




Net Control

for Disaster Communications

Level 1



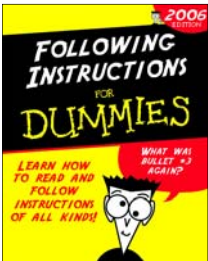
Santa Clara County ARES®/RACES

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Housekeeping

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



Remember This?

👉


Lots of talking, lots of emotion

NO Communication!

Today's Agenda


- Santa Clara County Nets
- Role of the Net Control Operator
- Attributes of a Good Net Control Operator
- Record Keeping and Logging
- Equipment for Net Control
- Operating a Net
 - Example: Operating a Level 1 Resource Net
 - Exercise
- Example: Operating a Resource Net for a drill or event
 - Exercise

Learning Objectives




At the end of this class, you will be able to:

- Understand how critical the net control operator is to effective communication for the entire net
- Explain the purpose and usage of county nets
- Understand net control operator qualification levels
- Explain proper net control operator attributes
- Perform record keeping and logging properly
- Understand the equipment required for net controls
- Operate a Level 1 Resource Net
- Operate a Resource Net for a drill or event



SANTA CLARA COUNTY NETS

What is an Amateur Radio Net?



- An Amateur Radio Net exists whenever 3 or more operators are in simultaneous contact with each other for the purpose of exchanging information or passing informal or official traffic.
- Open Net
 - Stations call each other directly to pass traffic
- Directed Net
 - Stations call only net control directly, go direct to other stations only with net control permission

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Tactical Nets (including City/Agency Nets)

- Established when and where needed
 - Staging areas, checkpoints, rovers, shadows
 - Each city has one or more tactical frequencies; one is for main city net
- Each city activates their city net as soon as possible
 - Handle local resource check-ins, notifications
 - Check-in here to be released to the county
- Localized, often informal messages
 - “checkpoint 3 reports Dead Man’s creek at 1 foot below flood level ...”
 - “rover 2 reports all runners have now passed rest stop 4 ...”
- May also include formal messages
 - Ex. Resource request from school to city
- Usually a directed net, but may start up as an informal net
- Frequencies (<http://www.scc-ares-races.org/operations.html>)
 - May also be assigned at time of activation

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Resource Net

- Usually the first net activated at the county level
- Directed net
- Three levels of operation
 - Level 1: Information gathering (initial damage reports)
 - Earthquake Modified Mercalli (Mike-Mike) reports; flood levels; power; etc.
 - Level 2: City EOC check-ins and referral to city tactical nets
 - City EOCs check-in and announce status; individuals referred to city nets
 - Level 3: Coordination of mutual aid; tracking county resources
 - Mobilization (resource check-ins, activations and assignments)
 - Location/Travel tracking (you MUST be in contact while traveling)
 - Demobilization (resource release, tracking during return home)
- Frequencies (<http://www.scc-ares-races.org/operations.html>)
 - Primary AA6BT 146.115 (+) 100.0
 - North W6ASH 145.270 (-) 100.0
 - South N6NAC 444.625 (+) 110.9 (South of 101 & 85; South San Jose)

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Santa Clara County Emergency Nets

- Command Net
 - Official traffic between Operational Area command staff and EOCs
 - Not intended for field use
 - Primary: WB6ZVW 442.500 (+) 100.0
- Hospital Net
 - Official traffic between hospitals and County Dept. of Public Health
 - N6NFI - 145.230 (-) 100.0
- EOC-to-EOC Net
 - Commercial radio may be used directly by EOC personnel
 - Typically for command and control and informal messages
 - May be active before hams arrive on scene
 - You will likely be interacting with non-hams who are untrained in radio or emergency communications

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Message Net

- Usually the second net activated at the county level
- Directed net
- Official message traffic between city/agency EOCs and county EOCs
 - Typically between cities/agencies and the County
 - Sometime between cities/agencies
- Formal messages on ICS 213-SCCo message form
- Some informal messages
- All messages and responses numbered and tracked
- Frequencies (<http://www.scc-ares-races.org/operations.html>)
 - Primary W6TI 147.360 (+) 110.9
 - Alternate WB6OQS 146.760 (-) 151.4
 - Alternate K6FB 145.450 (-) 100.0

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Santa Clara County Emergency Nets

- Resource Net for a drill or event
 - Simplified version of full Resource Net Level 3
 - Used for pre-planned drills and public service events
- HF Net
 - Interface with ACS coastal region and state
 - Interface with NTS
- Others
 - County radio room staff support a variety of other nets
 - Control 10, region, satellite,


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Net Control Qualifications

ROLE OF THE NET CONTROL OP

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Good operators are made, not born!

