

# Auxiliary Emergency Communications (AEC)

## Training Course

### Unit 5: Incident Radio Communications Plan



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# Terminal Learning Objective

## Enabling Learning Objectives

**TLO:** At the conclusion of the unit, the student will be able complete ICS Form 217A, Communications Resource Availability Worksheet, and ICS Form 205, the Incident Radio Communications Plan

**ELO A:** Complete ICS Form 217A

**ELO B:** Complete ICS Form 205

**ELO C:** Identify security requirements for ICS Forms 217A and 205



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# ICS Form 217A: Communications Resource Availability Worksheet

- Purpose
- Preparation
- Distribution



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# Exercise 5-1: ICS Form 217A Communications Resource Availability Worksheet

## Purpose/Objective

- Complete an ICS Form 217A
- Identify security requirements for an ICS Form 217A

## Exercise Instructions

- All AEC organizations should have an ICS 217A(s) that include all AEC communications resources available to that specific group
- Identify available channels at the state, region, or local level



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# Exercise 5-1: ICS Form 217A Communications Resource Availability Worksheet (Cont)

## Exercise Instructions (Cont)

- List other available AEC-related resources that provide coverage in the AEC organization's area of operation (repeaters, designated channels, etc.)
- Provide and review samples of an ICS Form 217A



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# Exercise 5-1: ICS Form 217A Communications Resource Availability Worksheet (Cont)

## Outputs

- Participants will work in small groups to produce a hard and/or soft copy of the 217A
- Present and discuss results per group
- Present and discuss security requirements

## Duration

- 1 hour



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# 217A for Group Exercises

COMMUNICATIONS RESOURCE AVAILABILITY WORKSHEET							Frequency Band			Description	
ICS 217-A				Page 1 of 2			3 - 30 MHz			Nationwide	
Ch #	Channel Config	Channel Name	Eligible Users	Rx Frequency	Wide/Narrow	RX Tone / NAC	Tx Frequency	Wide/Narrow	Tx Tone / Nac	Mode (A/D)	Remarks
1	80/75 Meters	RTTY/ DATA		3.5700-3.6000							
2	80/75 Meters	SSB-DX		3.7900-3.8000							
3	80/75 Meters	SSTV		3.8450							
4	80/75 Meters	AM-Calling		3.8850							
5	60 Meters	1		5.3305							Shared with primary user
6	60 Meters	2		5.3465							Shared with primary user
7	60 Meters	3					5.3585				Shared with primary user
8	60 Meters	4		5.3715							Shared with primary user
9	60 Meters	5		5.4035							Shared with primary user

# 217A for Group Exercises (Cont)

COMMUNICATIONS RESOURCE AVAILABILITY WORKSHEET							Frequency Band			Description	
ICS 217-A			Page 1 of 2				3 - 30 MHz			Nationwide	
Ch #	Channel Config	Channel Name	Eligible Users	Rx Frequency	Wide/Narrow	RX Tone / NAC	Tx Frequency	Wide/Narrow	Tx Tone / Nac	Mode (A/D)	Remarks
11	40 Meters	RTTY-DX		7.0400							
11	40 Meters	PSK31 DX		7.03515							
12	40 Meters	SSTV		7.1710							
14	40 Meters	AM-Calling					7.2900				
15											
16	20 Meters	PSK31		14.07015							
16	20 Meters	RTTY		14.0700-14.0950							
17	20 Meters	NCDXF Beacons		14.1000							Do Not Transmit On This Frequency!
19	20 Meters	SSTV		14.2300							
20	20 Meters	AM-Calling		14.2860							



# 217A for Group Exercises (Cont)

COMMUNICATIONS RESOURCE AVAILABILITY WORKSHEET ICS 217-A Page 2 of 2							Frequency Band 3 - 30 MHz			Description Nationwide	
Ch #	Channel Config	Channel Name	Eligible Users	Rx Frequency	Wide/Narrow	RX Tone / NAC	Tx Frequency	Wide/Narrow	Tx Tone/ Nac	Mode (A/D)	Remarks
1											
2	15 Meters	RTTY/DATA		21.0700 - 21.1100							
3	15 Meters	PSK31		21.07015							
4	15 Meters	NCDXF Beacons		21.1500							Do Not Transmit On This Frequency!
5	15 Meters	SSTV		21.3400							
6											
7											
8	10 Meters	RTTY/DATA		28.0700 - 28.1500							
9	10 Meters	PSK31		28.12015							
10	10 Meters	NCDXF Beacons		28.2000-28.3000							Do Not Transmit On This Frequency!
11	10 Meters	AM		29.0000 - 29.2000							
12	10 Meters	FM Repeaters		29.6100 - 29.7000		W	29.5200 - 29.5900	W		A	
13	10 Meters	FM Calling		29.6000	CSQ	W	29.6000	CSQ	W	A	Simplex Calling

# ICS Form 205: Incident Radio Communications Plan

- Purpose
- Preparation
- Distribution



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# ICS Form 205: Incident Radio Communications Plan (Cont)

- Determine needs:
  - What is their assignment?
  - Who is here?
  - When are they doing it?
  - Where are they doing it?
  - Why are they doing it; what are roles of resources?
  - How is the incident organized?
  - How much? What bandwidth/capacity is needed and over what coverage area?



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# ICS Form 205: Incident Radio Communications Plan (Cont)

- Assess available resources
- Determine most appropriate and available application of resources
  - Shared channels/systems?
  - Interconnects (gateways)?
  - Radio cache equipment?
- Assign nets
  - Create the ICS Form 205



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# ICS Form 205: Incident Radio Communications Plan (Cont)

- Message Coordination
- Incident support (Operational and Technical)

Networks for large incidents may be organized as follows:

- Command Net
- Tactical Net
- Support Net
- Air Nets (air-to-ground, air-to-air, etc.)
- Staging Area Nets



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# Incident Radio Communications Plan Sensitive Information

- Generally, IAPs become public information and radio programming information may become compromised through general distribution of the IAP beyond incident personnel



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# Incident Radio Communications Plan Sensitive Information (Cont)

- The Department of Homeland Security (DHS) restricts the publication of detailed frequency and programming information regarding Urban Search & Rescue (USAR) and Disaster Medical Assistance Team (DMAT) channels to DHS-authorized personnel who have obtained the necessary clearances



