

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 (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

0

0

Field Operations - Type III Part A

Test your HT

- Make sure your radio is programmed to these frequencies:
 - Primary 147.525 Simplex, No Tone
 - Backup 1 446.500 Simplex, No Tone
 - Backup 2 146.490 Simplex, No Tone
- Set your radio to its lowest power setting.
- Call Net Control using your FCC Call Sign for a radio Check.

You need to use a head set or ear bud

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

1

1



Field Operations
Type III Part A



Santa Clara County ARES®/RACES
Last Updated 1-Jan-2024

ARES and Amateur Radio Emergency Service are registered service marks of the American Radio Relay League Incorporated and are used by permission.

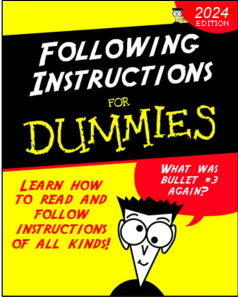
Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

2

2

Housekeeping

- Introductions
- Pen/pencil, paper, course materials
- Cell phones
- Side conversations
- Questions
- Breaks **Only water allowed in this room**
No food or other drinks
- Restrooms **Door Code 9033**
- In case of emergency
- **PARKING** – move at first break if not parked across the street



Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

3

3

You will be assigned a student number for the class exercises

Please complete the homework before coming to class.


Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

4

4

Fictitious Examples Used Today

- W6XRL4: Herman Munster
 - Father in 1960's sitcom "The Munsters"
 - Was an aspiring amateur radio operator
 - Call sign: W6XRL4



Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

5

5

Value Add

Question:

You've got your license and a radio.


What value do you (could you) add to a planned event or emergency incident?

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

6

6

Learning Objectives



At the end of this two-part course, you should be able to:

- Describe the role of a field operator, including
 - Served agency needs, field assignment types, SCCo ARES/RACES credentialing system
- Explain and perform basic safety procedures
- Properly execute an assignment, including
 - Mobilization, selecting equipment, field operations, dealing with problems, demobilization
- Understand and use field operations checklists

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

7

7

Agenda



- Mastering Field Communications
- Supporting Our Served Agencies
- Field Communications Assignments
- Credentials
- Safety
- Simulated deployment
 - Mobilization
 - Setting up a field station

The second class will continue with:

- Type III Field Equipment, Type II Field Equipment, On Site Operations, Traffic Types, Advanced Techniques, Dealing With Problems, Demobilization, Checklists

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

8

8



Mastering Field Communications

Be an expert at field radio communications

15m

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

9

9

What Does It Take To Be A Great Field Communicator?

- Merriam-Webster says:
 - com-mu-ni-cate: to transmit information, thought, or feeling so that it is satisfactorily received or understood
- Just about anyone can do the first part
 - ... transmit information, thought, or feeling ...
- The second part is the hard part!
 - ... so that it is satisfactorily received or understood
- What does it take to do that really well? (And why should we?)

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

10

10

Components of Field Communications

Experience
(Done it)

- Anticipates needs
- Solves problems

Skill
(Can actually do it)

- Station & net operations
- Message passing
- Agency interactions

Knowledge
(Knows what to do)

- Technical
- Procedural
- Agency-specific

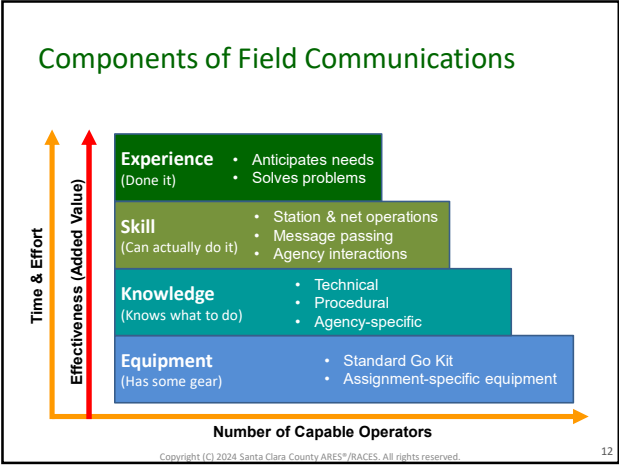
Equipment
(Has some gear)

- Standard Go Kit
- Assignment-specific equipment

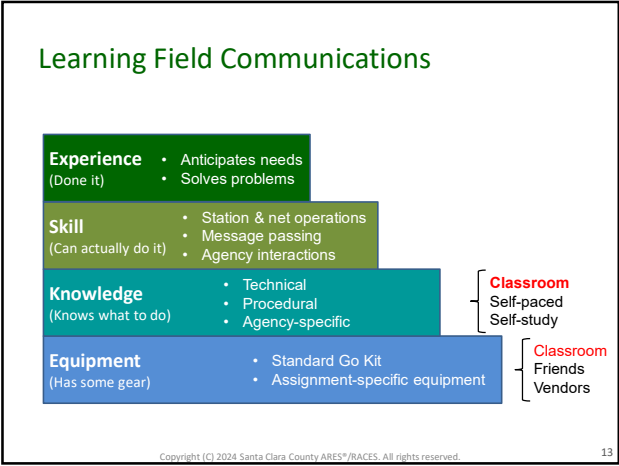
Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

11

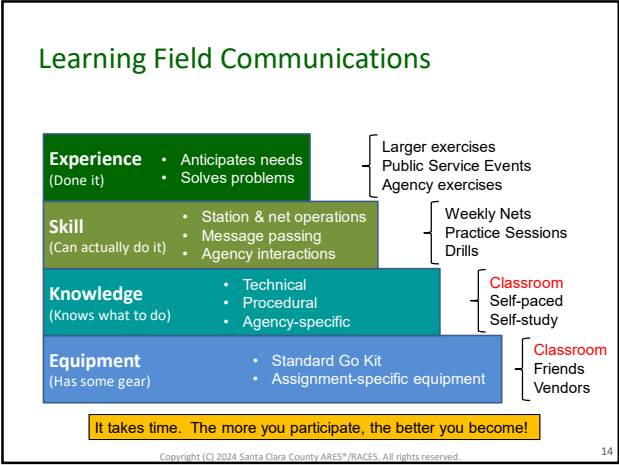
11



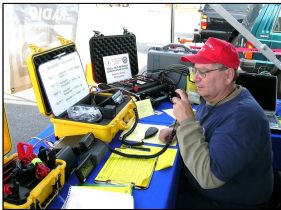
12



13



14



Supporting Our Served Agencies
To serve them well, we must understand their needs

15m Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved. 15

15

Amateur Radio Support for Agencies

- In a disaster, communications is the #1 problem!
- We can help with:
 - Communications Capability
 - Create the capability where it doesn't normally exist
 - Provide backup capability where existing systems have failed
 - Information collection and dissemination



Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved. 16

16

The key difference between communications for a served agency
(such as at a public service event or emergency incident)
and other amateur radio activities
(such as contesting, DXing, "talk nets", etc.)
is ...