KEY ATTRIBUTES OF A NET CONTROL OPERATOR

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Net Control 1 Capabilities, Assignments N1

- Capabilities and services offered
 - Fully independent operator
 - Capable of basic net control assignments without assistance or coaching
 - Net control operator for low to medium traffic nets
 - Scribe for low to medium traffic nets
- Typical Assignments
 - Resource Net Level 1, immediately after incident
 - Resource net for drills and public service events
 - Small to medium city and tactical nets
 - County Command Net NCO
 - Small staging area net control
 - Drills and public service events

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Net Control Operator

- The most essential part of any emergency net is the character and skill of the net control operator (NCO)
- The NCO coordinates all net activity and shapes the efficiency (or inefficiency) of the net operation
- The NCO sets the standard for all others on the net
 - Other operators will pattern their behavior after you
- Role may be assigned in advance
- For spontaneous incidents, often the first station on the air
- May be handed off from one station to another

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Net Control 2, 3

- Net Control 2 = Advanced Operator N2
 - Medium - to - high traffic nets
 - Resource Net Level 2 and 3
 - Message Net
 - Multiple nets
 - Plan small events
- Net Control 3 = Specialist Operator N3
 - Most critical and complex nets
 - Principal interface for planning, design, set-up, operations

- This course focuses on N1 qualification
- The follow-on course focuses on N2 and N3


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Personal and Mental Fitness

- Can handle physical and mental stress for long periods
 - Physical and mental fitness are essential
 - Self manages stress and fatigue – takes frequent breaks
- Can listen and respond in a noisy/chaotic environment
 - Net in one ear, EOC discussions in the other
 - Different net in each ear (stereo headphones, one ear per VFO)
 - Frequent interruptions, distractions
- Must have good hearing
 - Copy message traffic in difficult or noisy situations
 - Copy call signs quickly and accurately

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Operating Technique



- Verbal communications
 - Maintain a clear speaking voice
 - Control tone of voice, even under stress
 - Have a good command of the English language
 - Use plain English, no 10-codes, no Q-codes, etc
- Radio Technique
 - Make only necessary transmissions
 - Use procedures and techniques to reduce number of transmissions
 - Use a minimum of words to convey the message
 - Pause before speaking; allow repeater to key up
 - Leave gaps between transmissions for others to break in
 - If repeaters are linked, leave longer pause
 - Drop PTT when not speaking; avoid open mic or dead air

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How About This Instead?




- NCO: AA6AA, health and welfare check
- AA6AA: odometer 123, 101 S. at Lawrence Expwy, AA6AA
- NCO: AA6AA roger ...

Is This “Clear and Concise” Communication?

Affirmative!

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What’s Wrong with this Picture?



- NCO: AA6AA, net control ... (no response)
- NCO: AA6AA (phonetically) , this is net control
- AA6AA: This is AA6AA, sorry, I had my volume turned down, go ahead
- NCO: AA6AA, it’s been 15 minutes, uh, just checking on your progress
- AA6AA: oh, well, I’m still en route, almost there
- NCO: QSL. Could you tell me your odometer reading please?
- AA6AA: oh, o.k., uh, odometer is um, let me see, ..., odometer is 23.4
- NCO: No decimal points please
- AA6AA: oh, o.k. uh, odometer is 23
- NCO: I need the last three digits of your odometer, in whole miles, no decimal point
- AA6AA: oh, o.k. uh, odometer is 123

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Standard ITU Phonetics

| | |
|-------------------------|---------------------------|
| A - alfa (AL-fa) | N - november (no-VEM-ber) |
| B - bravo (BRAH-voh) | O - oscar (OSS-cah) |
| C - charlie (CHAR-lee) | P - papa (pah-PAH) |
| D - delta (DELL-tah) | Q - quebec (keh-BECK) |
| E - echo (ECK-oh) | R - romeo (ROW-me-oh) |
| F - foxtrot (FOKS-trot) | S - sierra (see-AIR-rah) |
| G - golf (GOLF) | T - tango (TANG-go) |
| H - hotel (hoh-TELL) | U - uniform (YOU-ni-form) |
| I - india (IN-dee-ah) | V - victor (VIK-tah) |
| J - juliet (JU-lee-ETT) | W - whiskey (WISS-key) |
| K - kilo (KEY-loh) | X - x-ray (ECKS-RAY) |
| L - lima (LEE-mah) | Y - yankee (YANG-key) |
| M - mike (MIKE) | Z - zulu (ZOO-loo) |

- If there is a chance of misunderstanding, spell it out with “I spell”:
 - “go to Kay Street” → “go to Kay, I spell kilo alpha yankee, Street”

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What’s Wrong with this Picture?



- NCO: and your location please?
- AA6AA: oh, uh, 101 South and ... coming up on ... Lawrence Expwy
- NCO: AA6AA great, thanks
- (Net Control moves on to other things)
- (but OOOOPS! ... AA6AA forgot to ID)
- AA6AA: AA6AA
- NCO: AA6AA go ahead ...

Is This “Clear and Concise” Communication?

Negative!