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# Incident Radio Communications Plan Sensitive Information (Cont)

- USAR and DMAT frequencies will not be published on an ICS Form 205, even if known to the COML
- This same philosophy may apply to the Bomb Squad, SWAT team, military teams, intelligence gathering, or other sensitive channels being used
- Media access to ICS Form 205



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# Incident Radio Communications Plan Sensitive Information (Cont)

- Encryption
  - Not allowed on amateur radio frequency per FCC rules
- Project 25 Digital Standards

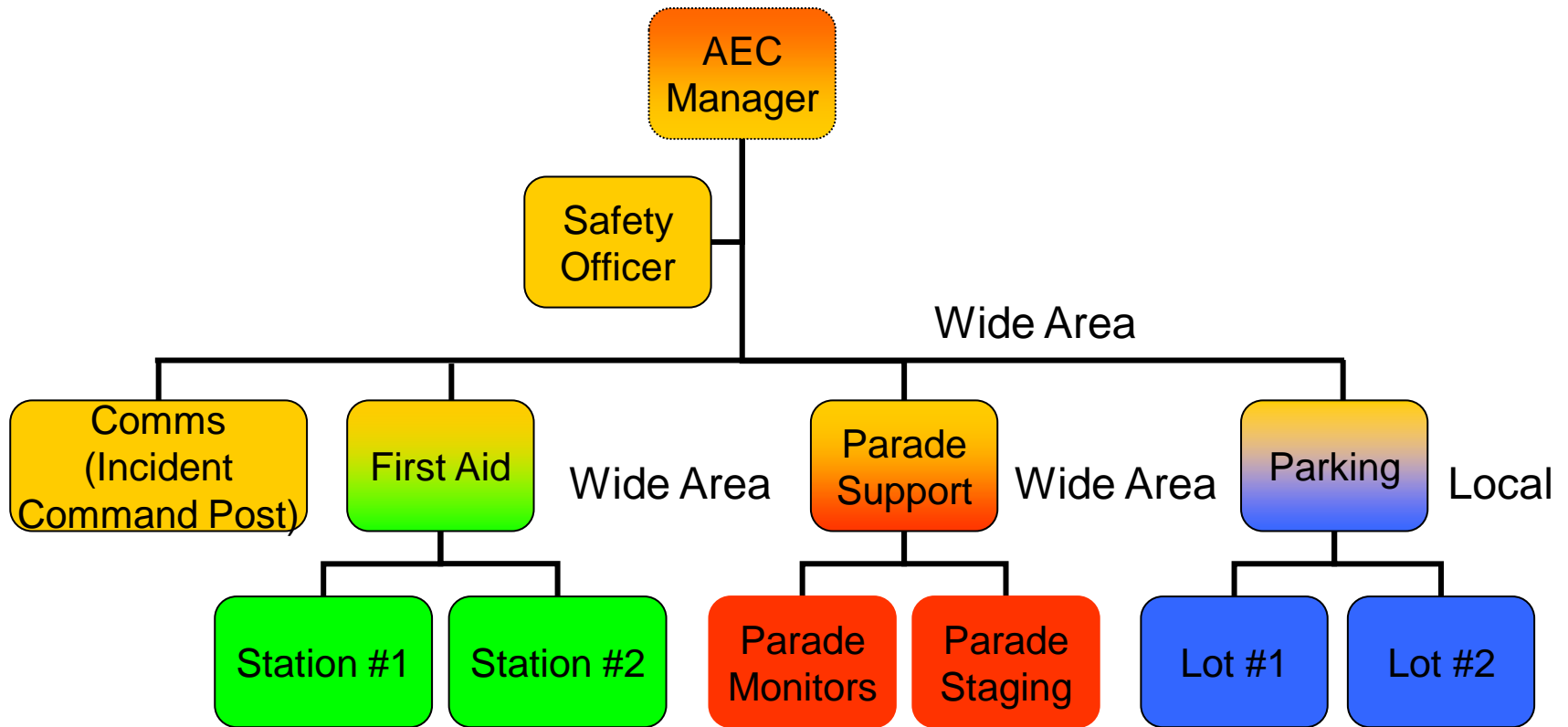


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# Functional Assignments



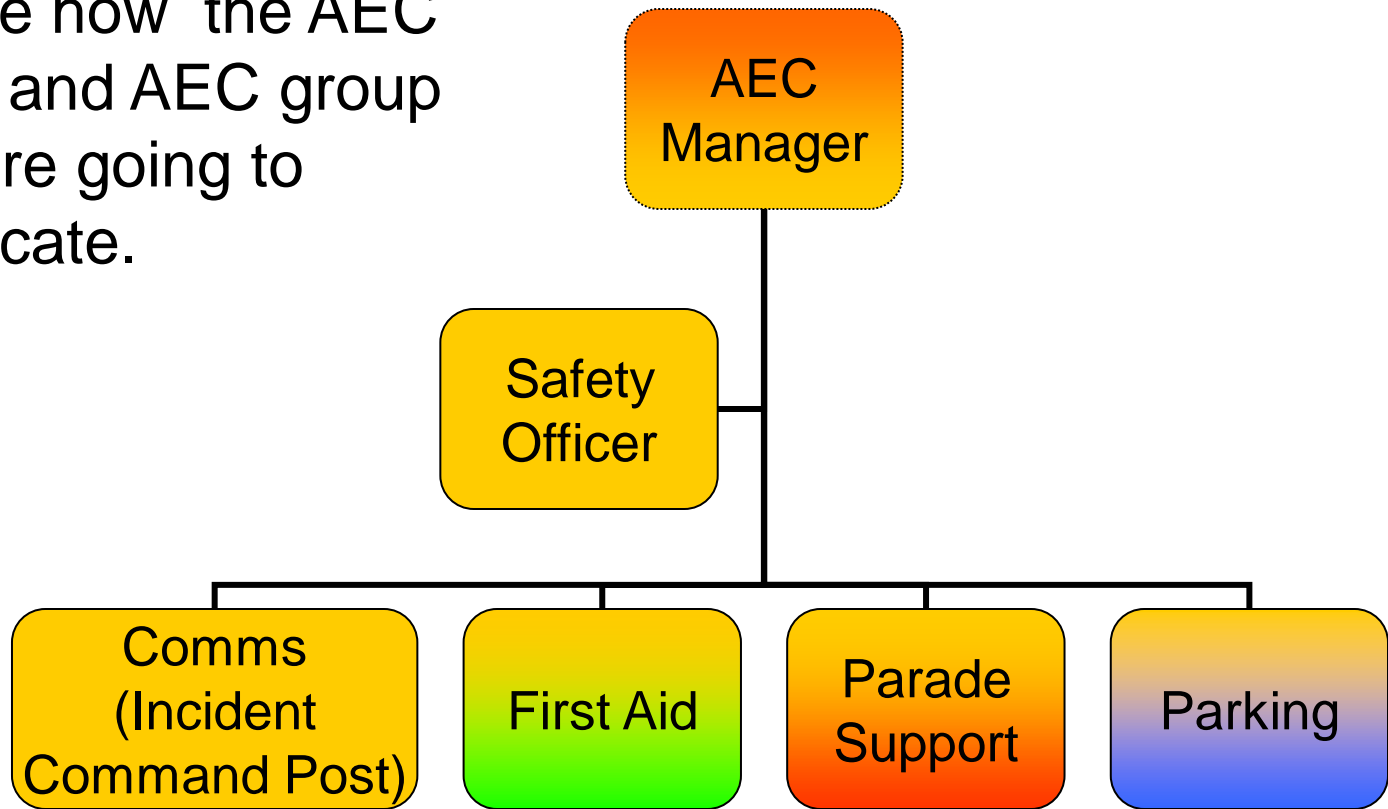
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# Functional Assignments (Cont)