We operate on the served agency's terms:

- Can include mission critical information (potentially involving threats to life and property)
- Handled in the manner that they need it (their content, their format, their priority, their procedures, their locations, ...)

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved. 17

17

Doing Business on Served Agency’s Terms

- Disaster Service Worker Program
 - Worker’s compensation for injury; limited liability protection
 - If properly activated, supervised and working as assigned and trained
- ICS/SEMS/NIMS Training
 - ICS: Incident Command System
 - SEMS: Standardized Emergency Management System
 - NIMS: National Incident Management System
- Forms
 - ICS: 205, 211A, 213, 214, 309, ...
 - Status: Jurisdiction Status, Shelter Status, Med Facility Status
 - Resources: 213RR, Med Resource Request, RACES Mutual Aid Req.
- Agency-specific Procedures
 - Paperwork, access, credentials, systems, ...

18

ICS – Incident Command System

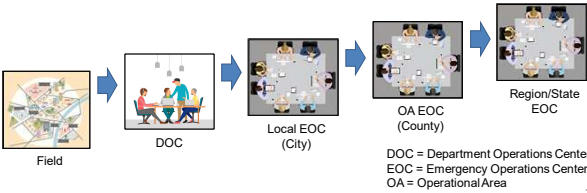
- Born out of management challenges of rapidly moving wildfires in 1970s
- Any size/kind of incident, common management structure & terminology, logistical and administrative support, cost effective
- Messages are usually addressed to positions, not individuals



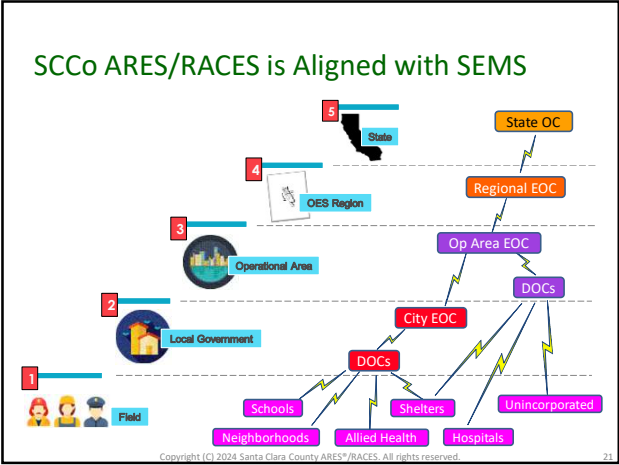
19

SEMS – Standardized Emergency Management System

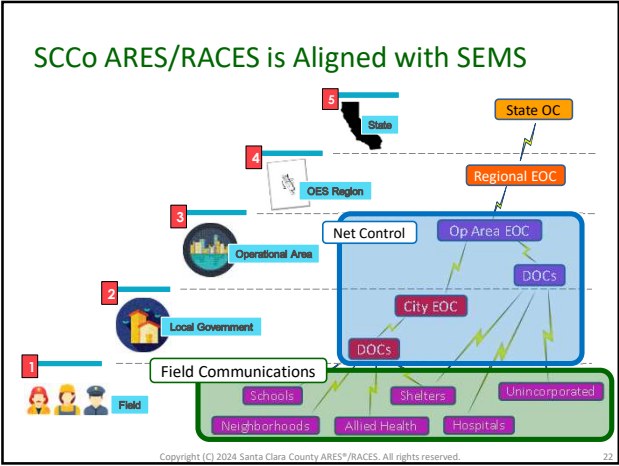
- California specific
- Born out of coordination challenges of 1991 East Bay fires
- Improve coordination of state, local response in CA
- To be effective, know the communications flow in SEMS
 - What info? What format? Which ICS positions?



20



21



22

Agency-aligned Communications

- General ICS Forms
 - ICS 213 Message Form
 - EOC 213RR Resource Request
 - ICS 309 Communications Log
- Status Forms
 - WebEOC Shelter Status
 - WebEOC Jurisdiction Status
- Allied Health Forms
 - Allied Health Facility Status
- Hospital Forms
 - EMResource HAvBed Report
 - WebEOC Medical Facility Status
 - Medical Facility Resource Request
- Local
 - RACES Mutual Aid Request
 - Damage assessment

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

23

How We Prepare For Working With Agencies

- Training: ICS/SEMS/NIMS and our own training classes
 - IS-100, IS-200, IS-700, G606 (SEMS), and this class
- Organizational structure (follows SEMS Model)
 - Cities > County > Region > State
 - Field Communications > Net Control
- Our own exercises follow ICS/SEMS structure
 - Command and general staff
 - Documentation (ICS-205, ICS-211, ICS-214, ICS-309, After Action Report (AAR, ...))
- Our own planned events follow ICS/SEMS
 - DSW activation, supervision
 - ICS structure, plain English, ICS forms
- Participation in agency exercises and events
 - Yellow Command, Statewide Medical Health, Golden Eagle, various local events...

We take every opportunity to train and practice how our agencies work

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

24

24



Field Communications Assignments

What to expect


20m



Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

25

25

Example: Field Observation





DOCEOC

- Provide essential information for situational awareness
 - Earthquake damage (Modified Mercalli Scale), water/flooding level, checkpoints, fire watch, crowd observation, ...
- Requirements: Equipment, Knowledge, Skill, Experience?

13

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

26

26

Example: Parades, Races, Festivals

- Provide essential information for situational awareness
 - Checkpoints and rovers provide crowd estimates, report event status, assist with lost children and report important conditions to officials
- Requirements: Equipment, Knowledge, Skill, Experience?



Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

27

27

Example: Neighborhoods / Local EOC

- Community Emergency Response Teams report to neighborhood command posts (CPs); CP reports to city EOC
 - Damage assessments, team status
- Amateur Radio: Neighborhood CP to EOC
- Requirements: Equipment, Knowledge, Skill, Experience?