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Numbers and Time

| | |
|----------------------|---------------------|
| 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”
- Multi-digit 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”
- Time is always 24 hour local time

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Message Handling Prowords

- I SPELL Ex: "I spell Alfa, Bravo..."
- FIGURES Ex: "Figures Wun, ZEE-row, NINE-er" (= 109)
- INITIAL(S)/LETTER GROUP A group of one or more letters - Ex: ARES/RACES
- AMATEUR CALL An amateur call sign; use mixed group if contains "/"
- MIXED GROUP A group of mixed letters and numbers: Ex: AF3JJ/4
- MIXED GROUP FIGURE(S) A mixed group starting with one or more figures Ex: 2/A
- BREAK Separate different parts/lines of a message
- SAY AGAIN Repeat – usually used with a qualifier ...
- WORD AFTER Ex: "Say again word after..."
- WORD BEFORE Ex: "Say again word before..."
- ALL AFTER Ex: "Say again all after..."
- ALL BEFORE Ex: "Say again all before..."
- BETWEEN Ex: "Say again between... and..."
- AFFIRMATIVE "Yes"
- NEGATIVE "No" or "not received"
- ROGER Received and understood. (Does NOT mean "yes")

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Good Operators are Made, not Born!

- Being a high quality operator isn't really hard, but it does take practice
- Practice logging on any/all nets you listen to
 - Be ready to fill in if Net Control needs a break, has equipment failure
- Listen to the pros – Santa Clara County Fire 154.250
- Be the best that you can be. Be professional!
- And Practice, Practice, Practice
 - City Nets
 - SPECS and SVECS
 - Quarterly drills (city and county level opportunities)
 - Advanced Emergency Communications (MAC) Drills (twice a year)
 - Public service events


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Station Quality & Preparation



- Must have a clean and commanding signal
 - Antenna height & gain, RF power, audio quality
- Must have reliable power
 - AC, battery, generator, station grounding, emergency lighting, fuses
- Properly equipped
 - Radio manuals!
 - Headset (stereo), footswitch, forms, maps, procedures, frequency lists, telephone numbers, notepads, pens, ...
- Prior planning and configuration
 - Radio memories, modes, menus, configurations, cabling, labels
- High quality radio operations knowledge
 - Frequency changes, multiple frequencies, duplex/simplex/tones

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BREAK

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Stay Current, Stay Informed

- Visit the County web site often
- Check the Announcement space
- Check the Operations page
 - Contact Info, Forms, Frequency Lists, Go Kit Lists, Standards and Procedures, ... and more
 - Read the whole page
- Check for updates often
- Take personal responsibility for keeping yourself and your equipment up-to-date



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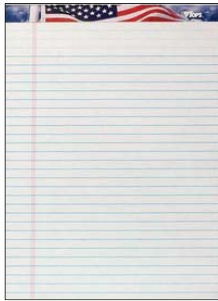
Tracking activities and message traffic

RECORD KEEPING AND LOGGING

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Form 1

- Main point is good documentation
- A simple writing tablet works
- Lots of uses
 - ... when you run out of the right form
- Turn in to supervisor at end of shift
 - (yes, even informal notes!)



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ICS 211A – Communications Check-In

| | | | | | |
|---|---------------|--|-----------------------------|--|--|
| ICS 211A CHECK IN LIST (COMMUNICATIONS) | | 1. INCIDENT NAME: <i>M. H. Mummy Race</i> | 2. DATE: <i>10/31/09</i> | 3. INCIDENT NUMBER: <i>RIP-13-13T</i> | 4. CHECK IN LOCATION: <i>ICP - Funeral Home</i> |
| 5. INFORMATION | | | | | |
| PERSONNEL NAME | CALL SIGN | AGENCY | TIME IN | TIME OUT | REMARKS |
| <i>Herman Munster</i> | <i>W6XRL4</i> | <i>CARES</i> | <i>23:30</i> | | |
| | | | | | |
| | | | | | |


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

- EVERYONE signs in/out on a 211
- If one doesn't exist, start one!
- Our version: ICS 211A-SCCo

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“Phone” Message Pad


- Two part, non-carbon is best
- Top page usually sticky
- Brief, tactical messages between staff members
 - Message net NCO to packet net NCO
 - Any NCO to shift supervisor
- Tactical messages between field and staff
 - Request for contact on phone or alternate net



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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
 - Start when you get assignment (home)
- Occasional message traffic?
 - Just log it right on the 214
- Use multiple pages if necessary
- Turn in to supervisor at end of shift
- Instructions on back



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

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Our example NCO: Herman Munster



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Example 214 (Herman's personal unit log as net control operator)

| | | | | | |
|--|-----------|--|--|--|--|
| UNIT LOG | | 1. Incident Name and Activation Number | | 2. Operational Period (Date/Time) | |
| ICS 214-SCCo ARES/RACES | | <i>Mockingbird Heights Mummy Race</i> <i>RIP-13-13T</i> | | From: <i>10/31/09</i> To: <i>11/1/09</i> | |
| 3. Unit Name / Tactical Call Designators | | | 4. Unit Leader (Name, Call Sign, ICS Position) | | |
| <i>Tactical Net Control</i> | | | <i>Herman Munster, W6XRL4</i> | | |
| 5. Personnel Roster Assigned | | | | | |
| Name | Call Sign | ICS Position | Home Base/City | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| 6. ACTIVITY LOG | | | | | |
| Time (24:00) Major Activities & Events / Occasional Messages (From / To / Msg# / Msg Text) | | | | | |
| <i>23:00 Departing home</i> | | | | | |
| <i>23:30 Arrive at event ICP- Gateman, Goodbury & Graves funeral home</i> | | | | | |
| <i>23:45 Net control briefing</i> | | | | | |
| <i>00:00 Begin tactical net for race – see ICS 309</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