Determine how the AEC Manager and AEC group leaders are going to communicate.



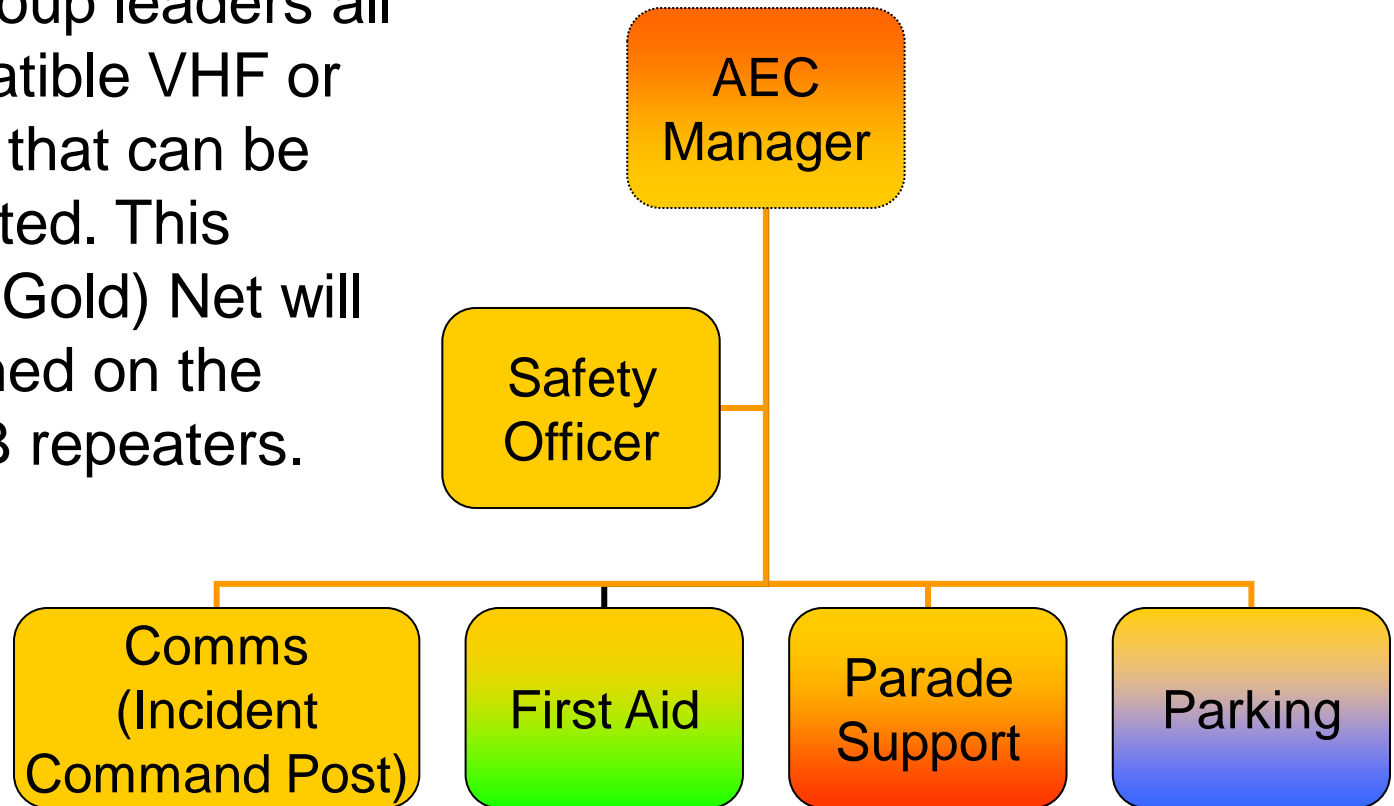
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# Functional Assignments (Cont)

The COML, AEC Manager and AEC group leaders all carry compatible VHF or UHF radios that can be interconnected. This Command (Gold) Net will be established on the linked KxAB repeaters.