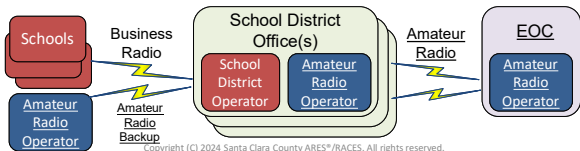
Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

28

28

Example: Schools / Local EOC

- Schools report to school district; school districts report to the city EOC
 - Status (damage, injuries, ...), resource requests, H&W
- Amateur Radio:
 - Individual schools to school districts (backup)
 - School districts to City EOC (primary or backup)
- Requirements: Equipment, Knowledge, Skill, Experience?



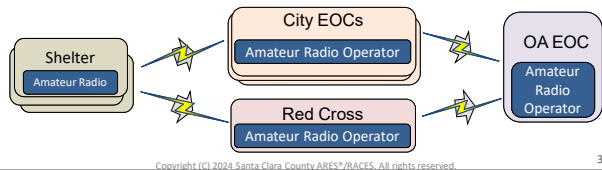
Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

29

29

Example: Shelters

- Shelters may be managed by a local jurisdiction or by a non-governmental organization (NGO) such as the Red Cross. Shelter status and other municipal issues are reported to the jurisdiction EOC. Shelter resource support may come from the NGO.
- Shelter status, resource requests, municipal issues, H&W
- Amateur Radio:
 - Shelter to (City EOC and/or NGO) to OA EOC
- Requirements: Equipment, Knowledge, Skill, Experience?



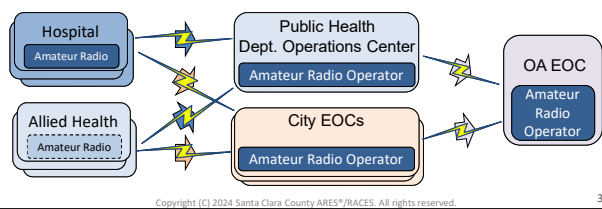
Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

30

30

Example: Hospitals, Allied Health

- Medical info is reported to the PHDOC; municipal issues are reported to the city EOC; OA EOC supports both
 - Bed status, facility status, resource requests, municipal issues, H&W
- Amateur Radio:
 - Hospital to (PHDOC or City EOC) to OA EOC
 - Support for Allied Health facilities is new
- Requirements: Equipment, Knowledge, Skill, Experience?



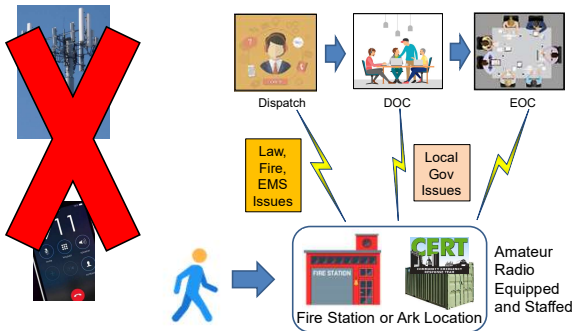
Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

31

31

Example: Alternate 911

Requirements: Equipment, Knowledge, Skill, Experience?



Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

32

32

Example: Distributing Public Info


PIO
Public Information Officer

↓

Amateur Radio


↗

Broadcast Media




↘

Social Media



What about those who don't have access or locations where communications systems are damaged?



- Post info at: schools, shelters, neighborhoods, wherever needed...
- Requirements: Equipment, Knowledge, Skill, Experience?

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

33

Amateur Radio Operator as Coach

- We exist to serve these agencies (government and non-government), not manage or direct them
 - We are NOT there to tell them what to do or how to do it
- But most agency message originators/recipients don't know how to utilize amateur radio
 - They simply haven't practiced with us before (or in a long time)
 - May not be familiar with paper forms (usually use web-based system)
 - May not know our communications methods
 - May not know how/where to address messages
 - May not know what to do with paper form when received
- We can help by acting as a coach
 - But be VERY careful to only suggest, not tell

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

34

How We Make Personnel Assignments

- We know the specific training, equipment, knowledge, experience and operating skill level needed to complete each type of assignment correctly
- But how do we know who has those combinations of skills?
- How do we pick who to activate for any given assignment?

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

35

Copyright © 2024 Santa Clara County ARES®/RACES. All rights reserved.

12



Credentials

Different assignments require different skills.
Who is qualified for a given assignment?

36

Resource Assignment Challenges

- Very different types of assignments:
 - Flood watch:
 - Monitor and report on water levels at a creek location
 - School, shelter, hospital, allied health facility:
 - Formal message passing
 - Larger or more remote locations, DOCS, ...
 - Formal message passing on two nets simultaneously
 - Event/incident main point of contact
 - Provide field communications for an entire event/incident
- Who should we assign?
- How do we know they can complete the assignment correctly?
How do we know they have the appropriate equipment?

37

Resource Typing Is The Answer

- Incident Command System (ICS) resource “Types” identify capability
 - Applies to equipment (fire apparatus, aircraft, ...)
 - Applies to personnel roles (incident commander, section chief, ...)
- SCCo ARES/RACES credentials: five resource types across five roles
 - Type IV requires sign-off by city Radio Officer
 - Types III, II, I require operational evaluation by peer evaluator
 - Each resource type includes operator and equipment appropriate for the role

Type	Skill Level	Field	Net Control	HF*	Packet	Shadow
I	Specialist	Field I	Net Control I	HF I	Packet I	Shadow I
II	Advanced	Field II	Net Control II	HF II	Packet II	Shadow II
III	Independent	Field III	Net Control III	HF III	Packet III	Shadow III
IV	Basic	Type IV Communicator				
V	Unknown	Licensed Amateur Radio Operator (w/DSW)				

*HF not yet defined

38

Communicator Type IV

C4

- Capabilities
 - Standard SCCo ARES/RACES go kit
 - Respond anywhere in jurisdiction
 - Basic net usage procedures
 - Simple damage/status reports
 - Handle low traffic levels
- Assignment Types
 - Parades, festivals, races
 - Checkpoints, flood watch
 - Damage surveys
 - CERT team support (simple reports)