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

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Other Standard Forms

- Message Net
 - ICS 213-SCCo (taught in Field Communications course)
- Other county OES forms
 - City Scan / Flash Report, Logistics Request Form, RIMS forms
- Hospital Net
 - DEOC-9 Beds – beds report
 - DEOC-9 (long and short form) status report
- Whatever the form:
 - Proceed in an orderly sequence; follow or create field numbers
 - 5 words at a time
 - Standard phonetics, numbers, prowords

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Example 309 (Resource Net)

Example: Tracking Herman from home to event ICP

| COMM Log 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 20:00</i> To: <i>11/1/09 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> | | |
| 5. COMMUNICATIONS LOG | | | | | |
| Time (24:00) | FROM | | TO | | Message |
| | Call Sign/ID | Msg # | Call Sign/ID | Msg # | |
| 23:00 | W6XRL4 | | | | <i>Leaving home – 1313 Mockingbird Lane ODO 123</i> |
| 23:15 | | | W6XRL4 | | <i>H&W - Highway 13 – ODO 141</i> |
| 23:30 | W6XRL4 | | | | <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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Summary of Logging and Record Keeping

- Everyone signs in/out on a 211A Communications Check-in (ICS 211-SCCo)
- Everyone fills out a 214 Unit Activity Log (ICS 214-SCCo)
 - Start it when you get your assignment (before you leave home)
- Net control operators also fill out 309 Communication Log (ICS 309-SCCo)
 - Does not replace the need to maintain a 214 Unit Activity Log
- Must be legible!
- Hand in your logs, notes, etc., at the end of your shift

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Example 309 (Event tactical/message net)

Example: Herman Munster’s net control log

| COMM Log 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 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, K6XRLA</i> | | |
| 5. COMMUNICATIONS LOG | | | | | |
| Time (24:00) | FROM | | TO | | Message |
| | Call Sign/ID | Msg # | Call Sign/ID | Msg # | |
| 00:00 | W6DRAC | | | | <i>Check-In – Assigned tactical Blood bank 1 (BBANK1)</i> |
| 00:05 | | | | | <i>First mummy on course; advise when at your station</i> |
| 00:15 | BBANK1 | 107 | MH-ICP | 204 | <i>Blood bank is running short of 0+ blood</i> |
| 00:20 | CPI | | | | <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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EQUIPMENT FOR NET CONTROL


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Required Equipment



- Typical situation
 - Most nets are managed from an EOC radio room (county, city, agency)
 - Most EOCs are fully equipped, but some are not or are not tested
 - You may prefer your own headphones/headset or sanitary covers
- Be prepared anyway
 - 2 hour carry kit & 12 hour go kit
 - Go Kit checklists: <http://www.scc-ares-races.org/operations.html>
 - Itemized as: required, recommended, optional
 - Minimum required means you can't do the job without it
 - May not be the most efficient or comfortable way to operate
 - Recommendation: consider the "recommended" items, too; go with what works for you.

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Putting it all together

OPERATING A NET


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Net Control Ops Still Need Complete Go Kit

- Even if you're going to a fully equipped net control station, you still need your go kit:
 - HT and coax adapters
 - Monitor tactical frequency, monitor for doubles, backup radio
 - County frequency List
 - Direct check-ins to proper city tactical frequency
 - Emergency contact numbers
 - Direct dial police, fire
 - ADEC list for repeater linking; EC list to direct check-ins to local resources
 - Maps
 - Minimum = Thomas Guide for Santa Clara County
 - Surrounding counties, event specific or incident maps
 - Clock or watch
 - Set to 24-hour time is most convenient

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Prepare Your Workspace



- Prepare your work-space. Be NEAT!!!
- Pen, pencil, paper
- Visible clock (24-hour clock is convenient)
- Frequency lists, contact numbers/info
- Forms (Form 1, phone message, ICS 214, ICS 309, ICS 213, ...)
- Maps (Thomas Guide, others as appropriate)
- Radio oriented in a comfortable position
- Water/liquids for drinking
- Place regularly accessed items where they are visible & within easy reach

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Know/Learn the Radio and Other Equipment

- Familiarize yourself with the radio before starting the net
- Know how to set frequency, offset, tone, power level
- Know how to listen on repeater input
- Know how to lock / unlock
- Know how to use headsets and remote PTT
- Program in all expected frequencies to memory
- Program in "simplex mode on repeater output" for all repeaters