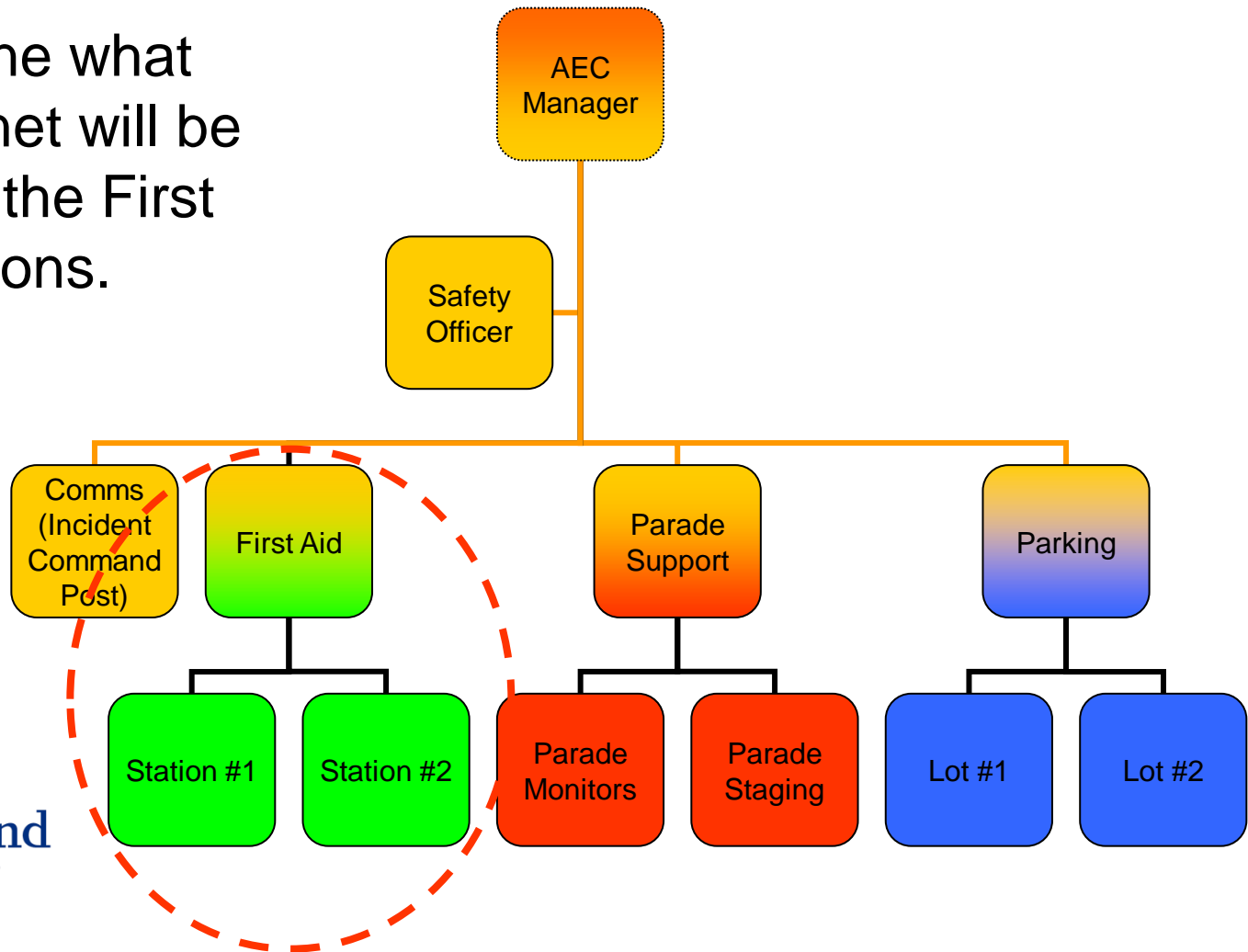
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# Functional Assignments (Cont)

Determine what tactical net will be used by the First Aid Stations.



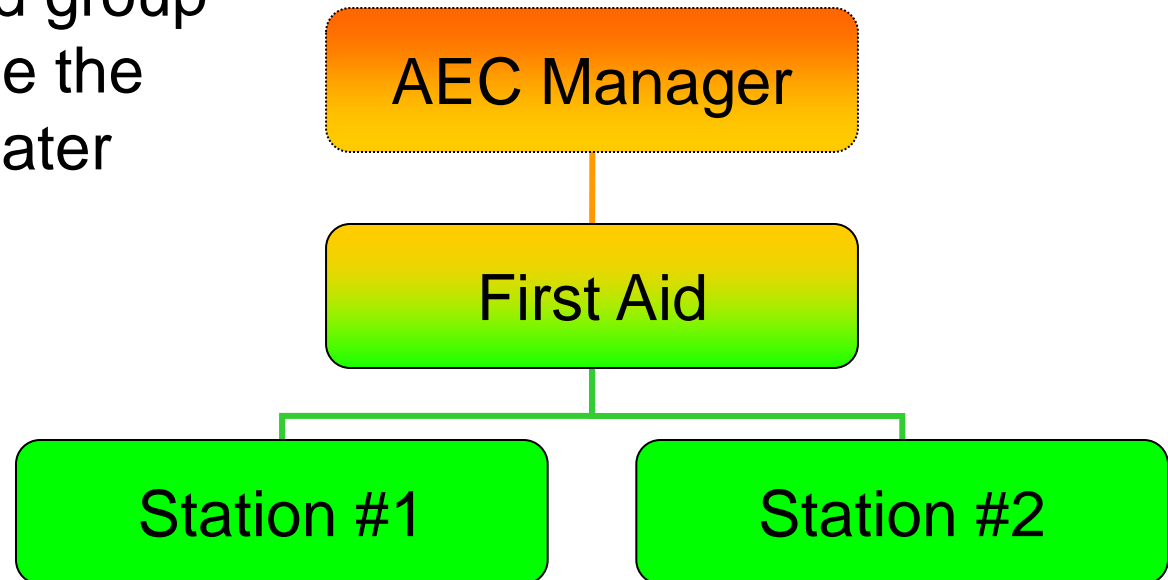
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# Functional Assignments (Cont)

All First Aid Station resources are local and carry VHF radios. The group leader and group members will use the KxIJK VHF repeater (Green Net).