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

39

39

Field Operator Type III

F3

- Capabilities
 - Type IV plus ...
 - Fully independent operator
 - Has the equipment, training, knowledge, skill, and experience to handle basic assignments correctly, without the need for assistance or coaching
 - 3rd Party traffic
 - Low to medium traffic volume
- Typical Assignments
 - CERT team support (complex reports)
 - Schools, shelters
 - Jurisdiction DOC/EOC (smaller, not for net control)
 - Hospitals
 - Allied health facilities
 - Fire stations

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

40

40

Field Operator Type II & Type I

F2

F1

- Field Operator Type II = Advanced Operator
 - Capabilities
 - Type III plus ...
 - Medium to high traffic volume, multiple nets
 - Cross-band repeat
 - Standard Go Kit + mobile (25+W) radio, antenna, mast, coax, ...
 - Assignments
 - Larger, more critical, or more remote sites
 - Help plan small events
- Field Operator Type I = Specialist Operator
 - Type II plus
 - Extended operations (72+ hours)
 - Most critical and complex assignments
 - Principal interface for planning, design, set-up, operations

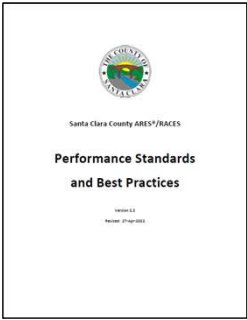
Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

41

41

Credentialed Operators Follow Performance Standards and Best Practices

- Covers all performance aspects of operating in ARES/RACES
 - Professionalism and Training
 - Communications Technique
 - Safety
 - Methods and Procedures
 - Equipment
 - Documentation
- Applies to all operators
- Standard used for credential performance evaluations

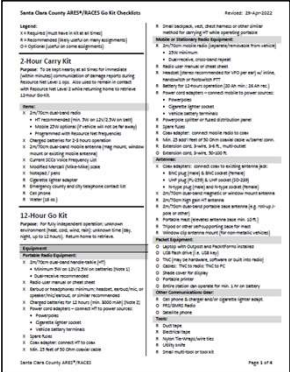


<http://www.scco-ares-races.org/operations.html> 42

42

Credentialed Operators Come With Standard Go Kit

- 2-hour Carry Kit
 - Keep it nearby
- 12-hour Go Kit
 - Needed for any deployment
- Extended Kit
 - 72+ hours
- Includes:
 - Required
 - Recommended
 - Optional
- More on equipment later ...



Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved. 43

43

Earning a Credential

- Equipment
 - Standard 12-hour go kit, plus more as appropriate
- Training
 - SCCo ARES/RACES courses: technical and role-specific
 - ICS/SEMS/NIMS courses
- Knowledge
 - Able to explain key concepts (general and role-specific)
- Experience
 - Participation in nets, events, incidents
- Performance
 - Peer-reviewed, based on Performance Standards
 - Conducted at regular events (no special circumstances needed)

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved. 44

44

Resource Assignments By Type

- Very different types of assignments:
 - C4

 – Flood Watch
 - Monitor and report on water levels at a creek location
 - F3

 – School, shelter, hospital, allied health facility
 - Formal message passing
 - F2

 – Larger or more remote location, DOCS, ...
 - Formal message passing; operate two nets simultaneously; cross-band
 - F1


 – Event/Incident main point of contact
 - Organize field communications for an entire event/incident

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

45

45

Mutual Aid Communicator (MAC) Endorsement



- An amateur radio operator that meets certain minimum requirements and is willing to help outside own city/agency when needed
 - Only called upon when not needed within own city/agency
- Must hold at least Type IV Credential:
 - Encouraged to earn role-specific credentials (Type III, II, I)
- Some additional administrative requirements
 - County DSW Registration
 - Background check

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

46

46

Other Endorsements



- County EOC Radio Operator (ERO)
 - Work in the County EOC Radio Room as Net Control or Packet operator
- County Fire Station Operator (FRO) [pending]
 - Work in a County Fire Station as a Field or Packet Operator
- County EOC Races Unit Leader (RUL)
 - Work in the County EOC as the RACES Unit Leader
- More information on endorsement can be found at:
<https://www.scc-ares-races.org/credentials>

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

47

47

Credentialing Program Information

- <https://www.scc-ares-races.org/credentials>
 - Documentation
 - Credentialing Program Handbook
 - Performance Standards and Best Practices
 - Forms
 - Credential and Endorsement Forms
 - Approved Activity Forms
 - Training Guidance – required classes
 - Program Management & Support
 - Input and Guidance
 - Submitting Records
 - Program Manager

Santa Clara County ARES/RACES	
Herman Munster	
WEXRL8	
Credentials:	
Evaluator	E2
Field Comm	F1
HF Comm	H2
Net Control	N3
Packet Comm	P2
Shallow Comm	S1
Endorsements:	
Mutual Aid Comm	MAC
Fire Station Radio Oper	FRO
EOC Radio Operator	ERO
EOC RACES Unit Lead	RUL
Expires: Jan 31, 2024	

48

Value Add – Round Two

Question:
What value do you (could you) add to a planned event or emergency incident?

49

Value Add – Round Two

Question:
What value do you (could you) add to a planned event or emergency incident?

Answer:
For credentialed operators ...
The **equipment, knowledge, skill and experience** necessary to provide the **communications capability** needed by served agencies to **collect and disseminate information in the manner they need it** (content, format, priority, procedures, locations, ...).

50



Safety

Safety is Everyone’s Responsibility

7m

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

51

51

Personal Safety


- Don’t accept an assignment until you and your family are safe
- On assignment, actively & continually assess personal safety
 - Maintain awareness of surroundings and potential for safety issues
- Call 911 or other official emergency number if fire, medical or public safety issue exists
- Wear proper attire, even for drills, public service events
 - Vest (lime yellow, ANSI Class 2)
 - Personal attire
 - Long pants (unless otherwise authorized)
 - Sturdy footwear with closed toe, no sandals
 - Protection from the elements (long sleeves, hat, ...)
 - Other personal protective equipment (PPE) as needed (gloves, safety glasses, hearing protection, ...)

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

52

52

Antenna Safety



- LOOK UP when placing antennas
- Assume all overhead cables are energized and dangerous
- Location, location, location
 - No possibility to contact power lines, even if the support should fail
- Take care with “launchers”
 - When using slingshots, arrows, or power-assisted antenna launchers to string up the antenna, be sure no one is in range before you launch, and there are no hidden or unseen power lines.
- Use a safety spotter
 - Nobody can do the work alone and assess safety distances. A safety spotter’s only job it to keep people and equipment safely away from power lines.

