



# Year-End Summary

## Review of Changes and Updates to Core Classes



Santa Clara County ARES®/RACES

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## Learning Objectives



By the end of this class, you should be able to:

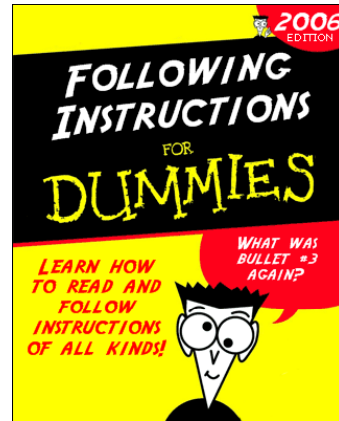
- Explain the county arrival and departure process
- Understand and explain proper message handling techniques
- Explain the changes to the County Frequency Plan
- Understand and implement the changes to SCCo packet operations
- Understand the new packet infrastructure
- Identify the changes to Outpost & PacFORMS
- Explain message tracking rationale and proper message passing techniques

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## Housekeeping

- Pen/pencil & paper
- Cell phones & pagers
- Side conversations
- Avoid spurious transmissions, hidden transmitters, and jamming the instructor....
- Questions
- Breaks
- Restrooms
- In case of emergency



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## Agenda

- Review Field Ops
  - Activation, process, forms, and arrival and departure process.
- Message Handling
- Logging
- Packet
  - Web pages, network structure, network features, client software features, weekly packet check-in process.
- MAC Program
  - Typical Assignments, entrance requirements, tracking and completing the process, earning a qualification, tracking your status, new assignment process, and more.

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## FIELD OPERATIONS

- Preparation
- Assignment and Activation
- Arriving on Scene
- Demobilization
- Message Handling Techniques

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## Preparation



- Do NOT self-activate!!!
  - Don't go anywhere, don't do anything except prepare
- Net Control may or may not make an immediate assignment
  - It may take time for incident command to determine what resources are needed and where they need to be deployed
  - Be patient; pay attention; monitor closely; respond promptly
  - If you are unable to monitor: inform Net Control that you need to leave the net and provide an alternative contact method
- If not immediately activated, use the time wisely to prepare
  - Continue to monitor closely; don't make the whole net wait on you!
  - Check your go-kit, including batteries, food, water, etc.
  - Check your personal situation: home, family
  - Get yourself ready to leave immediately
  - Then, go about your normal business, but continue to monitor
  - When called, answer promptly!

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# Assignment and Activation



- Net Control will call you at some point and offer an assignment
  - Applies to both city and county nets
- If you accept the assignment, you will be activated
  - You don't have to accept any assignment if you don't feel safe
  - You shouldn't accept an assignment until you are immediately ready to leave
- Before leaving home, notify Net Control that you are ready to roll
  - Report street location and last three digits of odometer
- You will be given travel and reporting information
  - Write it down! Often includes important travel restrictions
- While en route, check-in every 15-20 min (or as directed by Net Control)
  - Report your street location and last three digits of odometer
    - e.g. "... location is Highway 101, odometer is 456, this is KE6AGJ"
  - Don't wait for Net Control to call you
    - Net control may be busy with tasks that you may not hear on the net
  - Don't make Net Control ask you for the information
    - You know what's needed (street and odometer) so don't slow down the whole net

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## RACES ASSIGNMENT FORM

### RACES Assignment Form Santa Clara County ARES/RACES

RACES ACTIVATION NUMBER:	
ASSIGNMENT TASK:	
ASSIGNMENT ADDRESS (Street, City):	
THOMAS GUIDE MAP INFO:	Page:      Grid:
LOCAL CONTACT: Name:	
LOCAL CONTACT: Phone Number:	
LOCAL CONTACT: Frequency, PL:	
START TIME:	
LENGTH OF ASSIGNMENT:	
STARTING ODOMETER READING:	

TRAVEL FREQUENCIES (RESOURCES NET)		
REPIATER	FREQUENCY (MHz)	TONE (PL)
AMBIT (Private)	146.115 (4)	100.0
LEWIS TO WASH (Public/Variety)	146.279 (3)	100.0
LEWIS TO MENLO (Public/Variety)	444.625 (4)	110.9

- INSTRUCTIONS:**
1. Before contacting the Santa Clara County RACES Resource Net Control, contact your city EC to verify that you can represent the County in the assignment. If this is an evening event, you should contact your EC before the event to be sure that you have been selected to represent the city.
  2. Before contacting the County Resource Net Control, install your magnetic mount antenna on your vehicle, connect your radio, get your gear in your vehicle, record the last three digits of your odometer at the time shown, and be ready to start your assignment.
  3. Be prepared to provide the highway or street name, and the last three digits of your odometer when asked by the Resource Net Control during check-in and check-out.
  4. After the County Resource Net Control when you have arrived at the assignment location, inform the net control what you have (what your vehicle, PRIMER IN YOUR VEHICLE UNTIL YOU HAVE CONTACTED THE ASSIGNMENT TASKING NET CONTROL, WHEN ASKED PROVIDE THE INSTRUCTIONS). Once you have established radio communication with the assignment tactical net control, follow the instructions that you are given. You should need to return to the County Resource Net to check-out of that net - they know where you are. **CALL** if you are unable to contact the assignment tactical net control, return to the Resource Net for further instructions. **DO NOT LEAVE YOUR VEHICLE UNTIL YOU ARE TOLD TO DO SO.**
  5. When the procedure that you have completed your assignment and are ready to return home.
  6. Use all air time for repeat instructions.

SANTA CLARA COUNTY ARES/RACES - January 27, 2010

[http://www.scc-ares-races.org/operations/forms/RACES\\_Assignment\\_Form.pdf](http://www.scc-ares-races.org/operations/forms/RACES_Assignment_Form.pdf)

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## Arriving on Scene



- When you arrive at your destination, STAY in your vehicle and do the following:
  - Tell the Travel Net you have arrived and you are checking out.
  - Make contact with the Event Net control, announce that you have arrived and are checking IN. They should give you instructions as to where to report next (maybe Staging, maybe another location, etc.)
  - If you CANNOT make contact with Event Net Control, return to the travel Resource Net Control and ask for further instructions.
  - Do all this FROM YOUR VEHICLE using the more powerful mobile radio.
  - Do NOT leave your car and walk to the event – they may not want you there and this violates the County's standards of operation.
- At the Event, check in where instructed
  - ICS 211A Communications Check-In form (ICS 211A-SCCo)
- Follow the instructions of the local team
  - Be patient; you may be asked to wait until others arrive
  - Be courteous; you are there to help, not run the show
- Remain in constant contact with the local tactical net
  - If you need to go off the air, inform Net control
  - If we lose track of you, we must spend time and resources to find you; you have become part of the problem

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## Relief Briefing

Source: "Performance Standards and Best Practices"



- Provides complete and accurate relief briefings, including the following (as appropriate for the situation)
  - Assignment, activation number,
  - Served agency and official in charge, including how they are recognized
    - E.g. vests, hats, badges, etc.
  - Frequencies, tactical calls, net station locations, emergency contact numbers
  - Who to contact regularly
  - Radio, power supply, antenna information
  - Nearest telephone: location and number
  - Location of toilet, water, food, first aid, and other supplies
  - Summary of previous operational period
  - Current status of people, resources, incident (as it relates to communications)
  - Pending issues for next operational period (if any)
  - Introduces replacement to the rest of the team