Prepare the Script

- Some of the main county nets have prepared scripts
 - Consult the county manual for each net in county radio room
- If no prepared script, take the time to write one out:
 - Introduction
 - Your call sign, purpose of the net, open or directed, net control tactical call sign, you can not dispatch help – call 911, how you will take check-ins
 - Regular updates:
 - Purpose of net, open or directed
 - Closing
 - Closing net, thank the participants and the owners/operators of the repeater, returning frequency to normal use

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Generic Script for Opening a Net

1. "Is the frequency clear?"
2. "This is <call sign> setting up a directed net for <purpose>."
3. "The tactical call sign of net control is <tactical call sign>."
4. State whether or not you have ability to dispatch resources.
5. State what to do if immediate help is needed. (call 911 or city tactical)
6. "Are there any stations with emergency traffic?"
7. "Does any station have traffic for net control?"
8. "Net control will now take check-ins according to <method>"

- Re-announce call sign and purpose of net every 10 minutes
- At close, thank owners and operators of repeater(s); announce that frequency is returned to normal use

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Directing Traffic



- Enforce net discipline (professionally)
 - "<call sign> go direct and turn it back to me when you are done"
- Direct traffic in an effective manner for all net participants
 - Control tempo and pace
 - Watch for and help less experienced operators
- Prioritize traffic according to precedence
 - Emergency, Priority, Routine, Health and Welfare
- Control traffic flow
 - "All stations standby" or "All stations hold your traffic"
- Give instruction in a way which avoids "doubles"
 - "Station ending with zulu, go ahead"
- Allow non-net-related traffic during breaks in net traffic


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Example: Generalized Self-Alerting Script

- "This is _____, acting as Net Control Operator for the Santa Clara County ARES/RACES Resource Net. I will be gathering a snapshot of information regarding the (fire/explosion/earthquake/terrorist attack/etc.) that just occurred. I have no ability to dispatch resources at this time. If you need immediate help, use 9-1-1 to contact your local emergency response center or try to raise someone on your city tactical frequency.
- "I am ready to receive snapshot reports from any operator who has pertinent information. We want observations only from your current locations – **do not go looking for problems.**
- "I will ask for reports by city. I'll take call signs in groups of five. I will use the following scale: "destroyed, major, minor, affected". When you hear your call sign, report your city, 2-3 word description of damage (such as "multiple buildings destroyed" or "one building minor"), and call sign."
- "I'll take the first five call signs only from <city names>"
- Acknowledge call signs as you hear them; ask for relays for missed calls

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ID Regularly



- Lots of stuff to remember to do regularly
 - Announce your tactical call
 - Announce the purpose of the net
 - ID with your FCC call sign every 10 minutes
- Hint: Put it all together every 10 min
 - "This is <call sign>, net control for the Santa Clara County Resource Net. This is a directed net."
- Make sure all stations are identifying regularly
 - "Roger checkpoint 1, I'll turn it back to you for ID"

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Prepare Yourself, and Go!



- Make sure you get a briefing
- Learn/know the procedures, traffic flow of the net
- Get familiar with & set up the radio, headset, other gear
 - Skim the manual or cheat sheet and keep it handy
 - Consider locking the keypad or, at least, the frequency
- Prepare your log sheet, note paper
- Don't start until you are ready; never let yourself get "behind"
- Take a deep breath; Relax
- Check that the frequency is clear
- Key up, breathe, read the introduction

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Track/Update Field Resources



- Perform regular health & welfare checks of field stations
 - "We will now do a health and welfare roll call by tactical call sign. When called, answer with your tactical call, identify any help or resources you may need, and finish with your FCC call sign"
 - Usually every 30 min or so, depending on situation & traffic volume
- Provide information to field stations regularly
 - Warnings and advisories (weather, road closure, etc.)
 - Event status (first bib number in race, location of parade, etc.)
 - Be sure to indicate "drill traffic" when appropriate
 - Other announcements received from supervisor
 - Remember, the media is listening
 - Shift supervisor will coordinate with the Public Information Officer (PIO)

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Busy Nets

- Make sure to leave space regularly
 - Allow all repeaters to drop plus a few additional seconds
 - If stations are too persistent, you may need to force the space:
 - "Are there any stations with emergency or priority traffic?"
 - Are there any station that have been unable to reach net control?"
- When multiple stations standing by, regularly announce list
 - Reduces stress for net members
- Maintain calm at all times, help field ops remain calm
 - Field operators will follow the lead of the NCO

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Handing-off/Transferring a Net


- For local hand-off, relief operator can work as scribe prior to hand-off
- You may need to transfer a net to a remote net control
 - Example: Start and end of many events and incidents use an off-site resource net control
- General procedure
 - 1st operator reads off the call signs, 5 at a time (phonetically)
 - For most nets (including resource net), call sign is usually sufficient
 - Sometimes, brief status info is also needed: AA6AA temporarily off the air changing batteries, ...
 - 2nd operator acknowledges, then immediately performs a health and welfare check on transferred individuals
 - Do it as a group for efficiency: "I will now perform a health and welfare check. When I say your call sign, respond with your mileage and location"