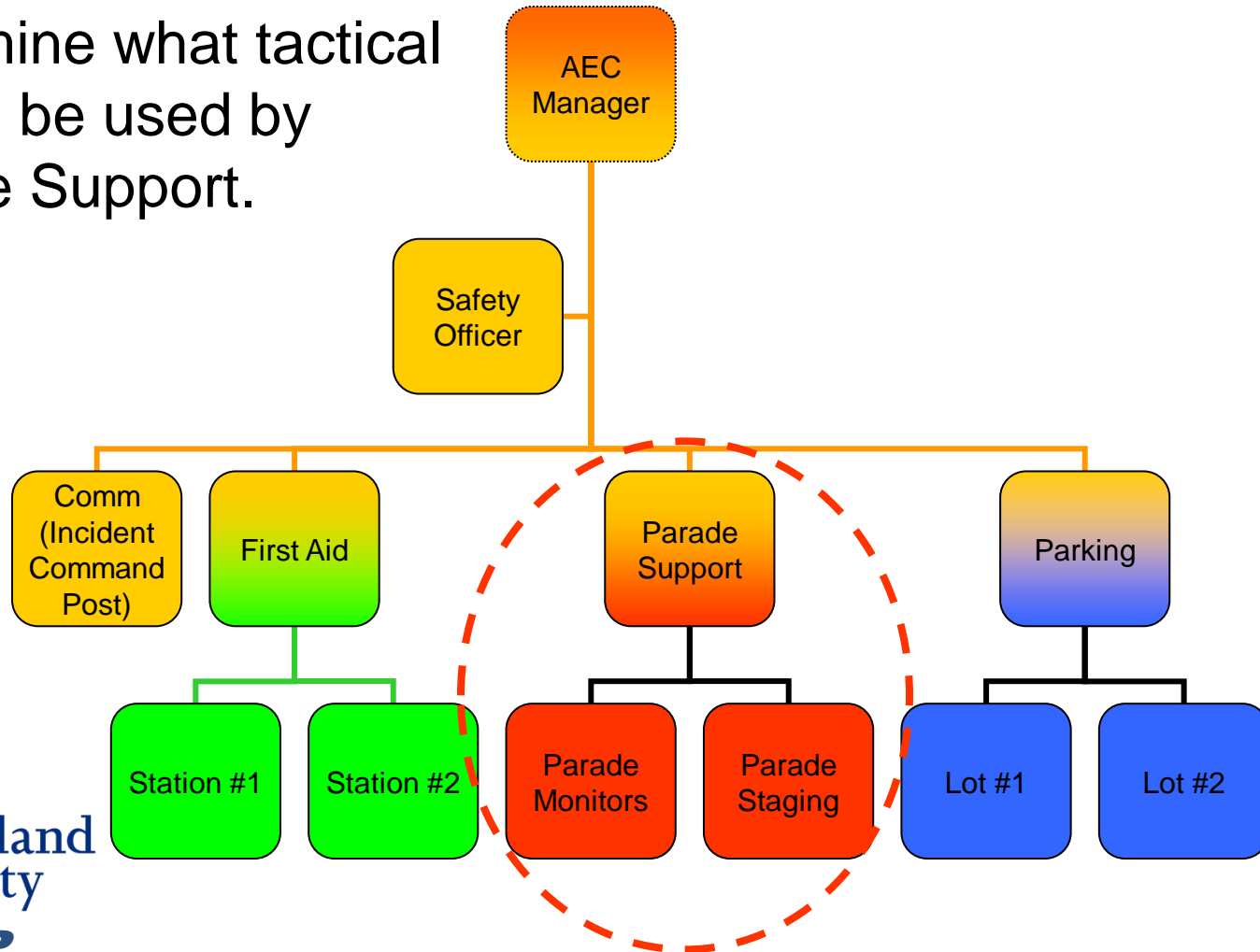
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# Functional Assignments (Cont)

Determine what tactical net will be used by Parade Support.



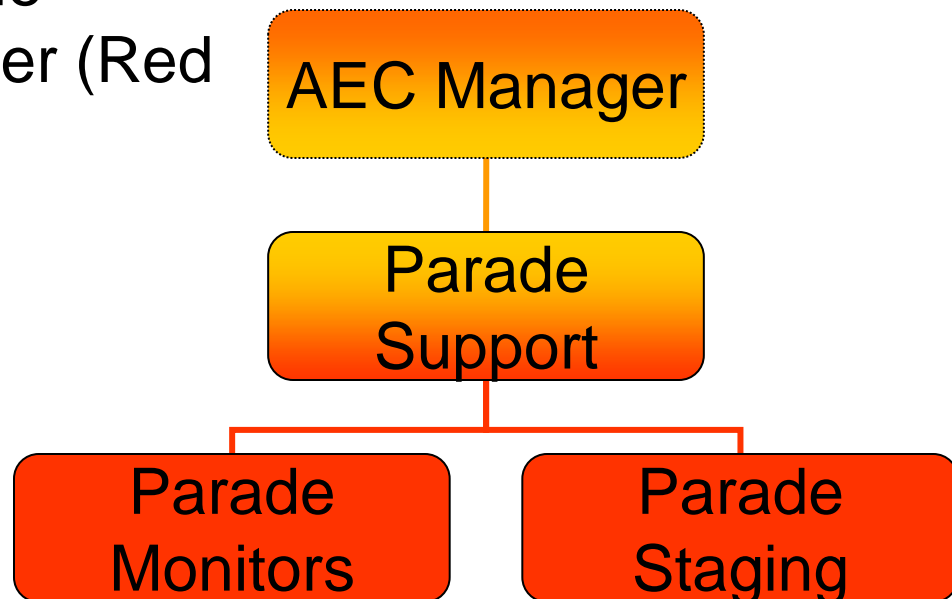
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# Functional Assignments (Cont)

All Parade Support resources carry dual band (VHF/UHF) radios. The group leader and group members will use the KxCDE UHF repeater (Red Net).