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## Demobilization



- At the Event, upon relief or at end of assignment, sign OUT where instructed
  - ICS 211A Communications Check-In form (ICS 211A-SCCo)
- Go to your vehicle and do the following from your vehicle using the more powerful mobile radio.
  - First check OUT with the Event Net control.
  - Then check IN on travel Resource Net (be it City or County). Inform them you are proceeding to home.
- Give street location and last three digits of odometer
- Check-in every 15-20 minutes on the way home
  - Give street location (“Highway 101”) and last three digits of odometer
- Check-out when you arrive home
  - Give location (“arrived at home”) and state you are checking out
- You are responsible for maintaining contact with net control at all times

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## MESSAGE HANDLING

- Recommended Process
- Exercise

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## Recommended Transmission Process

- Sender
  - Message #, Date, Time
    - Wait for ACK
  - Severity, Handling, Requests
    - Wait for Ack
  - To, From
    - Wait for ACK
  - Subject
    - Wait for ACK
  - Reference (if any)
    - Wait for ACK
  - Message - 5 words at a time
    - Wait for ACK after each 5 words
  - “End of message”
- Receiver
  - ACK followed by receiver’s message #
  - “This is <call sign>”
  - Fill in Operator Info
- Sender
  - ACK Msg # / Fill in receiver’s message #
  - Fill in Operator Info
  - “This is <call sign>”

MESSAGE FORM		When Receiving <sup>2</sup> Msg.: Sender's msg. #	Msg. #	When Sending Msg. <sup>3</sup> Receiver's msg. #
<small>Use Ballpoint Pen-Press Hard; Print Clearly (See back for instructions)</small>				
Date: <small>annoying</small>	Situation Severity <small>(✓ use)</small> <input type="checkbox"/> EMERGENCY (e.g., Life Threat) <input type="checkbox"/> URGENT (e.g., Property Threat) <input type="checkbox"/> OTHER (All others)	Msg. Handling Order <small>(✓ use)</small> <input type="checkbox"/> IMMEDIATE (All Same as Possible) <input type="checkbox"/> PRIORITY (Less Than One Hour) <input type="checkbox"/> ROUTINE (Less Than One Hour)	Message Requests You To: <input type="checkbox"/> TAKE ACTION <small>(✓ use)</small> <input type="checkbox"/> Yes <input type="checkbox"/> No	Message Requests You To: <input type="checkbox"/> REPLY <small>(✓ use)</small> <input type="checkbox"/> Yes, by <input type="checkbox"/> FOR YOUR INFO. <small>(no action required)</small>
Time: <small>(to base clock)</small>	ICS Position: <small>(required)*</small>	ICS Position: <small>(required)*</small>		
To: Location: <small>(required)*</small>	Name: <small>(optional)</small>	From: Location: <small>(required)*</small>	Name: <small>(optional)</small>	
Telephone #: <small>(optional)</small>		Telephone #: <small>(optional)</small>		
SUBJECT: <sup>10</sup>				
REFERENCE: <small>(e.g., Number of earlier msg.):</small> <sup>11</sup>				
Message: <sup>12</sup> <small>(what, when, where needed; how long; contact name and phone number) KEEP MSG BRIEF</small>				
ACTION TAKEN: <sup>13</sup> <small>(if not for Originator / Recipient) USE SEPARATE MESSAGE FORM IF SENDING REPLY!</small>				
CC: <input type="checkbox"/> Management <input type="checkbox"/> Operations <input type="checkbox"/> Planning <input type="checkbox"/> Logistics <input type="checkbox"/> Finance				
<b>Operator Use Only:</b> <sup>14</sup>				
How Received: <input type="checkbox"/> Sent <input type="checkbox"/> (✓ use)	Operator Call Sign:			
<input type="checkbox"/> Telephone <input type="checkbox"/> Dispatch Center	Operator Name:			
<input type="checkbox"/> EOC Radio <input type="checkbox"/> FAX <input type="checkbox"/> Courier	Date:	Time:		
<input type="checkbox"/> Amateur Radio <input type="checkbox"/> Other				
<small>Outgoing Details: <sup>15</sup> Message Originator: Send the top copy (white) to radio, yellow to PLANNING, retain the pink copy for your reference. Radio: After sending, complete Disposition info., retain white copy for file in radio. Incoming Details: <sup>16</sup> Radio: After receiving, complete Disposition info., route the top copy (white) to the Addresser, yellow to PLANNING, retain pink for file in radio. Addresser: Take appropriate action. SC Co. E.S. Form 211 8/28/2007</small>				

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## Message Form – Message Numbers

- Critically important for tracking messages
- Message #
  - YOUR message number (often pre-stamped to ensure uniqueness)
- When Receiving, Sender’s Message #
  - If you are receiving a message, put the sender’s message number here
- When Sending, Receiver’s Message #
  - If you are sending a message, put the receiver’s message number here

MESSAGE FORM	When Receiving <sup>2</sup> Msg.: Sender's msg. #	Msg. #	When Sending Msg. <sup>3</sup> Receiver's msg. #
<small>Use Ballpoint Pen-Press Hard; Print Clearly (See back for instructions)</small>			

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## Message Handling Prowords

- WORD AFTER “Say again word after...”
- WORD BEFORE “Say again word before...”
- BETWEEN “Say again between... and...”
- ALL AFTER “Say again all after...”
- ALL BEFORE “Say again all before...”
- I SPELL “Alfa, Bravo...”
- FIGURES “Figures Wun, ZEE-row, NINE-er” (= 109)

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## Pronouncing Numerals

0 - zero (ZEE-row)	5 - five (FY-ive)
1 - one (WUN)	6 - six (Sicks)
2 - two (TOOO)	7 - seven (SEV-vin)
3 - three (THUH-ree)	8 - eight (Ate)
4 - four (FOH-wer)	9 - nine (NINE-er)

- Zero is always “zero”; never “oh”
- Decimal point is “decimal” or “point”; never “dot”
- Larger numbers are spoken as a string of single digits: 600 = “six zero zero”
- Often preceded by the word “figures”
  - “Please copy 109” → “Please copy figures one zero niner”
  - “Requesting 16 blankets” → “Requesting figures one six blankets”

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## Sending to More Than One Station

- Announce message
  - “All Stations, All Stations, Stand by to copy one routine message”
- Pick a pacing station
  - “Mountain View, will you be my pacing station?”
  - “Mountain View acknowledges”
- Send message as normal
  - Pacing station provides acknowledgements during message transfer
- Ask for acknowledgements from other stations
  - “I will now poll all stations for acknowledgements. When I call you, respond with your message number or request a fill.”
  - “Los Altos” ....
  - Gives stations an opportunity to ask for “fills” or repeats
  - Confirms which stations received the message

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## Example Message

- Everyone will need a 213 Message Form
- I will send a message to all stations using a pacing station
- Everyone will copy the message
- After the pacing station acknowledges, you can ask for fills
- We'll compare at the end

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## Exercise

Thousands

0/0

What is 3918 equal to?  
Enter the missing number.