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

53

53

RF Safety Evaluation

- Your license requires an RF Safety Evaluation. The FCC rules changed and existing stations had until May 03, 2023 to comply.
- Controlled vs. uncontrolled environment: you (or other hams) and your household vs. unsuspecting public bystander
- Example scenarios from ARRL rf-exposure-calculator (146 MHz, FM, duty cycle is 5 min Tx / 10 min Rx), minimum safe distances shown:
 - Mobile radio, antenna on push-up mast:
25W, 25 ft coax, total gain 3 dB
controlled: 3 ft. uncontrolled: 4 ft. 3 in.
 - Car mag mount antenna (metal roof): 50W, total gain 2dB
controlled: 3ft. 9 in. uncontrolled: 5 ft. 5 in.
- ARRL RF exposure page and calculator
 - <https://www.arrl.org/rf-exposure>
 - <https://www.arrl.org/rf-exposure-calculator>
- See the Antenna Class Slides for more details
- Will become part of Credential Evaluations

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

54

54

Human Factors



- Both fatigue and stress can result in
 - Poor communications skills; slower task performance
 - Difficulty concentrating and thinking clearly; forgetfulness
 - Inattention to important details
- Avoidance
 - Work at moderate pace as applicable to the assigned task
 - Switch jobs with partner; take periodic breaks
 - Adjust duties to alternate between heavy and light duty tasks
 - Look for signs of impairment in your team-mates

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

55

55

Environment




- Sun, heat, cold, rain, wind, lightning
 - Dress appropriately; use layers
 - Wool and synthetics are best for cold & wet situations
 - Protect exposed skin from sun, wind, cold
 - Stay hydrated
 - Cool liquids in the heat, warm liquids in the cold
 - Use protective shelter (existing or bring it with you)
 - Pop-up tents/shelters are always in need at drills, public service events
 - Use weights to keep pop-ups secure in the wind (suggest 40 lbs. per leg)
 - For lightning: move indoors, disconnect antennas
 - Watch for signs of medical problems related to heat or cold in yourself and others

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

56

56

Disasters



- Floods, land/mudslides, fires, earthquakes
 - Do not enter affected area
 - Do not proceed past an active fire line
 - Do not enter water deeper than six inches, flowing water, flooded underpass
 - Do not try to cross land/mudslide, even after it stops moving
 - Do not enter suspect structures
 - Increase vigilance, alert level near affected areas
 - Wind direction can shift fire dramatically and cut off escape
 - Flash flooding can occur in ... a flash; know where high ground is
 - Fire followed by rain will likely yield land/mudslides; stay away
 - Be alert for smell of natural gas or hissing sounds after earthquakes, slides

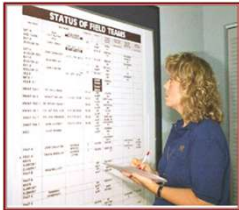
Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

57

Simulated Deployment

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

58



Mobilization

Field Operations
(Review material from the Fundamentals Class)

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

59

Review: Mobilization
(Covered in Fundamentals Class)

- Alerting
- Resource Net Levels 1,2,3
- Assignment
- Activation
- Travel
- Arrival
- Sign In

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

60

60

Review: Alerting

- Definition of alerting:
- Alerting Types
 - Self-alerting
 - Examples:
 - Non-self-alerting
 - Examples:
 - Both
 - Examples:
- Alerting Methods
 - Examples:

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

61

61

Review: Resource Net Level 1

- Trigger:
- Purpose:
- Repeaters/Frequencies:
- Activity:
- Example report:

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

63

63

Review: Resource Net Level 2

- Trigger:
- Purpose:
- Repeaters/Frequencies:
- Activity:
- Example:

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

65

65

Review: City Nets

- Trigger:
- Purpose:
- Repeaters/Frequencies:
- Activity:
- Example:

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

67

67

Review: Resource Net Level 3

- Trigger:
 - 1.
 - 2.
- Purpose:
- Repeaters/Frequencies:
- Activity:
- Example check-in:

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

69

69

Review: Assignment

- What type of assignment should you accept?
 - I _____ the assignment
 - I will be _____ while performing the assignment
 - I have been properly _____ for the assignment
 - I have the right _____ for the assignment
 - I am _____ to go
- What type of assignment should you decline?
- What if you're not ready to accept any assignment?

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

71

71

Review: Activation

- When ready to depart, what info does net control need?
 - I am _____ to depart
 - My _____ is: _____
 - My starting _____ is <last ____ digits>
 - End with your _____
- What key info should you get from net control?
- Begin filling out your ICS-_____

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

73

73

Exercise: ICS-214 Unit Activity Log

Did you view the ICS-214 Video Training?

- Assume the time is currently 08:00
- The resource net gives you the following general assignment:
 - Participate in the Field Ops Type III Training Class
 - Use the class location (we'll keep it simple)
 - The event will be from 09:00 to 12:00 today (operational period)
 - The incident/mission/activation number is TC-24-02T
- You depart from home 5 minutes later
 - Your starting odometer is 123
- Start an ICS-214 Unit Activity Log and keep it updated throughout the class

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

75

75

Exercise: ICS-214 Unit Log

UNIT LOG ICS 214-SCCA ARES/RACES		1. Incident Name and Activation Number <i>Field Ops Type III Training Class</i> TC-24-02T		2. Operational Period (Date/Time) From: <i>MM/DD/YYYY 09:00</i> To: <i>MM/DD/YYYY 12:00</i>	
3. Unit Name / Tactical Call / Designators			4. Unit Leader (Name, Call Sign, ICS Position) <i><your name>, <your call sign></i>		
5. Personnel Roster Assigned					
Name		Call Sign		ICS Position	
Home Base/City					
This section only used by team leaders. Used when a group of operators are dispatched together.					
6. ACTIVITY LOG					
Major Activities & Events / Occasional Messages (indicate From / To / Msg# / Msg Text)					
Time (24:00)					
08:00		Assignment: attend Field Ops Type III Training Class at <location>			
08:05		Departed home, odometer 123			

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

76

Example: Resource Net Departure

- Check-in for Public Service Event
 - Assignment, activation number, other details already known
 - Instructions were to check-in when ready to depart
- Example check-in
 - Identifies and states intended communication (ready to depart)
 - Provides information requested, nothing more, nothing less
 - Ends with call sign, which satisfies FCC and indicates transmission is completed
- Example check-in
 - Same as above, but
 - Street names are complicated, so he uses "I spell" correctly. Excellent!