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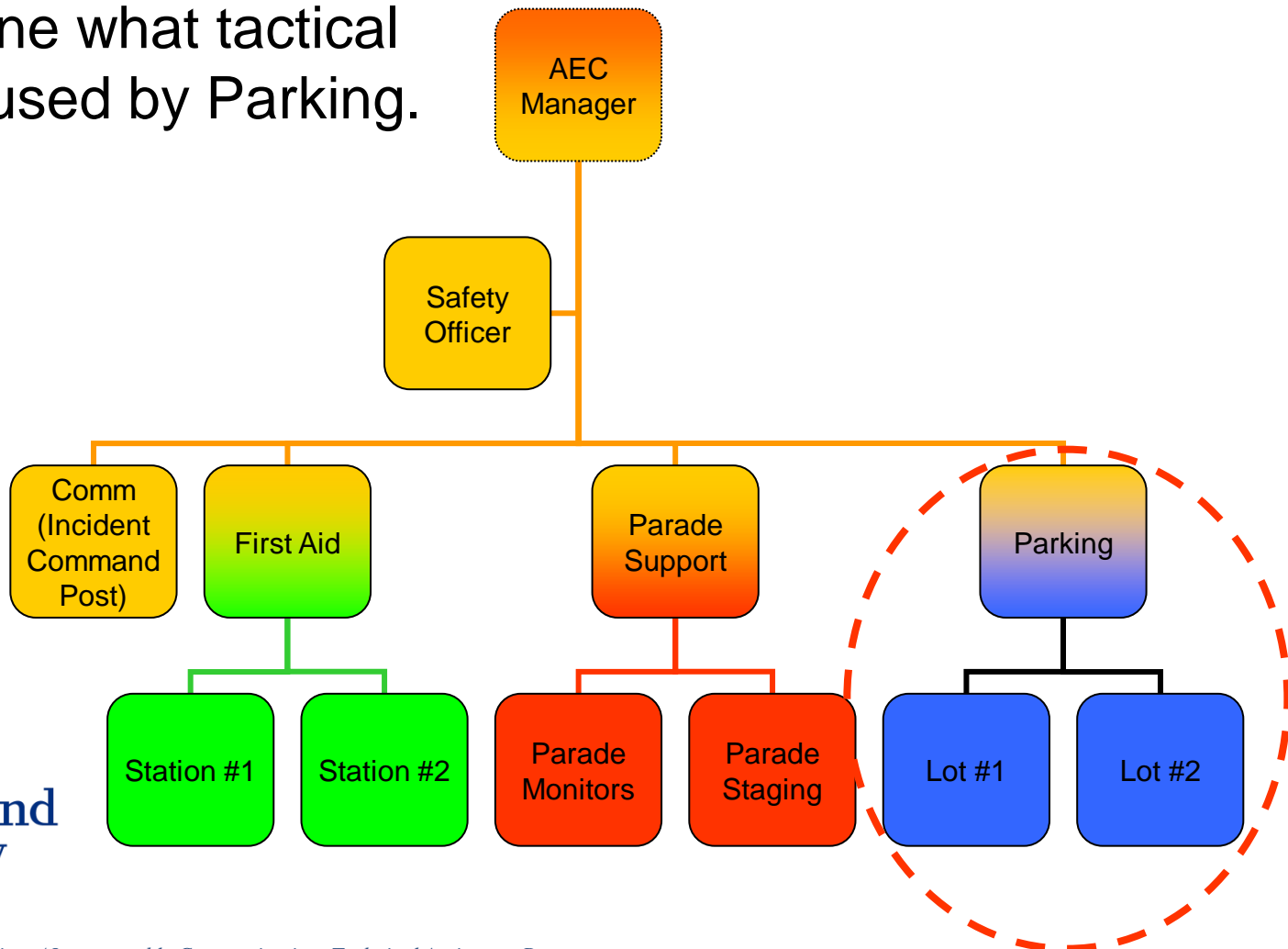
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# Functional Assignments (Cont)

Determine what tactical net will be used by Parking.



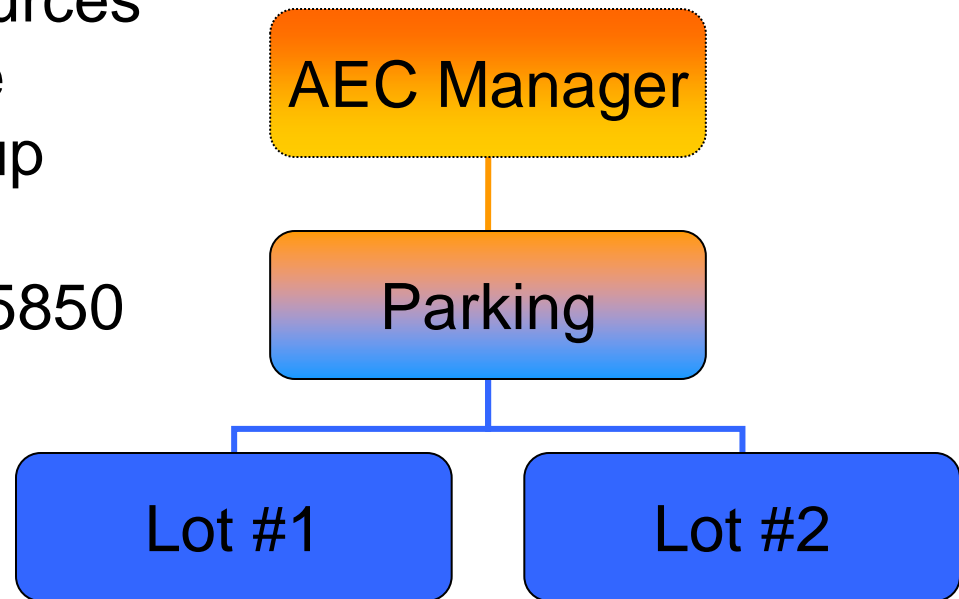
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# Functional Assignments (Cont)

All parking lots are in the same area of the Central City and parking resources carry VHF radios. The group leader and group members will use the simplex channel 147.5850 MHz (Blue Net).