3000 + 900 +  + 8

Next Back Exit

Hint



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## FREQUENCY PLAN CHANGES

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## Frequency plan changes

GILROY								
Operational Area	Channel Name	Resource Name	R/S	Frequency	OS	PL	Notes	Reviewed
Gilroy	Tactical-1	Simplex	S	147.480				Nov-2010
Gilroy	Tactical-2	Simplex	S	146.445				Nov-2010
Gilroy	Tactical-CERT	Simplex	R	146.595				Jan-2010
Gilroy	Packet-2M	Simplex	S	144.910				Jan-2010
Gilroy	Packet-440	Simplex	S	433.530				Jan-2010

MORGAN HILL								
Operational Area	Channel Name	Resource Name	R/S	Frequency	OS	PL	Notes	Reviewed
Morgan Hill	Tactical-1	Simplex	S	146.490				Nov-2010
Morgan Hill	Tactical-2	Simplex	S	147.540				Nov-2010
Morgan Hill	Tactical-CERT	Simplex	S	146.550				Nov-2010
Morgan Hill	Packet 2M	Simplex	S	144.910				Jan-10

SANTA CLARA								
Operational Area	Channel Name	Resource Name	R/S	Frequency	OS	PL	Notes	Reviewed
Santa Clara	Tactical	Simplex	S	147.510				Jul-08
Santa Clara	Tactical Alt 1	Simplex	S	147.465				Nov-2010
Santa Clara	Tactical Alt 2	Simplex	S	145.555				Jul-08
Santa Clara	ATV Broadcast	ATV	S	434.000				Jul-08
Santa Clara	Packet 220	Simplex	S	223.660				Jul-08

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## Frequency plan changes

NASA-AMES								
Operational Area	Channel Name	Resource Name	R/S	Frequency	OS	PL	Notes	Reviewed
NASA-Ames	Tactical	Simplex	S	147.420				Nov-2010
NASA-Ames	Tactical Alt 1	Simplex	S	146.445				Nov-2010
NASA-Ames	Tactical Alt 2	Simplex	S	147.585			J	Jul-2008
NASA-Ames	Event 1	Simplex	S	146.505				Nov-2010
NASA-Ames	Event 2	Simplex	S	146.490				Nov-2010
NASA-Ames	Command	NA6MF	R	145.250	-	123.0		Jul-2008
NASA-Ames	Packet 220, Primary	Simplex	S	223.660				Jul-2008
NASA-Ames	Packet 2M, Secondary	Simplex	S	144.910				Jul-2008

SARATOGA								
Operational Area	Channel Name	Resource Name	R/S	Frequency	OS	PL	Notes	Reviewed
Saratoga	Command	K6SA	R	146.655	-	114.8		Jul-08
Saratoga	Tactical Alt	Simplex	S	146.505				Jul-08
Saratoga	Tactical Alt 2	Simplex	S	146.595				Nov-2010
Saratoga	Tactical HF	USB	S	28.400				Jul-08
Saratoga	Packet 220	Simplex	S	223.660				Jul-08

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## Frequency plan changes

STANFORD U								
Operational Area	Channel Name	Resource Name	R/S	Frequency	OS	PL	Notes	Reviewed
Stanford U	Primary	N6BDE	R	440.200	+	123.0		Jul-08
Stanford U	Tactical-1	Simplex	S	146.490		123.0		Jul-08
Stanford U	Tactical-2	Simplex	S	146.550		123.0		Nov-2010
Stanford U	Tactical	W6YX	R	1282.500	-	88.5	O	Jul-08
Stanford U	Tactical	WA6ITV	R	1292.550	-	88.5	P	Jul-08
Stanford U	Packet tcp/ip 1200	W6YX-9	S	145.750				Jul-08
Stanford U	Packet tcp/ip 9600	W6YX-10	S	433.430				Jul-08
Stanford U	Packet 220	Simplex	S	223.660				Jul-08

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

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## LOGGING

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## 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
- Occasional message traffic?
  - Just log it right on the 214
  - No need to use a 309 Comm Log
- Use multiple pages if necessary
- Start it when you receive your assignment
- Turn in to supervisor at end of shift

The image shows a thumbnail of the ICS 214-SCCo form. It is divided into two main sections: 'UNIT LOG' and 'ACTIVITY LOG'. The 'UNIT LOG' section includes fields for Incident Name and Activation Number, Operational Period (Date/Time), and Personnel Roster Assigned. The 'ACTIVITY LOG' section is a table with columns for Time (24:00) and Major Activities & Events / Occasional Messages (From / To / Msg# / Msg Text).

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## Example 214 (individual field communicator at checkpoint)

<b>UNIT LOG</b> ICS 214-SCCo ARES/RACES	1. Incident Name and Activation Number <i>Mockingbird Heights Mummy Race</i> <i>RIP-13-13T</i>		2. Operational Period (Date/Time) <i>10/31/09</i> From: <i>20:00</i> To: <i>24:00</i>	
	3. Unit Name / Tactical Call / Designators <i>Checkpoint 1</i>		4. Unit Leader (Name, Call Sign, ICS Position) <i>Herman Munster, W6XRL4</i>	
<b>5. Personnel Roster Assigned</b>				
Name		Call Sign	ICS Position	Home Base/City
<b>6. ACTIVITY LOG</b>				
Time (24:00)	Major Activities & Events / Occasional Messages (From / To / Msg# / Msg Text)			
<i>20:00</i>	<i>Received assignment; leaving home</i>			
<i>20:30</i>	<i>Arrive at Incident Command Post - Gateman, Goodbury &amp; Graves funeral home</i>			
<i>20:30</i>	<i>Assigned to Checkpoint 1</i>			
<i>20:35</i>	<i>Arrived at Checkpoint 1</i>			

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## ICS 309 – Communications Log

- Our version: ICS 309-SCCo
- Net Control Operators and stations with high message traffic
- Columns help organize key message tracking info
- Does not replace 214
  - EVERYONE fills out a 214
- Turn in to supervisor at end of shift
- Instructions on back

The image shows a thumbnail of the ICS 309-SCCo Communications Log form. It includes fields for Incident Name and Activation Number, Operational Period (Date/Time), Radio Net Name, and Radio Operator. Below these is a table for the Communications Log with columns for Time, FROM (Call Sign/ID, Msg #), TO (Call Sign/ID, Msg #), and Message.

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

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## Example 309 (Resource Net)

Example: Tracking Herman from home to event ICP

<b>COMM Log</b> ICS 309-SCCo ARES/RACES	1. Incident Name and Activation Number <i>Mockingbird Heights Mummy Race</i> <i>RIP-13-13T</i>		2. Operational Period (Date/Time) From: <i>10/31/09</i> To: <i>11/1/09</i> From: <i>20:00</i> To: <i>04:00</i>		
	3. Radio Net Name (for NCOs) or Position/Tactical Call <i>Resource Net</i>		4. Radio Operator (Name, Call Sign) <i>Wolf Man, W6WOOF</i>		
<b>5. COMMUNICATIONS LOG</b>					
Time (24:00)	FROM		TO		Message
	Call Sign/ID	Msg #	Call Sign/ID	Msg #	
...	...				...
<i>23:00</i>	<i>W6XRLA</i>				<i>Leaving home - 1313 Mockingbird Lane ODO 123</i>
<i>23:15</i>			<i>W6XRLA</i>		<i>H&amp;W - Highway 13 - ODO 141</i>
<i>23:30</i>	<i>W6XRLA</i>				<i>Arrived ICP ODO 150; Check-Out</i>

- Optional – instead “NC” or “NCO” for yourself, leave blank
  - Makes it easier to see which messages were from/to field operators

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## Example 309 (Event tactical/message net)