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

77

Travel

- Follow _____'s instructions
- Listen and respond promptly to _____ & _____ checks
- Key safe driving behaviors
 -
 -
 -
 -
 - Observe "distracted driving" laws
 - Key: wired microphone, mounted radio

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

78

Example: Resource Net Health & Welfare

- Health and welfare checks usually done in a batch
- Each person called sequentially
- Example batched health & welfare check
 - Both provide location, odometer and end with call sign. Excellent.



Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

80

80

Resource Net Linked Repeaters

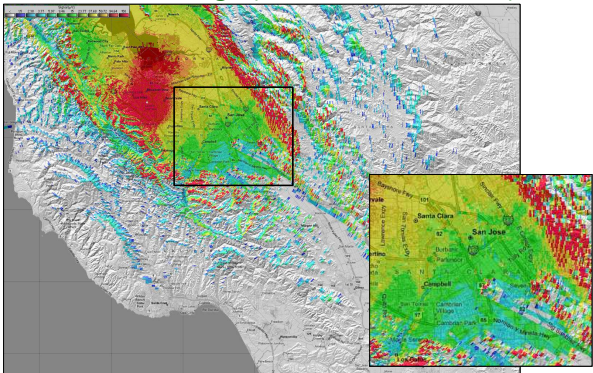
- To cover the entire county, we use three linked repeaters
- Pre-program all of them into your radio
- Know the coverage areas
- Remember to switch to the correct repeater as you drive

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

81

81

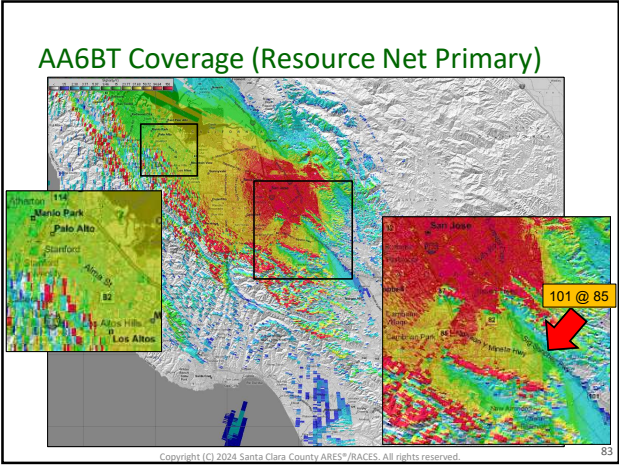
W6ASH Coverage (Resource Net North)



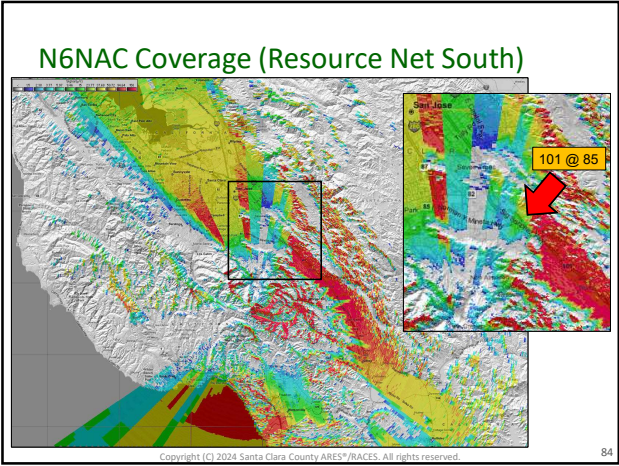
Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

82

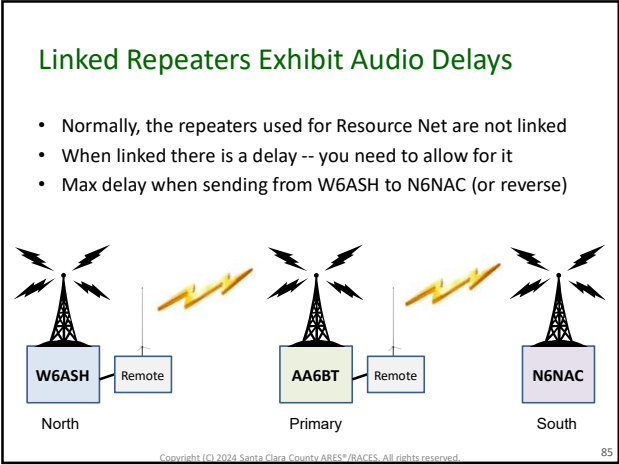
82



83



84



85

Example: Linked Repeater Delay

MM Report on Resource Net – Level 1

(The same conversation as heard on three linked repeaters.)

N6NAC

AA6BT

W6ASH

Record the call signs as you hear them.

Can you tell who they are?

IMPORTANT: After keying up, wait 2 seconds before talking on linked repeaters

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

86

86

Arrival at Staging

• Stay in your _____

• Update your ICS- _____

• Contact resource _____

• Provide the following info:

– I have _____ at _____

– My ending _____ is <last ____ digits>

– I am _____ of the _____ net and _____ into the _____ net

– End with your _____

• Then, contact _____ net control

• Say:

• Follow _____'s _____

• If you can't reach the _____, then:

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

87

87

Exercise: ICS-214 Unit Activity Log

• Assume the time is 08:25 and you have arrived at staging

• Your final odometer is 134

• Update your ICS-214

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

89

89

Example: Updated ICS-214

UNIT LOG ICS 214-SCCs ARES/RACES	1. Incident Name and Activation Number Field Ops Type III Training Class TC-24-02T	2. Operational Period (Date/Time) MM/DD/YYYY MM/DD/YYYY From: 09:00 To: 12:00																																									
	3. Unit Name / Tactical Call / Designators																																										
4. Unit Leader (Name, Call Sign, ICS Position) <your name>, <your call sign>																																											
5. Personnel Roster Assigned																																											
<table><thead><tr><th>Name</th><th>Call Sign</th><th>ICS Position</th><th>Home Base/City</th></tr></thead><tbody><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr></tbody></table>				Name	Call Sign	ICS Position	Home Base/City																																				
Name	Call Sign	ICS Position	Home Base/City																																								
6. ACTIVITY LOG																																											
Major Activities & Events / Occasional Messages (Indicate From / To / Msg# / Msg Text)																																											
Time (24:00)																																											
08:00	Assignment: attend Field Ops Type III Training Class at <location>																																										
08:05	Departed home, odometer 123																																										
08:25	Arrive staging, odometer 134																																										