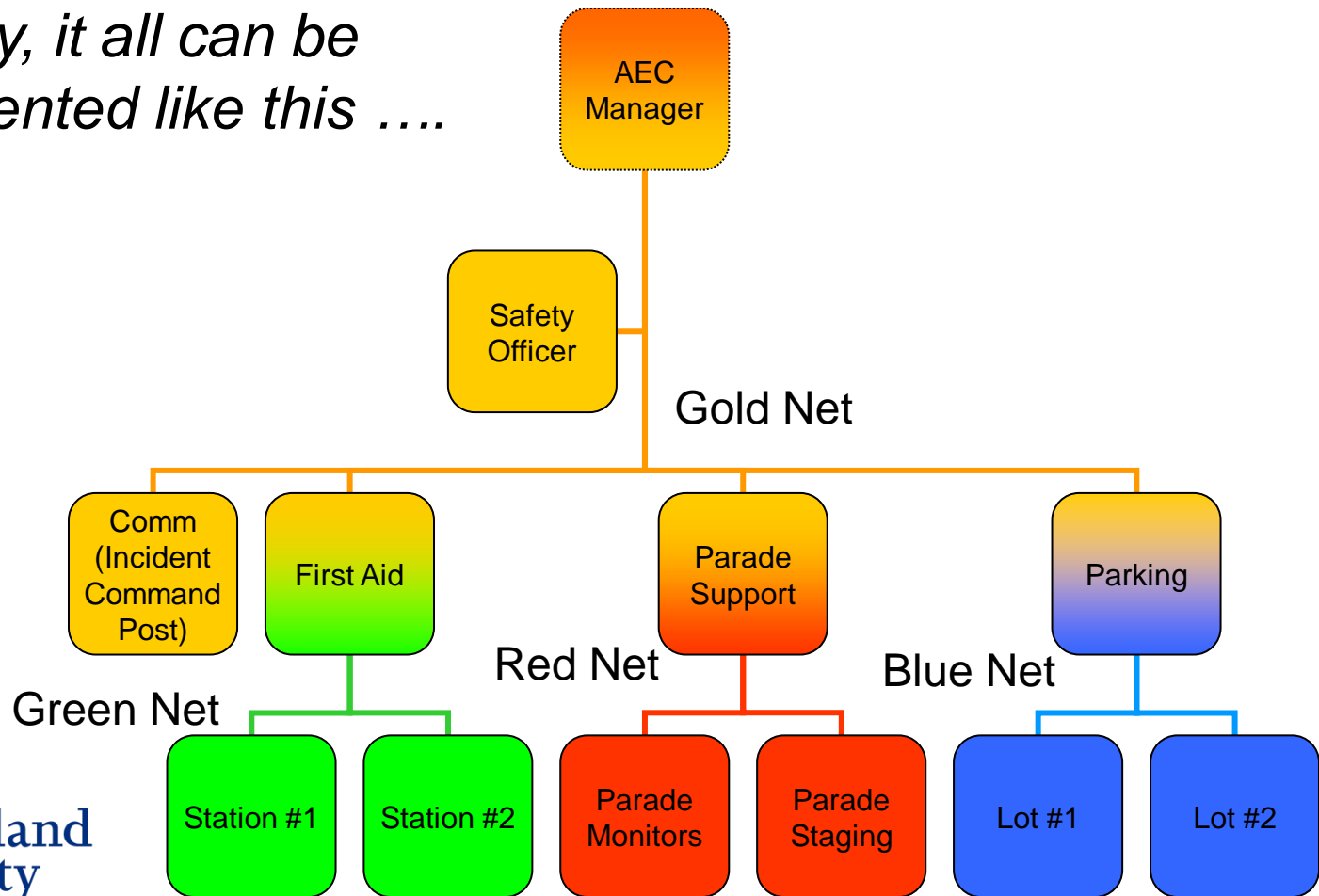
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# Functional Assignments (Cont)

Visually, it all can be represented like this ....



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# Functional Assignments (Cont)

- Management positions (typically) within the AEC Organizational Structure need to monitor and participate in radio nets both above and below them
- Two options are generally available to meet this requirement, carrying two radios or scanning
- A third option, if two bands are being used, is a dual band radio that allows simultaneous use of both bands



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# ICS Form 205 (AEC Communications)

INCIDENT RADIO COMMUNICATIONS PLAN			Incident Name <b>Parade</b>			Date/Time Prepared <b>July 1, 2011 1000 Hrs</b>		Operational Period Date/Time <b>July 4, 2011 0800 – 1800 Hrs</b>	
Ch #	Function	Channel Name/Trunked Radio System Talkgroup	Assignment	RX Freq N or W	RX Tone/NAC	TX Freq N or W	Tx Tone/NAC	Mode	Remarks
1	COMMAND	KxAB	Command	146.9400 W	100.0	146.3400 W	100.0	A	Gold Net (Linked to Line #2)
2	COMMAND	KxAB	Command	442.1000 W	141.3	447.1000 W	141.3	A	Gold Net (Linked to Line #1)
3	TACTICAL	KxIJK	First Aid	145.1450 W	CSQ	144.5450 W	123.0	A	Green Net
4	TACTICAL	KxCDE	Parade Mgt	442.2000 W	CSQ	447.2000 W	141.3	A	Red Net
5	TACTICAL	147.5850	Parking	147.5850 W	CSQ	147.5850	CSQ	A	Blue Net
6									
7		WxMNO	SPARE	147.19500 W	CSQ	147.7950 W	CSQ	A	
8		446.0000	SPARE	446.0000 W	CSQ	446.0000 W	CSQ	A	
5. Prepared by (Communications Unit) <b>Powell, K6UCB AEC Manager</b>				Incident Location <b>Central City 38-30-00 N 100-10-00 W</b>					



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# Completion of ICS Form 205

To Complete the ICS Form 205, first fill out header information:

<b>INCIDENT RADIO COMMUNICATIONS PLAN</b>			Incident Name <b>Parade</b>			Date/Time Prepared <b>July 1, 2011 1000 Hrs</b>		Operational Period Date/Time <b>July 4, 2011 0800 – 1800 Hrs</b>			
Ch #	Function	Channel Name/Trunked Radio System Talkgroup	Assignment	RX Freq	N or W	RX Tone/NAC	TX Freq	N or W	Tx Tone/NAC	Mode	Remarks
1											



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# Completion of ICS Form 205 (Cont)

Then complete each line, preferably by “copy/paste” from an already completed ICS Form 217A:

INCIDENT RADIO COMMUNICATIONS PLAN			Incident Name <b>Parade</b>			Date/Time Prepared <b>July 1, 2011 1000 Hrs</b>		Operational Period Date/Time <b>July 4, 2011 0800 – 1800 Hrs</b>		
Ch #	Function	Channel Name/Trunked Radio System Talkgroup	Assignment	RX Freq N or W	RX Tone/NAC	TX Freq N or W	Tx Tone/NAC	Mode	Remarks	
1	<b>COMMAND</b>	<b>KxAB</b>	<b>Command</b>	<b>146.9400 W</b>	<b>100.0</b>	<b>146.3400 W</b>	<b>100.0</b>	<b>A</b>	<b>Gold Net (Linked to Line #2)</b>	

Updating the Function, Assignment and Remarks columns as required for each line on the ICS Form 205 as it is added.