### Example: Herman Munster's net control log

<b>COMM Log</b> ICS 309-SCC ARES/RACES		1. Incident Name and Activation Number <i>Mockingbird Heights Mummy Race</i> <i>RIP-13-13T</i>		2. Operational Period (Date/Time) From: <i>10/31/09 20:00</i> To: <i>11/1/09 04:00</i>	
3. Radio Net Name (for NCOs) or Position/Tactical Call <i>Event Tactical Net</i>			4. Radio Operator (Name, Call Sign) <i>Herman Munster, K6XRL4</i>		
5. COMMUNICATIONS LOG					
Time (24:00)	FROM		TO		Message
	Call Sign/ID	Msg #	Call Sign/ID	Msg #	
00:00	<i>W6DRAC</i>				<i>Check-In - Assigned tactical Blood bank 1 (BBANKI)</i>
00:05			<i>All Checkpoints</i>		<i>First mummy on course; advise when at your station</i>
00:15	<i>BBANKI</i>	<i>107</i>	<i>MH-ICP</i>	<i>204</i>	<i>Blood bank is running short of 0+ blood</i>
00:20	<i>CPI</i>				<i>First mummy passing checkpoint 1</i>

- Use Msg # column for formal message nbrs; otherwise blank
- For tactical messages, you can leave to/from blank if yourself

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## Resource Net Status Tracking with a Form

<b>Resource Net</b> <b>Travel Tracking Tool</b>		1. Incident Name and Activation Number:				2. Operational Period (Date / Time):			
						From: To:			
3. Call Sign	4. Traveler Status (00:00 24-hour -or- ✓)								5. Notes
	Check-In	Depart	H&W-1	H&W-2	H&W-3	H&W-4	Arrive	Check-Out	

- Don't get too hung up on the perfect form, t-card or whatever
  - You should be able to do this from anywhere, with anything
- The task is to track status; method is up to you
  - Who are you tracking? What is their status? When do you need to contact them next?
- Make sure you track status correctly!

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## Interactive Exercise

<b>Resource Net</b> Travel Tracking Tool	1. Incident Name and Activation Number: <i>Classroom Exercise XSC-10-01A</i>				2. Operational Period (Date / Time): From: <i>3/5/10 06:00</i> To: <i>3/5/10 07:00</i>					
<b>3. Call Sign</b>	<b>4. Traveler Status (00:00 24-hour -or- ✓)</b>								<b>5. Notes</b>	
	Check-In	Depart	H&W-1	H&W-2	H&W-3	H&W-4	Arrive	Check-Out		
<i>N6JRC</i>	<i>06:01</i>	<i>06:05</i>	<i>06:20</i>	<i>06:35</i>	<i>06:50</i>					
<i>K6FSH</i>	<i>06:02</i>	✓					<i>06:14</i>	✓		
<i>KF6ZSQ</i>	<i>06:07</i>	✓	<i>06:21</i>	-----	-----	-----	-----	<i>06:36</i>		<i>Requested to leave early</i>
<i>K6FJC</i>	<i>06:08</i>	<i>06:32</i>	<i>06:47</i>							
<i>KD6SOJ</i>	<i>06:15</i>	✓	<i>06:30</i>	<i>06:45</i>			<i>06:49</i>	✓		

- The time is now 06:57
- Who has arrived at the destination?
- Who is still on the net?
- Who is en route?
- Who is next up for a health & welfare check? And when?

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## PACKET

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## Disclaimer

- Just about everything we do with packet in the county has changed during 2010
- Functionality and reliability have been improved
- That means there is much more to learn
- Even more improvements are coming
- This section can only make you aware of the changes; it cannot replace 6+ hours of training plus practice
- Packet users are strongly advised to keep up with the regularly scheduled packet classes

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## Main Packet Page

- Network Update Notices
  - Stay up to date!
- Frequencies & BBS info
- Presentations
- Configuration & Set-up
- Operating & Usage
- Client Software
  - Outpost / PacFORMS
- User Group & Tech Supp
  - Yahoo Group: scc-packet

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

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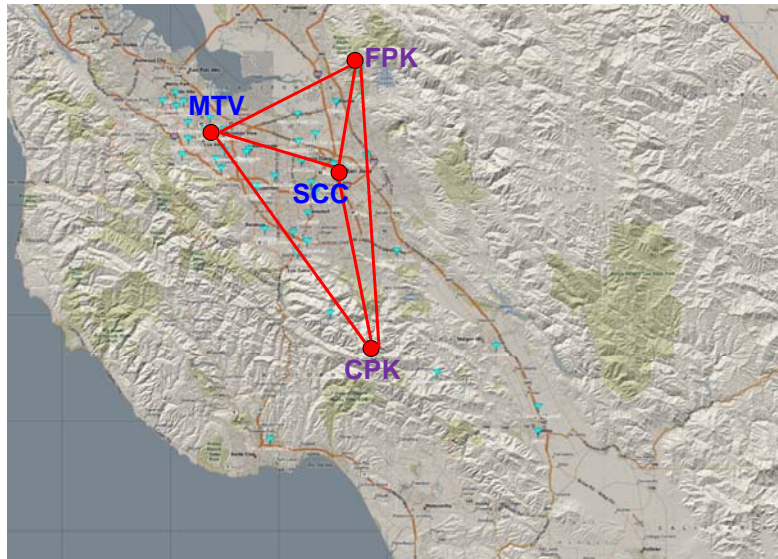
## Packet Network Infrastructure Changes

	Before 2010	2010 and beyond
BBS	<ul style="list-style-type: none"> <li>• Single BBS</li> <li>• SW: DOS, AA4RE, no supp.</li> <li>• HW: 386; DOS; custom</li> </ul>	<ul style="list-style-type: none"> <li>• 4 BBSs (2 implemented so far)</li> <li>• SW: Linux, JNOS, active devel.</li> <li>• HW: 12v, off-the-shelf</li> </ul>
Frequencies	<ul style="list-style-type: none"> <li>• 3 access frequencies shared by 25+ agencies</li> </ul>	<ul style="list-style-type: none"> <li>• Access: 2m, 220 per BBS</li> <li>• Backbone: 440</li> </ul>
Performance	<ul style="list-style-type: none"> <li>• Poor</li> <li>• County EOC bottleneck</li> <li>• Use of digis adds traffic</li> </ul>	<ul style="list-style-type: none"> <li>• Improved</li> <li>• First 7 agencies moved to new structure have excellent perf.</li> </ul>
RF Coverage	<ul style="list-style-type: none"> <li>• Poor</li> <li>• Digi on Crystal Peak not dependable</li> </ul>	<ul style="list-style-type: none"> <li>• Improved</li> <li>• Digis upgraded to BBSs with better antennas, filters (early 2011)</li> </ul>
Redundancy	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• Excellent</li> <li>• Each agency will be able to reach at least 2 BBSs</li> </ul>

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## BBS Locations



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## BBS Assignments

- Each city/agency is assigned a primary BBS
  - City/agency EOC and all other users within that city/agency should use that BBS
  - Example:
    - MTV is primary for: Los Altos, Los Altos Hills, Mountain View, NASA/Ames, Palo Alto, Palo Alto Red Cross, Stanford
    - Any sites (EOCs, fire stations, parks, shelters, etc.) or individuals in those cities use the MTV BBS as their primary
- Assignments based on RF propagation study

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## Backup Connectivity

- Each agency also has a backup BBS
- Normal operations:
  - Each agency connects to their primary BBS
- If a particular BBS fails:
  - Agencies on failed BBS connect to their backup BBS
  - Agencies are evenly distributed across backup BBSs
    - Ex: if MTV fails, there will be three other BBSs. So, approximately 1/3 would connect to each of the other BBSs.