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

90

Example: Switch To Staging Net

- Stay in vehicle
- Check out of resource net
 - Same three pieces of info: location, odometer, call sign
 - You: "I have arrived at staging, final odometer 134, checking out, W6XRL4"
 - NC: "W6XRL4, roger"
 - Example: Checking out of resource net
- Check into incident/event staging net if there is one
 - You: "Staging net control, W6XRL4, I'm at the parking lot, checking in"
 - NC: "W6XRL4 proceed to staging tent"
 - You: "Roger, W6XRL4"
- Proceed according to instructions

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

91

Sign-In

- Locate and sign-in on ICS-_____
- If one doesn't exist, then:
- Stay in constant contact on the _____ net
- Fill out _____
- Get/attend a _____

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

92

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

94

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved

95

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved

96

Be On Time!

- Notice that the assignment is for 09:00 to 12:00
- Yet, you have arrived at Staging at 08:30. Excellent!
- Take into account all activities that must be completed prior to the start of your assignment
 - Checking in and out of nets takes time
 - Unexpected traffic can cause delays
 - Finding a parking place takes time
 - Going through staging takes time
 - Programming your radio takes time
 - Getting to your assignment takes time
 - Setting up your station, takes time
- Be sure to work backwards from when you need to be on the air and plan your travel, arrival accordingly
 - For most activities arrive at staging no later than 30 minutes before your shift

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

97

97

Staging: Paperwork



- Staging personnel will usually have some paperwork for you to fill out
 - T-card
 - DSW registration, if needed
 - Safety forms, releases, ...
- Be prepared with clip board, pen, flashlight (if dark)
 - Table space may be limited (or non-existent)
- Write neatly

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

98

98

T-Cards

- Cards
 - T-shaped cards slip into slots in rack without falling through
 - First line visible in rack
 - May be plain, lined or pre-printed with specific fields
- Racks
 - Organizes cards for easy viewing
 - May be mounted on wall or flexible canvas for deployment
 - Can be constructed out of CD visor holders



Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

99

99

Personal Radio Programming

- You must be able to program your radio to whatever is listed in the ICS-205 Communications Plan
 - Simplex: Frequency, Tone/Tone-squelch, disable offset
 - Duplex (repeaters): Frequency, Offset, Tone/Tone-squelch
- Make sure you can also turn off other, inappropriate, unnecessary and troublesome features
 - Battery saver, VOX, Yaesu Wires, ...
- Programming manually, on the fly, via the keypad, without hesitation, is the only viable option for real assignments
 - Programming via computer and software is NOT practical in the field
- Take personal responsibility for mastering the operation of your own radio BEFORE you arrive

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

103

103

Staging: Wait Time



- While in staging, monitor the staging net at all times
- Use the time to:
 - Program your radio and verify its operation
 - Familiarize yourself with the information provided
- At some point, you will receive a local, specific assignment
 - The assignment may include a tactical call sign to use
 - Alternatively, net control may assign the tactical call sign
 - Again, if you don't feel safe or ready, you can refuse
- Proceed to local assignment when/as instructed

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

104

104

Review: FCC Call Signs vs. Tactical Call Signs

- FCC is your legal call sign
 - FCC Part 97 requires you to identify yourself with your FCC call sign every 10 minutes (during an extended conversation) and at the end of your communication
 - In EmComm, we also use the FCC call sign at the end of our conversation as a signal that we are finished speaking
- Tactical Call Signs represent a function or location
 - Example: shelter 1, checkpoint 5, rover 3, fire station 2, rover 9, ...
 - They are used when we want to communicate with that function or location, regardless of who the individual happens to be
 - If assigned a tactical call sign, use it like you normally would use a call sign, but end your communication with your FCC call sign

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

105

105

Example: FCC vs. Tactical Call Signs

- Example: Using FCC Call Signs
 - Call and answer using FCC call sign
 - End with FCC call sign
- Example: Using Tactical Call Signs
 - Call and answer using tactical call sign
 - End with FCC call sign
- In both cases, FCC call sign at the end satisfies FCC rules and signals the other person that your communication is finished

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

106

106

Exercise: Local Assignment

- Assume the time is now 08:50
- Staging gives you the following assignment
 - Your assignment is to participate as a student in the classroom
 - Set up your station and check into the student net on 147.525 MHz
 - Your tactical call sign will be “Student <number>”
 - Where <number> is the number you received at the beginning of class
 - Pay attention at all times
 - Volunteer answers to all questions
 - Participate enthusiastically in all exercises
- Update your ICS-214

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

107

107

Example: Updated ICS-214

UNIT LOG ICS 214-SCCo ARES/RACES	1. Incident Name and Activation Number <i>Field Ops Type III Training Class</i> <i>TC-24-02T</i>	2. Operational Period (Date/Time) <i>MM/DD/YYYY</i> <i>MM/DD/YYYY</i> From: <i>09:00</i> To: <i>12:00</i>																																	
	3. Unit Name / Tactical Call / Designators <i>Student <your number></i>																																		
4. Unit Leader (Name, Call Sign, ICS Position) <i><your name>, <your call sign></i>																																			
5. Personnel Roster Assigned																																			
<table><thead><tr><th>Name</th><th>Call Sign</th><th>ICS Position</th><th>Home Base/City</th></tr></thead><tbody><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr></tbody></table>				Name	Call Sign	ICS Position	Home Base/City																												
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)																																			
08:00	Assignment: <i>attend Field Ops Type III Training Class at <location></i>																																		
08:05	Departed home, odometer 123																																		
08:25	Arrive staging, odometer 134																																		
08:50	Assignment: <i>participate as student, tactical call sign "student <your number>"</i>																																		

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

108

108

Orient Yourself to the Assignment Location

- Who we support
 - Government agencies
 - Santa Clara County (Office of Emergency Management, County Fire, ...), city agencies, water districts, ...
 - Non-government organizations ("NGO"s)
 - Hospitals, Red Cross, Salvation Army, CERT, community-and faith-based organizations, general public
- Find out who you should report to
 - Introduce yourself; clarify expectations (in both directions)
 - Verify information/message workflow
- Get a briefing or else find out for yourself
 - Food, water, restroom, telephone, copy machine, comms reqs, ...
 - Determine the best location for your gear
- Set up your station

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

109

109

Assignment Is Not Well Defined?