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Dealing with Stress and Fatigue

- Don't start until you are ready
- Control the pace of the net according to your ability
 - Work at your speed
 - If you need to, put the net on hold
- Take periodic breaks
 - As coordinated with teammates and supervisor
- Maintain proper hydration and nutrition
- Rotate positions/duties with team members
 - Start as scribe → net control → take a break → scribe → net control
- Exercise patience and understanding with other operators
 - They are likely fatigued and/or stressed, too
 - They will follow your lead if you show a calm and deliberate approach

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BREAK

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Relief Briefings

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

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Net Control Operations

EXAMPLE: RESOURCE NET LEVEL 1

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Self Alerting Example - Earthquake

- You feel an earthquake, what do you do first?
 - Ensure your personal safety
 - Ensure the safety of your family
- Tune to Resource Net (146.115 + 100.0 Hz)
 - If you can't reach this repeater, use either the North or South repeater
 - Be aware that individual cities may gather initial reports on city tactical frequencies and then report totals to resource net.
- Prepare your workspace, your script and yourself
- Check for an active net
 - "This is _____ calling from {city, County EOC, etc.}; is there an active net on this repeater at this time?"

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Post-Earthquake Damage Reports

- Use the Modified Mercalli ("MIKE-MIKE") scale
 - Mike-Mike 1 – Not felt at all
 - Mike-Mike 2 – Felt by persons at rest, on upper floors
 - Mike-Mike 3 – Felt indoors; hanging objects swing
 - Mike-Mike 4 – Windows, dishes rattle; like heavy truck passing or jolt
 - Mike-Mike 5 – Pictures move, doors swing, small items on floor
 - Mike-Mike 6 – Glassware broken, books off shelf, floor lamps topple
 - Mike-Mike 7 – Furniture broken, cannot stand, chimneys fall
 - Mike-Mike 8 – Buildings collapse
- Wallet cards available on county web site
 - <http://www.scc-ares-races.org/operations.html>
- Typical response to request for damage reports
 - "Los Altos, Mike-Mike 4, KE6AGJ"

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Self-Alerting Example - Earthquake

- "This is <call sign>, Resource Net Control. This net is intended to gather brief damage reports from around the county, I am **NOT** able to dispatch help for acute situations. If you need immediate help, use 9-1-1 to contact your local emergency response center or try to raise someone on your city tactical frequency.
- "Is there any emergency or priority traffic?"
- "I will take reports, five at a time, by severity, using the Mike-Mike scale. When I call you, respond with your city, Mike-Mike number, and call sign.
- "I'll start with reports of Mike-Mike 7 or higher. I'll take the first five call signs now."

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Summarizing Mike-Mike Reports

| CITY | MM-1 | MM-2 | MM-3 | MM-4 | MM-5 | MM-6 | MM-7 | MM-8 |
|-----------|------|------|------|------|------|------|------|------|
| Campbell | ### | | | | | | | |
| Cupertino | | | | ### | | | | |
| San Jose | | | | | | | | |

- Get worst case reports first, then move down in severity
 - "Are there any reports of Mike Mike 7 or higher?"
 - "How about any reports of Mike Mike 5 or higher?"
- Get responses from each city
 - No response does NOT mean no damage!
 - Use EC list or frequency list in your go kit for list of city names
- Continue until you have a complete picture
 - Even if no heavy damage is reported
 - Knowing (for certain) that damage is minimal is important, too!

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Why "Mike-Mike"?

- Scenario: You are the emergency manager for the county
- Given this information: 🗨️
- Would you activate the EOC or not?
- The Modified Mercalli ("Mike-Mike") scale attempts to:
 - Eliminate subjective descriptions such as "moderate" or "heavy"
 - Quantify the effect based on commonly observable events
 - "Pictures move" vs. "buildings collapse"
 - Assigns a number for quick transmission, easy summarization

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Challenge: Multiple Resource Net Repeaters


- Situation:
 - Three repeaters used for resource net: AA6BT, W6ASH, N6NAC
 - No one resource net repeater covers the entire county
 - During Resource Net Level 1 ops, repeaters won't be linked initially
- Action
 - If you can reach the primary repeater (AA6BT)
 - Start the net there
 - Be aware parts of the county can not reach you
 - Send a liaison to the other frequencies
 - Ask a control operator or DEC/ADEC to link the repeaters (if appropriate)
 - If you can NOT reach the primary repeater (AA6BT)
 - Start the net on the North or South repeater, as appropriate
 - Ask for a liaison who can reach AA6BT
 - Ask a control operator or DEC/ADEC to link the repeaters (if appropriate)

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EXERCISE

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Resource Tracking




- DSW supervision requirement handled over the air
 - This is important, even for drills and public service events!
- The NCO is responsible for tracking field resources
 - NCO must always know who is on the net and where they are
- NCO usually gets help with resource assignment
 - Shift supervisor, ADEC/DCRO or others
- Always be aware of safety, help field ops to focus on safety
 - In stressful situations, people often overlook safety and/or get a “hero” mentality
 - Listen for and recognize this behavior in yourself and field resources

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Exercise: Self alerting scenarios


1. You are watching TV when you learn that hackers have reportedly attacked the telephone network. Northern California and parts of Nevada are reported to be affected. You pick up your phone and have no dial tone.
2. A dam located near you ruptures and you observe flash flooding in your area.
3. You walk outside and smell a strong chemical odor (such as ammonia) but you don't notice any nearby activity that would account for the smell.