Note: Until Crystal Peak and/or Frazier Peak is deployed, some agencies can only reach the primary.

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## BBS & Freq Page

- BBS info
  - Name
  - Call sign
  - Access frequencies
  - Location
  - Comments
- BBS Assignments & Routing
  - Agency
  - Prefix (used for many purposes)
  - Primary & Secondary BBS
- Other Nodes
  - Info about other systems in the area

**Santa Clara County OES  
ARES/RACES Packet Frequencies and BBS Info**  
Home | Operations | Packet | Training and Events | Reference Info | December 4, 2010

This list was compiled from information sent to the Webmaster, Phil Henderson. If there are corrections or additions, please E-Mail them to [ph@jcsa.com](mailto:ph@jcsa.com).

**Santa Clara County Backbone BBS Nodes**

Backbone BBSs provide routing and other services to all agencies in the county.

BBS Name	Call Sign	On Access	1.25m Access	Location	Comments
SCC	WBUSG-1	144.910 (1.1)	223.820	San Jose	PNOS, 247, LPS
MTV	XBNFT-1	144.310	223.840	Mountain View	PNOS, 247, LPS
TRC (1.2)	TRC (1.2)	144.890	223.790	Heat County	PNOS, 247, LPS
TRC (1.2)	TRC (1.2)	144.790	TRC	San Jose County	PNOS, 247, LPS

**Comments:** The Santa Clara County ARES/RACES Packet Committee manages the county packet backbone nodes. Send email to [ph@jcsa.com](mailto:ph@jcsa.com) if you are unable to log in.

**Note:**  
(1.1) The On access frequency for WBUSG-1 is temporarily remaining on its original frequency to ease user transfer to the new backbone nodes. This frequency will change to 144.900 as soon as practical.  
(1.2) Two additional backbone nodes are currently being tested and will be added in a future phase of deployment.

**BBS Assignments and Message Routing**

**Login Assignments:**

- All users: Connect to the primary BBS for your agency. If the primary is down, connect to the secondary.
- Individual ARES/RACES users: Log in with your POC call sign.
- Cities and agencies: Log in with your designated tactical call. Consult your EC if you do not know your tactical call. Agencies within the county may define additional tactical calls beginning with their assigned prefix.

**Message Routing:**

- Default: Messages sent to the primary tactical call for each agency are automatically routed to the primary BBS for that agency. Messages sent to other tactical calls will also be routed, according to the prefixes below, to the primary BBS for that agency.
  - Example: Messages sent to "CUFaux" will automatically be routed to CUFAux@SCC.
- To Override: In case the primary BBS is down, you can override by adding "CC" followed by the alternate BBS name.
  - Example: If SCC is down, send to: CUFAux@MTV

Agency	Prefix	Primary BBS (1.1)	Secondary BBS (1.2)
<b>Santa Clara County Cities and Agencies</b>			
1 Carmichael, City of	CBL	SCC (WBUSG-1)	MTV (XBNFT-1)
2 County Communications Center	CCC	SCC (WBUSG-1)	MTV (XBNFT-1)
3 Cupertino, City of	CUP	SCC (WBUSG-1)	MTV (XBNFT-1)
4 Gilroy, City of	GRY	SCC (WBUSG-1)	MTV (XBNFT-1)
5 Livermore Region	LVR	SCC (WBUSG-1)	MTV (XBNFT-1)
6 Los Altos, City of	LCS	MTV (XBNFT-1)	SCC (WBUSG-1)
7 Los Altos Hills, Town of	LAH	MTV (XBNFT-1)	SCC (WBUSG-1)
8 Los Gatos, City of	LGT	SCC (WBUSG-1)	MTV (XBNFT-1)
9 Los Gatos Red Cross	LGR	SCC (WBUSG-1)	MTV (XBNFT-1)
10 Milpitas, City of	MILP	SCC (WBUSG-1)	MTV (XBNFT-1)

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## Addressing a Message

To Send to:	Format	Example	Note
Self	<call sign> -or- <call-sign>@<bbs-name>	N6MEF	
User on same BBS	<call sign> -or- <call-sign>@<bbs-name>	N6JRC	
User on different BBS	<call-sign>@<bbs-name>	KA3L@SCC	1
Agency on Pri BBS	<tactical-call>	XSCEOC	2
Agency on BkUp BBS	<tactical-call>@<backup-bbs-name>	XSCEOC@MTV	
Multiple addresses	<address>;<address>	N6JRC;KA3L@SCC	3

**Notes:**

- 1) BBS names are listed on the packet frequency page. Individuals are requested to use the same BBS that is assigned to their city/agency
- 2) City/county tactical calls are auto-routed to their primary BBS
  - o ...@<bbs-name> is o.k. but not required)
- 3) Outpost uses the BBS command "SC" to "cc" the additional addressees

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## Agency-specific Tactical Calls

- Agencies can request tactical calls for packet
  - As many as you need; must start with agency tactical prefix
  - Example usage: packet operators deployed to shelter, school, ...
  - Instructions: <http://www.scc-ares-races.org/packet.html>
    - "How to Request Tactical Calls"
- Tactical calls also added for Coastal Region and all surrounding counties
- Updates occur approximately once per quarter
- Once added to BBSs:
  - Packet users can log in with city tactical call signs
  - Messages automatically routed to agency's primary BBS
    - Example: Messages to LOSxxx routed to LOSxxx@MTV
  - Auto-routing can be overridden by specifying desired BBS (@bbsname)

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## Packet Comms Outside the County

- Tactical calls created for:
  - OES Coastal Region (located in Oakland)
  - Surrounding counties: Alameda, Contra Costa, Marin, Monterey, San Benito, San Francisco, San Mateo, Santa Cruz
- Many can reach MTV or SCC
- Crystal Peak enhancements should fill in the remaining gaps

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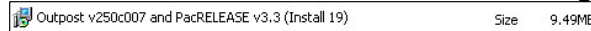
## Integrated Installer



- Installs Outpost & PacFORMS
  - Places OutPost in a separate directory (SCCo Packet) so it doesn't impact existing Outpost
- Includes standard TNC and county BBS setups
- Includes all standard county user settings
- Checking version info
  - Start > Programs > PacFORMS > SCCo Version

1. Install:	v19
2. Outpost:	v250c007
3. PacRELEASE:	v3.3

- Start > Control Panel > Add or Remove Programs



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## Standard TNC Settings

- Required when using the county packet net
- Reduces traffic by 80% vs. default settings
- County installer includes for common TNCs
  - Kantronics KPC-3, KPC-3+, Timewave PK-96, Kenwood TM-D710
- Consult documentation for other (AGWPE)
  - <http://www.scc-ares-races.org/packet.html>

### Configuration and Set-up Instructions

- [Standard Outpost Configuration Instructions - 09/11/2010 \(PDF - 608 KB\)](#)
- [Standard TNC Parameter Settings - 05/05/2010 \(PDF - 456 KB\)](#)
- [INOS Settings for Outpost - 02/24/2010 \(PDF - 69 KB\)](#)

