



# OPERATING IN AN AMATEUR RADIO NET

Good operators are made, not born!

# 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.**

# Types of Nets

- **Open Net** – Stations call each other directly to converse or pass traffic.
- **Directed Net** – Stations call only net control directly, go direct to other stations only with net control permission.

# SCCo Emergency Nets

- **Command Net** – Official traffic between OpArea command staff and between EOCs
- **Message Net** – Official traffic on behalf of served agencies
- **Resource Net** – Unofficial information and volunteer contacts
- **Tactical Net** – Unofficial and official traffic of a local nature
- **Hospital Net** – Official traffic with Dept. of Public Health

# What Frequencies Do We Use?

- 145.270 (R) – North County Resource
- 146.115 (R) – Main County Resource
- 146.535 (S) – MTV Primary Tactical
- 147.495 (S) – MTV Secondary Tactical
- 440.800 (R) – MTV Command/Message
- 145.230 (R) – Hospital Net
- 444.625 (R) – South County Resource
- 147.360 (R) – SCCo Message Net
- 442.500 (R) – SCCo Command Net

# 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

# Net Control Operator...

- ...is in charge of the net
- ...activates and assigns resources
- ...keeps track of resources
- ...assigns tactical calls
- ...performs welfare checks
- ...keeps a good log

# Useful Info for Net Operations

- Control Phrases
- Prowords
- Phonetics
- Numbers
- Break Tags
- Tactical Calls



# Control Phrases

- “All stations standby” or “All stations hold your traffic”
- “Pass messages no faster than you can write them”
- “Pass messages in five word groups”
- “Give Call Signs in phonetics”
- “Use phonetics when spelling”

# Voice Net Prowords

- OVER – I have finished talking, your turn (good for simplex)
- ROGER – Message received & understood
- COPY THAT or I COPY – See Roger
- STANDING BY – I am awaiting further transmissions
- OUT – This communication is concluded
- WILCO – I understand and WIL COmply (also ACKNOWLEDGED)
- OFF the AIR – Self explanatory
- BREAK – I have further or I want to talk
- AFFIRMATIVE/NEGATIVE – Yes/No
- CLEAR – No agreed upon meaning (do not use)

# Msg. 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
- FIGURES
- INITIAL(S)/LETTER GROUP
- MIXED GROUP
- SAY AGAIN

# Phonetic Alphabet

<b>A - Alfa (AL-fah)</b>	<b>N - November (no-VEM-ber)</b>
<b>B - Bravo (BRAH-voh)</b>	<b>O - Oscar (OSS-cah)</b>
<b>C - Charlie (CHAR-lee)</b>	<b>P - Papa (pah-PAH)</b>
<b>D - Delta (DELL-tah)</b>	<b>Q - Quebec (keh-BECK)</b>
<b>E - Echo (ECH-oh)</b>	<b>R - Romeo (ROW-me-oh)</b>
<b>F - Foxtrot (FOKS-trot)</b>	<b>S - Sierra (see-AIR-rah)</b>
<b>G - Golf (GOLF)</b>	<b>T - Tango (TANG-go)</b>
<b>H - Hotel (hoh-TELL)</b>	<b>U - Uniform (YOU-ni-form)</b>
<b>I - India (IN-dee-ah)</b>	<b>V - Victor (VIK-tah)</b>
<b>J - Juliet (JU-lee-ett)</b>	<b>W - Whiskey (WISS-key)</b>
<b>K - Kilo (KEY-loh)</b>	<b>X - X-Ray (ECKS-ray)</b>
<b>L - Lima (LEE-mah)</b>	<b>Y - Yankee (YANG-key)</b>
<b>M - Mike (MIKE)</b>	<b>Z - Zulu (ZOO-loo)</b>

**When in doubt, spell it out.**

# Number Pronunciation

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

**\*Zero is never “oh”**

**Numbers are always pronounced individually**

**Decimal point is never “dot”**

# Break Tags

- “Answer”
- “Question”
- “Info”
- “Priority”
- “Medical”
- “Emergency”
- “Relay”
- “Break”
- “Correction”
- and your call sign

# Tactical Calls

- Tactical calls are assigned to a position not a specific operator, normally by the Net Control Operator.
- Simplifies operation of a net in a busy event.
- Use of a tactical call does not replace required use of the FCC call sign. (e.g., “This is Training Net Control, K6GAC.”)



# Some Rules of Directed Nets

- State the existence and purpose of the net and your call sign initially and at least every 15 minutes (10 minutes is better)
- Emergency traffic always trumps the net
- Insist that all net traffic go through net control
- Allow non-net traffic during breaks in net traffic
- Just because you have a net does not mean you own the frequency



# Crowded Nets

- Call by suffix groups or precedence
  - “Alfa thru Echo”; “Immediate”, “Priority”, “Routine”, “Mike-Mike 7 & 8”, “First Five”
- Doubles
  - Try to pick up at least one letter of the call sign, transmit “SAY AGAIN ...”
- Relays
  - Ask if anyone else can hear the station
  - If you can hear a station that net control does not, offer a “RELAY”

# Participant Behaviors

- Spend most of your time listening.
- Know the nature of the net
  - Directed
  - Open
- Respect the directions of the NCO
- Respond quickly when called
- Pronounce phonetics and numbers correctly
- Avoid superfluous comments

# What if Others are Using “Our” Frequency

- Nobody “owns” a frequency
- If the frequency is in use, try to call them and request that they give way to a scheduled or emergency net.
- Usually they will yield. If not, you must change to a different frequency.
- Sometimes two nets can share a frequency. Net Controls must negotiate. Works best on repeaters.

# What if There is Interference on the Frequency?

- Types of Interference
  - Natural
    - Atmospheric or Cosmic Background
  - Inadvertent
    - Consumer/commercial devices
    - Stuck PTT
    - DX signal on a hop or duct
  - Intentional
    - Jammers

# What to Do

- Ignore the jamming and proceed with the net as if it was not there. Just talk over it.
- A decently strong signal can capture the repeater away from the jammer (a nice feature of FM).
- Run high power on a good antenna system. An HT inside a building will probably not be sufficient.
- Call for relays if you can't hear a station clearly enough to copy it.
- Do not discuss the jamming with anyone on the air.

# Who is NCO After the Earthquake??

It could be you!!

- Come up on 145.270 repeater
- Listen for active stations
- Announce that you are organizing a net to collect damage information
- Inform that you have no ability to dispatch help
- Take Mike-Mike reports of damage until relieved

# Post-Earthquake Damage Reports (Mercalli Scale)

- SCCO ARES/RACES “MIKE-MIKE” SCALE
  - Mike-Mike 1 – Not felt at all
  - Mike-Mike 2 – Barely noticed
  - Mike-Mike 3 – Know it was an earthquake somewhere
  - Mike-Mike 4 – Windows, dishes rattle
  - 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
- Typical Response to a Call for Damage Reports by Net Control:
  - “This is KF6ZSQ, Winfield & Preston, Mike-Mike 4, KF6ZSQ”



# Wrap-Up

- Questions/Discussion
- Personal Experiences
- Exercise



# Exercise

- Fan out around the building with your HT and writing materials
- Leader will appoint a Ham to be “Training Net Control Operator”
- New Net Control will announce as net control of a controlled net for exercise purposes
- Exercise NCO takes check-ins for the net
- NCO rotates to other operators as directed by Instructor