Exercise: Write an intro script for the Resource Net, including how you will organize check-ins. Share it with the class.




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Taking Check-Ins



- Create an orderly and efficient check-in process
 - Gets resources on board as quickly as possible
 - Volunteers may lose interest if process is too slow or chaotic
- Organize check-in process according to the situation
 - By Call sign suffix – (A – I, J – P, Q – Z)
 - Roll call – by city, by tactical call, ...
 - By precedence – “All stations reporting *major* damage”
 - By qualifications – “All MACs with P1 or higher qualification”
- Log check-ins and check-outs accurately
 - Copy as much as possible, even if you don't get it all the first time
 - When asking for repeats, try to avoid additional doubles
 - e.g., “The station ending in Zulu please repeat”


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RESOURCE TRACKING

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Tracking



- Know the status of all resources, all the time
- Perform health & welfare roll-calls regularly
 - Typically every 15 – 30 minutes, depending on traffic level
- Use whatever is appropriate and convenient for tracking
 - Check with shift supervisor or served agency for standard method
 - Forms, index cards, white boards, t-cards or plain paper all work fine
- Maintain tracking until check-out or hand-off

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Check-out



- Ensure an orderly and efficient check-out
 - Specific procedure is dependent on the type of net
 - Verify procedures with receiving agency net control
- Remind resources of the process as they check-out
 - Even trained resources forget when not practiced regularly

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Resource Net Check-In and Activation



- Participant is in car and ready to go – then checks in
 - Resource: “Net control, KE6AGJ, ready for assignment”
- Net control verifies against participant, DSW lists (usually)
 - Verify DSW status, event participation status, as appropriate for event
- Participant provides starting odometer and street location
 - NCO: KE6AGJ, what is your odometer and location
 - Resource: “Odometer is 123, First Street, San Jose, KE6AGJ”
 - Last three digits of odometer (no decimal places)
- Net control provides assignment and activation number
 - NCO: “KE6AGJ, your assignment is travel to drill city at Raynor Park. Your activation number is AAA-##-##. ... Safe travel.

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Net Control Operations

EXAMPLE: RESOURCE NET FOR AN EVENT


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Resource Net Logging

- Typical tracking from home to event and back
 - On the trip home, people may check-in/out or check-out early and head elsewhere
- Key items logged are:
 - Call sign, time, last three digits of odometer, and street
- En route health and welfare checks every 15-20 minutes
 - Depends on net traffic
- Each contact recorded in ICS 309 Communication Log

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Resource Net for an Event



- Similar to full Resource Net Level 3
 - Check in, receive activation
 - Track while en route
 - Check out
- Less complicated than full Resource Net Level 3
 - Simplified for use during drills and public service events
 - Typically only needed at start and end of event
 - No need to track individual capabilities at check-in
 - No need to make assignments – already known or assigned at event
- This is important; required for DSW compliance
- Good practice for anyone interested in Resource Net Control
- Be prepared with detailed local maps, parking info, etc.

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Example Resource Net 309 Comm Log

| COMM Log | | 1. Incident Name and Jurisdiction Number | | 2. Operational Period (Date/Time) | |
|--|--------------|--|-------------------------------------|-----------------------------------|-------------------------------------|
| ICS 309 - SC Co | | Santa Clara County Drill | | From: 10/1/10 To: 10/1/10 | |
| ARES/RACES | | XSC-10-01T | | From: 06:00 To: 14:00 | |
| 3. Radio Net Name (for NCOs) or Position/Tactical Call | | | 4. Radio Operator (Name, Call Sign) | | |
| Resource Net | | | Herman Munster, W6XRL4 | | |
| 5. COMMUNICATIONS LOG | | | | | |
| Time (24:00) | FROM | | TO | | Message |
| | Call Sign/ID | Mag # | Call Sign/ID | Mag # | |
| 0645 | KE6AGJ | | | | check-in / depart First St. odo 112 |
| 0650 | KG6RLR | | | | check-in / not ready |
| 0700 | | | KE6AGJ | | odo 123 Second St. |
| 0700 | KG6RLR | | | | depart Mercury st. odo 101 |
| 0715 | | | KE6AGJ | | odo 134 Third St. |
| 0715 | KG6RLR | | | | odo 201 Venus St. |
| 0730 | KV6U | | | | check-in / not ready |
| 0730 | KE6AGJ | | | | Fourth st. odo 145 |
| 0730 | | | KG6RLR | | Mars St. odo 301 |
| 0735 | KE6AGJ | | | | arrived / checkout |
| | | | | | |
| | | | | | |
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Keeping Track of Traveler Status

- Need to be able to quickly answer status-related questions
 - Who is en route? Who has arrived? Who needs a H&W check?
 - This is hard to do by scanning the 309, especially multiple pages
- It is usually helpful to track status separately
 - Especially with a larger number of travelers
- Lots of options
 - Index cards, t-cards, white board, computer, forms, plain paper, ...
 - Choose whatever method works for you
 - Must be accurate and efficient
- Remember, this is a DSW supervision responsibility
 - Get it right!