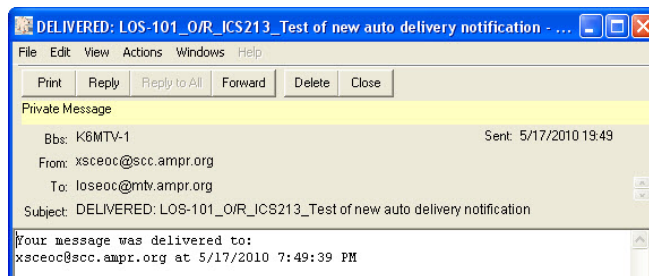
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## Auto-Delivery Receipts



- Sending
  - When you receive a message, Outpost generates the delivery receipt
  - Receipt is sent next time you Send/Receive (not visible in Out Tray)
- Receiving
  - Subject line: “DELIVERED: <your original subject line>”
  - Message contents: the date and time delivered



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## SCCo Bulletin Areas



- Santa Clara County ARES/RACES uses only two bulletin areas
  - perm
    - Used for bulletins which don't expire
    - Examples: standard county procedures
  - 30days
    - Bulletins posted here automatically expire 30 days after date posted
    - Examples: Monday & Tuesday night check-in lists, drills, events, incidents
- County installer enables both bulletin areas

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## Testing and Experimenting with Bulletins

- **DO NOT** send test or “unofficial” messages to the county bulletin areas: “perm” and “30days”
  - Only authorized users should post to “perm” and “30days”
- **DO** test and experiment with the “1daytest” bulletin area

• To retrieve:

**Don't forget to remove it later!**

• To send:

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## Automated Standard Subject Line

- County standard Subject: line
  - [Originator Msg #]\_[Severity]/[Handling-Order]\_[Subject]
  - Documented: <http://www.scc-ares-races.org/packet.html>

**Operating and Usage Instructions**

- [How to Send a Packet Message with Outpost - 01/20/2010 \(PDF - 76 K\)](#)
- [Standard Format for Packet Message Subject Line - 09/08/2010 \(PDF - 85 KB\)](#)
- [Weekly Packet Check-In Procedure - 11/18/2010 \(PDF - 90 KB\)](#)

- Manual entry required for Outpost text messages
- PacFORMS automatically populates in Outpost subject line with info from the form

Bbs:	W6XSC-1
From:	XSC EOC
To:	LOSEOC
Subject:	XSC123_O/R_IC9213_Test Message Subject Line

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## Consistent PacFORMS Headers

### ICS-213 Message Form

EOC MESSAGE FORM			
PacFORMS adaption of SCCo ICS Form 213 (Ver. 2.2.3) - PacRELEASE 3.3 By the Henderson, KRZSQ (This form works with Outpost/ODirect for Automatic ASCII text save) For instructions using this form <a href="#">Click Here.</a>			
1a) Date (MM/DD/YY) 12/04/2010	4) Situation Severity (Select One) <input type="radio"/> EMERGENCY (e.g., Life Threat) <input type="radio"/> URGENT (e.g., Property Threat) <input type="radio"/> OTHER (All Others)	3) When Receiving Msg.: Sender's msg. # <input type="text"/> <input type="checkbox"/> Unlock msg. nos. 2 & 3	2) When Sending Msg.: Receiving msg. # <input type="text"/> <b>RED Areas Required</b>
1b) Time (24 hr. time) 1427 0001 to 2400 2:00 PM = (2-12)+1400 Hrs.	5) Msg. Handling Order (Select One) <input type="radio"/> IMMEDIATE (As Soon as Possible) <input type="radio"/> PRIORITY (Less Than One Hour) <input type="radio"/> ROUTINE (More Than One Hour)	6) Message Requests You to: TAKE ACTION (Check one) <input type="radio"/> Yes <input type="radio"/> No REPLY (Check one) <input type="radio"/> Yes, by <input type="text"/> <input type="radio"/> No FOR YOUR INFO. (No action required)	

### Logistics Request

Logistics Request			
< Items in RED are required >			
TO: LOGISTICS	A) When Receiving Msg.: Sender's Msg. No. <input type="text"/>	B) Msg. Number <input type="text"/>	C) When Sending Msg.: Receiving Msg. No. <input type="text"/>
<input type="checkbox"/> Unlock msg. nos. A) & C)			
D) Situation Severity (Select One) <input type="radio"/> EMERGENCY (e.g., Life Threat) <input type="radio"/> URGENT (e.g., Property Threat) <input type="radio"/> OTHER (All Others)	E) Msg. Handling Order (Select One) <input type="radio"/> IMMEDIATE (As Soon as Possible) <input type="radio"/> PRIORITY (Less Than One Hour) <input type="radio"/> ROUTINE (More Than One Hour)	F) Message Requests You to: REPLY (Check one) <input type="radio"/> Yes, by <input type="text"/> <input type="radio"/> No	

### City Scan – Flash Report

City Scan – Flash Report			
< Items in RED are required >			
TO: PLANNING	A) When Receiving Msg.: Sender's Msg. No. <input type="text"/>	B) Msg. Number <input type="text"/>	C) When Sending Msg.: Receiving Msg. No. <input type="text"/>
<input type="checkbox"/> Unlock msg. nos. A) & C)			
D) Situation Severity (Select One) <input type="radio"/> EMERGENCY (e.g., Life Threat) <input type="radio"/> URGENT (e.g., Property Threat) <input type="radio"/> OTHER (All Others)	E) Msg. Handling Order (Select One) <input type="radio"/> IMMEDIATE (As Soon as Possible) <input type="radio"/> PRIORITY (Less Than One Hour) <input type="radio"/> ROUTINE (More Than One Hour)	F) Message Requests You to: REPLY (Check one) <input type="radio"/> Yes, by <input type="text"/> <input type="radio"/> No	

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## Inbound Message Numbering

- Some agencies number each incoming message with their own number
- ICS 213-SCCo has a place for Sender's vs. Recipient's message number
- Voice messaging procedures have used this for years
- Outpost & PacFORMS now perform this function automatically
- If configured, incoming message numbers appear:
  - In the message list for each folder (Ex. In Tray)
  - On the message detail when viewed on screen or when printed
  - In the proper box on a PacFORMS message
  - In auto-acknowledgements
  - In the ICS 309 Communications Log

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## Inbound Message Numbering

### Message Folder Listings

In Tray							
U	Type	From	To	BBS	Local ID	Subject	Date/Time   Size
		snyeoc@...	n6mef@...	K6MTV-1		DELIVERED: Check-In 10/4: N6MEF - Michael...	10/4/2010 19:36   121
		loseoc@...	N6MEF	K6MTV-1	MEF122P	LOS987_O/R_Message Numbering Test	10/8/2010 09:54   23

### Message Details Display

Private Message

Bbs: K6MTV-1 Sent: 10/8/2010 09:54

From: loseoc@mtv.ampr.org Local Msg ID: MEF122P

To: N6MEF

Subject: LOS987\_O/R\_Message Numbering Test

This is a test message.

### PacFORMS

2.) When Receiving Msg.:  
Senders's msg. #

LOS988

Unlock msg. nos. 2 & 3

Msg. #

MEF123P

RED Areas Required

### Printed Message

From: loseoc@mtv.ampr.org

To: N6MEF

Sent: 10/8/2010 09:54

Subject: LOS987\_O/R\_Message Numbering Test

Local Msg ID: MEF122P

This is a test message.