- If relieving someone, ask for a relief briefing
- Ask your Supervisor and/or Net Control for any clarification
- Discuss with the person in charge at the served agency
 - Query them if they are not sure what you can provide
 - What are their communication needs
 - Who might they need/expect to communicate with
 - What type of information or forms will they need sent or received
 - Inform them of the services you can provide and be clear on what you cannot provide
 - What key information/status are they interested in receiving

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

110

110



Setting Up A Field Station

Where, how, ...

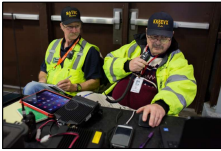
Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

111

111

You may be assigned:


Fixed - Indoors




Fixed - Outdoors




Mobile - Vehicle



Mobile - Bicycle



Pedestrian



Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

112

112

Select an Appropriate Operating Location


- Convenient
 - For the agency
 - Near their command/management staff (where message traffic is)
 - Consider vehicles, pedestrians, access & functional needs, unique facility reqs
 - For you
 - Access to food, water, restrooms, ...
 - Near antenna feedline (or a window where you can run cable outside)
- Quiet (however much is possible)
 - For the agency
 - Your talking on the mic shouldn't interrupt their activities
 - For you
 - Background noise can hinder the ability of others to hear you, or you to hear them
- Comfortable
 - Standing next to a jack on the wall won't work for an 8-hour shift
 - Consider table, chair, pop-up shelter, lighting, weather, extra coax, ...

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

113

113

Organize the Work Space



- Sufficient room (at your table, in your vehicle, in your backpack)
 - Radio equipment (including power source)
 - Computer equipment (situation specific)
 - Forms: Currently in use ICS 205, ICS 214, ICS 309, various message forms
 - Procedures, other documentation
- Clipboards – several can be handy
 - Protect papers from blowing in the wind
 - Hand to message senders so they can write message without taking up space on your table
- Make it safe – especially at night
 - Antenna support is out of the way, can't fall on or poke someone/something
 - Mark or cover cable paths, guy wires/ropes
 - "Caution" tape, gaffer's tape, safety cones can be helpful
 - Lights, beacons or other safety devices as appropriate

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

114



114

Copyright © 2024 Santa Clara County ARES®/RACES. All rights reserved.

35

Ensure Adequate Visibility and Presence

- Make sure people know where you are and what you do
- Deploy “Radio Communications” or other signage
 - As appropriate for the situation
 - See: SCCo ARES/RACES website > Operations > Forms and Signs
- Wear safety vest at all times – even indoors
 - Unless told to wear something else by the served agency
 - It helps people find you in a crowd



Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

115

115

Bring Your Full Go Kit

- Even if you “know” you won’t need it
 - The situation is usual dynamic
 - You may be redirected to a different assignment
- Even if you’ll be using pre-installed equipment
 - Equipment failures
 - Improper installation, configuration
- Each resource type includes specific gear
 - The person requesting the typed resource knows that
 - The person dispatching a typed resource knows that
 - As a typed resource, it’s your responsibility to be properly equipped and bring with you what everyone is expecting

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

116

116

You Represent All Of Us!

- You are an ambassador to the public for SCCo ARES/RACES. How you perform reflects on all amateur radio operators.
- **Your Responsibilities before an event**
 - Learn your radio and other equipment.
 - Keep your go-kit updated (everything working, batteries charged, etc.)
 - You are responsible for staying current with SCCo documentation (frequency lists, procedures, training material, forms, etc.).
 - Verify preparation and that everything is working before arriving at your assignment.
- **Your Responsibilities during an event**
 - You need to be trained and fully prepared to perform the duties assigned.
 - Do not take an assignment unless you have the confidence that you can provide dependable and reliable communication services to a served agency in benefit to the public for real and public service events.

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

117

117

In The Second Part of this Course ...

- We will add to your ICS-211 and ICS-214. So, save them and bring them with you to the second part
- We will continue with our simulated deployment:
 - Equipment for Type III Field Comms
 - Equipment for Type II Field Comms
 - On Site Operations
 - Types of Message Traffic
 - Advanced Techniques
 - Dealing With Problems
 - Demobilization
- We will also review checklists that can be used to keep us on track

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

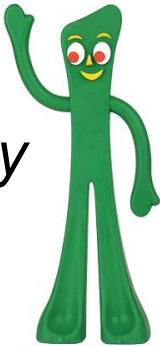
118

118

Whatever the Problem, Remember ...

Semper Gumby

("Always Flexible")



Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

119

119

Final Assignment

Please complete the On-Line Class Evaluation within one week.

To get course credit you need to:

- a) Attend at least 90% of the class
- b) Participate in class
- b) Complete the class evaluation

If you do these, you will get credit for the course.

Copyright (C) 2024 Santa Clara County ARES®/RACES. All rights reserved.

120

120

Online Class Evaluation

Log into <https://www.scc-ares-races.org/activities/events.php>
Click "Submit Class Evaluation" in Events menu

Home

Log Out

Activities Home

SCC ARES/RACES Home

Comments/Bugs

Events

List Events By Date

List Events I Joined

Create a New Event

Modify an Event

Delete an Event

List/Print an Event Roster

Log Event Participation

Submit Class Evaluation

Calendar of Events

Show: ☒ Current events ☐ Past events ☐ Event Descriptions

Field Operations Type III, Part A

Date: 01/06/24Start: 9:00 AMType: County Tr

Prerequisites, Course Description, and Course Materials: Se

Training Net - Message Passing Practice

Date: 01/16/24Start: 8:30 PMType: Other

This is the quarterly Tuesday evening Training Net. The train

121

Thank You!

If you have questions or feedback about this or other training activities, you can join our Training discussion group.
<https://scc-ares-races.groups.io/g/training>
This is a moderated group.

Reminder:
Field Operations Type III Part B & Type II is Saturday 02/03/24
See: <https://www.scc-ares-races.org/activities/events.php>
Class presentation with homework should be posted by Monday 1/29/2024
An email will be sent to those signed up when it is posted.

122

Copyright © 2024 Santa Clara County ARES®/RACES. All rights reserved.

38