Resource Net Status Tracking with a Form

| Travel Net Tracking Tool | | I. Incident Name and Activation Number: | | | | J. Operational Period (Date / Time): | | |
|--------------------------|--|---|-------|-------|-------|--------------------------------------|-----------|----------|
| | | From: _____ To: _____ | | | | | | |
| B. Call Sign | A. Traveler Status (00:00 24-hour -> -> ✓) | | | | | | | S. Notes |
| | Check-In | Depart | H&W-1 | H&W-2 | H&W-3 | Active | Check-Out | |
| KE6AGJ | 06:45 | ✓ | 07:00 | 07:15 | 07:30 | | 07:35 | ✓ |
| KG6RLR | 06:50 | 07:00 | 07:15 | 07:30 | | | | |
| KV6U | 07:30 | | | | | | | |

- 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!

Resource Net Tracking with Index Cards

- Use piles of index cards to represent various statuses
- What to put on the cards?
 - Whatever works for you! At a minimum, put call sign at top
 - 309 always has the rest of the info: time, odometer, location
 - More helpful if you record time
 - Easier to see when next health & welfare check is due
- Stick latest update at rear of pile
 - Next up will be on or near top of pile

KE6AGJ

0645 CI/D


0700 HW

0715 HW


0730 HW

0735 A/CO


Check-In




En Route



Arrive/Check-out



Resource Net Check-Out



- Field resource arrives at destination, advises net control
 - “Net control, I have arrived at the staging area, final mileage is 437, and I’m checking out, KE6AGJ.”
- Net control advises stay in car, contact local tactical net
 - “KE6AGJ, Roger. Stay in your vehicle and contact event net control on xxx.yyy simplex. If you can not reach them, come back to me here.”
- Field resource switches frequency, contacts event net control
- If they can not reach the event net control
 - Wrong frequency, duplex/simplex issues, tone, etc.
 - Field resource will come back to Resource Net
 - NCO helps them contact local tactical net
 - Resource net NCO should have back-up contact info for event net NCO

Resource Net Tracking with Plain Paper

| CALL SIGN | ✓-IN | DEP | H&W | H&W | H&W | ARRIVE | ✓-OUT |
|-----------|------|------|-------|-------|-------|--------|-------|
| KE6AGJ | 0645 | ✓ | 07:00 | 07:15 | 07:30 | 07:35 | ✓ |
| KG6RLR | 0650 | 0700 | 0715 | 0730 | | | |
| KV6U | 0730 | | | | | | |

- Quickly ascertain status of all participants
- Example: if the current time is 07:40, then:
 - Arrived/checked-out: KE6AGJ
 - Still on net: KG6RLR, KV6U
 - En route: KG6RLR, next H&W at 07:45 (due in five minutes)
 - Checked-in, not departed: KV6U

EXERCISE

Interactive Exercise

- Using a plain sheet of paper, create a resource net travel tracking form with the following columns:
 - Call sign, Check-in, Depart, H&W 1, H&W 2, H&W 3, H&W 4, Arrive, Check-out
- Or, use the preprinted form:

| Resource Net Travel Tracking Tool | | 1. Incident Name and Activation Number | | | | 2. Operational Period (Date / Time) | | | |
|--------------------------------------|---|--|-------|-------|-------|-------------------------------------|--------|----------|-----------|
| | | Name: _____ | | | | From: _____ To: _____ | | | |
| 3. Call Sign | 4. Traveler Status (06:00 24-hour -pp- ✓) | | | | | | | 5. Notes | |
| | Check-in | Depart | H&W 1 | H&W 2 | H&W 3 | H&W 4 | Arrive | | Check-Out |
| | | | | | | | | | |
| | | | | | | | | | |
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- Fill in the tracking form while listening to the recording

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Summary



- You should now be able to
- Understand how critical the net control operator is to effective communication for the entire net
 - Explain the purpose and usage of county nets
 - Understand net control operator qualification levels
 - Explain proper net control operator attributes
 - Perform record keeping and logging properly
 - Understand the equipment required for net controls
 - Operate a Level 1 Resource Net
 - Operate a Resource Net for a drill or event

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Interactive Exercise



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

- 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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Next Class: Advanced Net Control

- Roles and responsibilities
- Working with a Scribe
- Equipment for advanced set-ups
- Advanced net operating techniques
 - Level 2 and 3 Resource Net
 - Higher speed nets, multiple nets
 - Repeater coverage and linking
 - County Message Net
- Planning for net control functions

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Summary

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Thank You!

Questions, comments, suggestions?
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