### Auto-Acknowledgement from Recipient

Your message was delivered to:  
snyeoc@scc.ampr.org at 10/4/2010 7:29:35 PM  
snyeoc@scc.ampr.org assigned Msg ID: SNY132P

- Instructions: <http://www.scc-ares-races.org/packet.html>
  - “How to Configure Outpost for Inbound Message Numbering”

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## ICS-309 Communications Log

- Outpost now produces an ICS 309 communications log
- The log can be automated to print on a regular interval
- Configuration Options:
  - Reporting period, content, sort, layout, output destination
- Instructions: <http://www.scc-ares-races.org/packet.html>
  - “How to Configure Outpost for Automated ICS-309 Printing”

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## ICS 309 Communications Log

<b>COMMUNICATIONS LOG</b>		TASK # <b>MEF-10-10-01</b>	Date/Time Prepared: <b>10/08/10 09:37</b>		
Operational Period: <b>10/01/10 00:00 to 10/08/10 23:59</b>		Task Name: <b>Example Log Output</b>			
Radio Operator Name: <b>Michael Fox</b>			Station ID: <b>N6MEF</b>		
<b>LOG</b>					
Time	From	To	Msg ID	Local ID	Subject
10/04 16:44	N6MEF	SNYEEOC			Check-In 10/4; N6MEF - Michael - Los Altos - via MTV
10/05 19:06	K6FCW@MTV....	N6MEF@SCC....		MEF120P	RE: Packet Tactical Call Signs 10-Sep-2010
10/05 19:07	N6MEF@SCC....	K6FCW@MTV....			DELIVERED: RE: Packet Tactical Call Signs 10-Sep-2010
10/05 19:08	N6MEF@MTV	K6FCW@MTV....			RE: Packet Tactical Call Signs 10-Sep-2010
10/08 09:29	N6MEF	K6FSH	MEF401		MEF401: new feature test
10/08 09:29	SNYEEOC@SCC...	N6MEF@MTV....			DELIVERED: Check-In 10/4; N6MEF - Michael - Los Altos - via MTV
10/08 09:32	N6MEF	K6FSH	MEF402		MEF402_O/R_Testing New Feature
10/08 09:36	N6MEF	K6FSH	MEF403		MEF403_O/R_IC213_Test of PacFORMS message number

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## Weekly Packet Check-In Procedure

- Weekly check-ins have migrated to the county network
- Connect to the primary BBS assigned to your city/agency
- Address your message to: SNYEEOC
  - A new tactical call will soon be added for weekly check-ins; stay tuned
- Use a different PacFORM each week as a way to test and become familiar with them

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## Upcoming Enhancements

- Add next two BBSs:
  - Crystal Peak – December install; January test
  - Frazier Peak – early 2011
- Additional services from the network
  - E-mail gateway: exchange messages with Internet e-mail addresses (early 2011, restrictions likely)
  - AMPR.org gateway: exchange messages and bulletins with other ampr.org (net 44) BBSs around the world (early 2011)
  - BBS gateway: exchange messages and bulletins with traditional amateur BBS network (maybe)
- Additional client software features (Outpost/PacFORMS)
  - Variety of ease of use enhancements

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## MAC PROGRAM

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## What is a Mutual Aid Communicator?

- Amateur radio operator (any license class)
- Willing to be deployed outside their own city
  - Typical shift is 8 hrs; be prepared for 12 hrs
- Meets basic/minimum requirements
  - Administrative
  - Training
  - Equipment
  - Experience
  - Performance
  - Ongoing Participation
- Nominated by EC and approved by CRO

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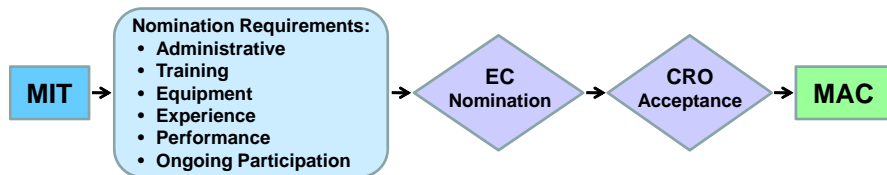
## Typical MAC Assignments

- Field Communicator
  - Field checkpoints, CERT team communicator, damage surveys, crowd observation and information assistance, shelters, ...
- Net Control Operator
  - County EOC, city EOC, tactical nets, staging area nets, ...
- Packet Operator
  - County EOC, city EOC, shelter, staging area, ...
- Shadow Communicator
  - Public event staff, city or county staff, hospital staff, ...
- HF Operator (TBD)
  - Pass traffic out of the county, remote locations, ...

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## MAC Program Entrance Requirements



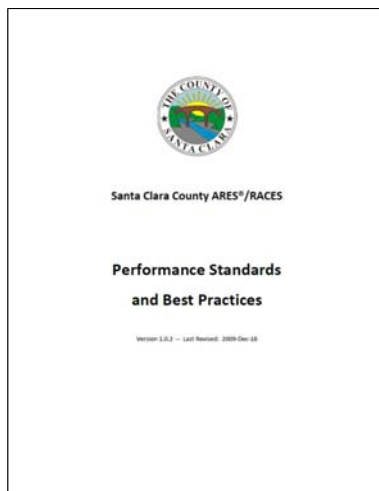
- Candidate is designated “MAC in Training” (MIT) by EC
- Candidate completes nomination requirements
- Emergency Coordinator nominates candidate when ready
- County RACES Chief Radio Officer can accept or decline
- Once accepted, the individual becomes a MAC

Details in the MAC Program Handbook: <http://www.scc-ares-races.org/mac>

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## County Performance Standards



- What are they?
  - An objective set of performance standards for emergency communicators
- Where did they come from?
  - Distilled from county training courses and best practices
- How are they used?
  - Recommended for ALL!
  - Required minimum standard for MACs
  - Objective standard for MAC evals

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## Tracking & Completing the Process

**MAC Candidate Record**      **MAC Program Entrance Requirements**

Name: \_\_\_\_\_ Call Sign: \_\_\_\_\_

For specifics of each of these requirements, consult the MAC Program Handbook.

EC / AEC			Entrance Requirements
Date	Call Sign	Initials	
			<b>Administrative</b>
			18 years of age or older
			Valid Technician (class or higher Amateur Radio license
			Valid California Driver's license or State-issued ID card
			Reliable transportation
			Has read "SCCA ARES/RACES MAC Program Handbook"
			Has read "SCCA ARES/RACES Part 97.303, B Best Practices"
			Registered with Santa Clara County as Disaster Service Worker
			Completed/Agree to complete Livescan and background check
			<b>Training</b>
			Santa Clara County Training
			Intro to Emergency Communications (or equivalent)
			Fundamentals of Emergency Comms (or equivalent)
			<b>FEMA Training</b>
			ICS-100 (I-100 (or city-approved equivalent)
			ICS-200 (I-200 (or city-approved equivalent)
			ICS-300 (I-300 (or city-approved equivalent)
			<b>Equipment</b>
			12-hour Certs etc
			12-hour Go Kit
			Committed personal radio familiarity per MAC handbook
			<b>Experience (Recommended)</b>
			Regular weekly SPECS or STICS and city net check-ins
			At least three quarters duty
			At least two public service events
			<b>Performance</b>
			Maturity and experience to perform according to "SCCA ARES/RACES Performance Standards and Best Practices"
			<b>Ongoing Participation</b>
			Agree to minimum training and participation requirements

