WI-FI REVIEW

© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved.

72




Training Plans 2016

2015 Year End Summary



Santa Clara County ARES®/RACES

Revised: 06-Dec-2015

ARES and Amateur Radio Emergency Service are registered servicemarks of the American Radio Relay League Incorporated and are used by permission.
© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved.

Training Plans For 2016

- Intro and Fundamentals Class offered 3 times each year
 - Maintain reasonable class size
 - Location – 2 in Mtn. View and 1 in Sunnyvale
- Field Ops reduced to one class rather than two
 - Fundamentals Class is now a prerequisite
 - Much of the material from Fundamentals was duplicated in this class
- Planning class to be rewritten
 - More realistic examples and exercises
- Discussion about a Leadership Course/Workshop for ECs/AECs
 - Your ideas welcome

© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved.

END TRAINING UPDATES

© Copyright 2011-15 Santa Clara County ARES®/RACES. All rights reserved.