Usage:

- It is the candidate's responsibility to maintain this record
- This document functions as a confirmation of completion of the entrance requirements
- Bring this document with you when you meet with your EC or designated AEC
- Have your EC or designated AEC sign-off on each line item completed
- Retain this document as your personal record in case of error or loss of county records

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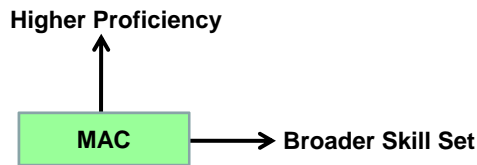
- Candidate
  - Formulates plan with help of EC
- EC
  - Designates candidate as MIT
  - Coaches and facilitates
- Candidate
  - Manages own progress
  - Completes "MAC Candidate Record"
  - Submits form to CRO
- EC
  - Nominates candidate to CRO
- CRO
  - Reviews nomination with staff
  - Notifies candidate of acceptance

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

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## Becoming a MAC is Just the Beginning

- Opportunities to learn
  - Different cities + different served agencies + MAC drills
  - = higher proficiency + broader skill set



- Existing pool of MACs has widely varying skill sets
  - This occurs naturally, based on individual interest
  - That's part of what makes it fun

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## How to Use Widely Varying Skill Sets?

Assignment Process:

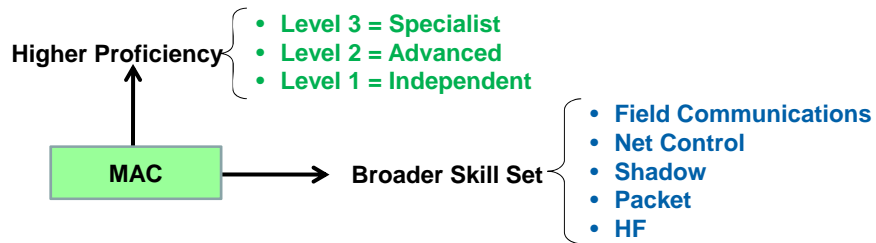


- Requesting resources
  - What types of resources are available to request?
  - How does served agency request specific type of resource?
  - When a resource arrives, what capabilities does he/she have?
- Assigning resources
  - How many MACs do we have that can do X?
  - How does net control know which MAC has which capabilities?
- Previously used individual knowledge to fill the gap
  - Problem: Who can know everyone’s skill level? (hint: no one!)

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## MAC Qualification Program Structure

- Take what we already do and divide it into meaningful and useful “buckets” of capabilities
- Structure:



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### MAC Qualifications at a Glance

← Broad Skill Set →

Expertise	Skill Areas				
	Field Comms	Net Control	Shadow	Packet	HF (future)
3- Specialist	Field Comm 3	Net Control 3	Shadow 3	Packet 3	HF 3
2- Advanced	Field Comm 2	Net Control 2	Shadow 2	Packet 2	HF 2
1- Independent	Field Comm 1	Net Control 1	Shadow 1	Packet 1	HF 1
Basic	Mutual Aid Communicator				

Higher Proficiency ↑

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### Earning a Qualification is Straight Forward

- Candidate completes requirements for the skill level
  - Prerequisites, training, participation
- Candidate undergoes a standardized evaluation
  - Conducted during drills, approved public service events, ...
  - Candidate simply operates their assignment normally
  - Evaluator observes performance vs. the Performance Standards
  - No “gimmies” and no “gotchas”
  - If passed, qualification is recorded in county database
  - If not, attend more training, get more experience, try again

```

            graph LR
            A[Skill Level Requirements] --> B{Pass Evaluation?}
            B -- Y --> C[Qualified]
            B -- N --> A
            
```

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## View and Track your MAC Status Online

- View color coded qualification status summary
- Drill down to individual details in each qualification
- Print qualification credentials
- ECs: simplified reports
  - Rosters include qualifications
  - List of MACs by Qual Area
- County DEC/ADECs
  - DSW/Qual dispatch report
  - List of MACs by Qual Area

	F3	H3	N3	P3	S3
E2	F2	H2	N2	P2	S2
E1	F1	H1	N1	P1	S1

Mutual Aid Communicator (MAC)

MAC	Field Communicator	RF Operator	Net Control Operator	Packet Operator	Shadow Communicator
E1	F1	H1	N1	P1	S1

Color Key:  
 Green: Completed  
 Blue: Partially Completed  
 Yellow: Portions about to expire  
 Gray: Not Started

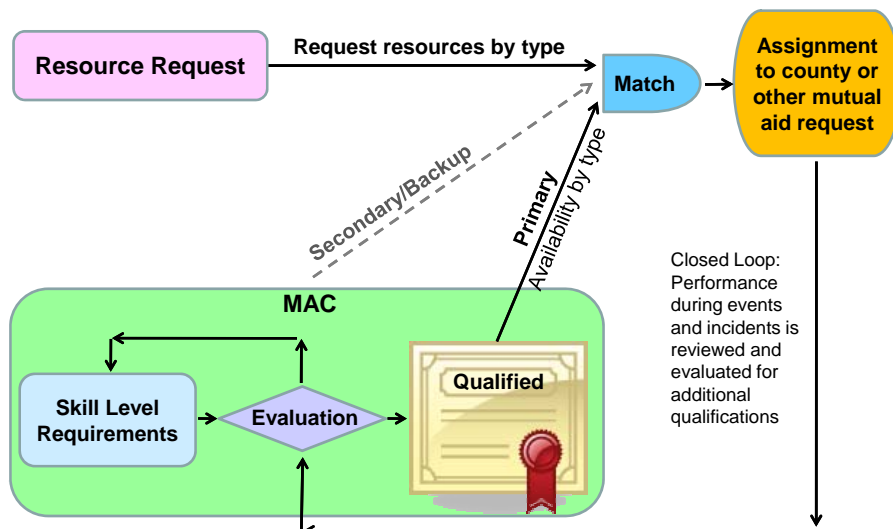
**N6MEF Michael Fox**  
 E1 SEP 2011 F2 SEP 2011 N2 SEP 2011 P2 SEP 2011 S2 SEP 2011  
**MUTUAL AID COMMUNICATOR**

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

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## Migrate to New MAC Assignment Process

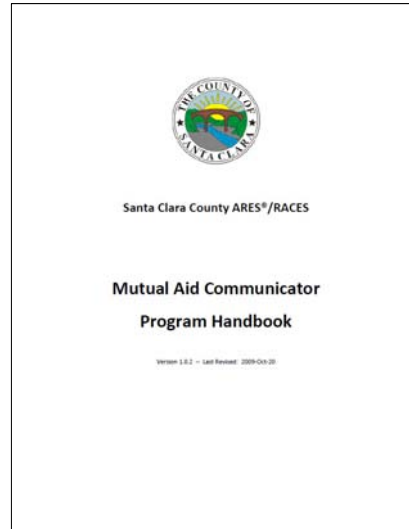


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## More Info in the MAC Program Handbook

- Table of Contents:
- Performance Standards
- How to Become a MAC
- Roles and Responsibilities
- Resource Assignment & Typing
- Advanced Qualifications
- Evaluations
- Recognition
- Advanced Qualification Definitions
- MAC Response Teams
- ICS and NIMS
- Records Management
- Program Management



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