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# Completion of ICS Form 205 (Cont)

Until all nets are properly documented.

INCIDENT RADIO COMMUNICATIONS PLAN			Incident Name <b>Parade</b>		Date/Time Prepared <b>July 1, 2011 1000 Hrs</b>		Operational Period Date/Time <b>July 4, 2011 0800 – 1800 Hrs</b>		
Ch #	Function	Channel Name/Trunked Radio System Talkgroup	Assignment	RX Freq N or W	RX Tone/NAC	TX Freq N or W	Tx Tone/NAC	Mode	Remarks
1	COMMAND	KxAB	Command	146.9400 W	100.0	146.3400 W	100.0	A	Gold Net (Linked to Line #2)
2	COMMAND	KxAB	Command	442.1000 W	141.3	447.1000 W	141.3	A	Gold Net (Linked to Line #1)
3	TACTICAL	KxIJK	First Aid	145.1450 W	CSQ	144.5450 W	123.0	A	Green Net
4	TACTICAL	KxCDE	Parade Mgt	442.2000 W	CSQ	447.2000 W	141.3	A	Red Net
5	TACTICAL	146.5200	Parking	147.5850 W	CSQ	Simplex	CSQ	A	Blue Net



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# Completion of ICS Form 205 (Cont)

And not forgetting to complete the footer information!

5. Prepared by (Communications Unit)

**J Powell, K6UCB AEC Manager**

Incident Location **Central City 38-30-00 N 100-10-00 W**

The convention calls for frequency lists to show four digits after the decimal place, followed by either an “N” or a “W”, depending on whether the frequency is narrow or wide band. Mode refers to either “A” or “D” indicating analog or digital (Project 25).

**REMEMBER – the ICS Form 205 is part of the IAP!**



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# Exercise 5-2: ICS Form 205 Incident Radio Communications Plan

## Purpose/Objective

- Complete an ICS Form 205
- Identify security requirements for an ICS Form 205

## Instructions

- Review exercise 5-2 background, scenario, tasking, resources, parade map, and organization chart



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# Exercise 5-2: ICS Form 205 Incident Radio Communications Plan (Cont)

## Outputs

- Completed ICS Form 205 including security requirements
- Present and discuss results per individual or group

**Exercise Duration: 1 hour**



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# Background

- Annually on July 4, the Central City holds the largest parade in the region drawing from 5,000 to 7,500 attendees, including entrants
- The parade typically draws from 75 to 100 entrants (bands, floats, etc.) from throughout the state
- The parade route is 1.25 miles long along the east bank of the Central River
- The parade starts at 10 am local time and is typically over by 12:30 pm



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# Scenario

- Because Central City is a small community, it relies heavily on volunteer support through its Community Emergency Response Team to its public safety agencies for large events such as the July 4 parade
- The July 4 parade is managed by the Fire & Police Chiefs and Emergency Manager using a unified command structure (see Organization Chart)



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# Scenario (Cont)

- Central City provides parade monitors along the entire route of the parade to keep the parade flowing and to watch for disruptions and people in need of first aid or other special attention
- Central City provides a first aid station and rest area for attendees



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# Tasking

- The Emergency Manager (EM) has called the Central City's Community Emergency Response Team (CERT), asking for the following CERT support, including communications support from the AEC Manager
- Place no more than two AEC Communicators at the Command Post (located in a Command Vehicle near the Reviewing Stand) to relay AEC radio traffic between Command and AEC Communicators staffing field activities



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# Tasking (Cont)

- Emergency Manager's request (Cont)
  - Provide AEC shadows to the 3 parade management staff handling parade staging in the assembly area near the start of the parade
  - Provide AEC shadows to the 6 parade monitors spread every .25 miles along the route to monitor parade flow and report problems



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# Tasking (Cont)

- Emergency Manager's request (Cont)
  - Provide AEC Communicators at the First Aid Station to report urgent care requirements to the Command Post and to assist with dispatching EMS or first aid volunteers to field incidents reported by any parade personnel or CERT volunteers



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# Tasking (Cont)

- Emergency Manager's request (Cont)
  - Central Fire Department dispatches EMS which is provided by a private ambulance company that has its own UHF radio system using UHF Med Channels for dispatch and hospital communications



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# Tasking (Cont)

- Emergency Manager's request (Cont)
  - Provide radio-equipped CERT members to staff entrances to two public parking lot entrances and assist motorists into lots, reporting parking lot status and any first aid/safety needs to the Command Post



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# Resources

- 15 CERT members serving the Central City area who are licensed Amateur Radio operators. Ten will have dual band (VHF/UHF) radios and five will have no radios
- Central City's Command Vehicle is equipped with two VHF and one UHF Amateur radio station



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# Resources (Cont)

- Central City has a cache of 5 VHF portables of the same model used by fire and police, and typically used for special events
- These radios are front-panel programmable and cover the frequency range of 138 to 174 MHz. Each has a rechargeable battery plus AA battery clamshell for backup














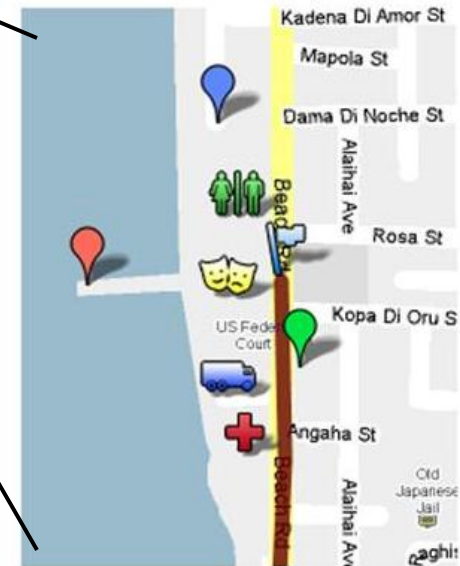
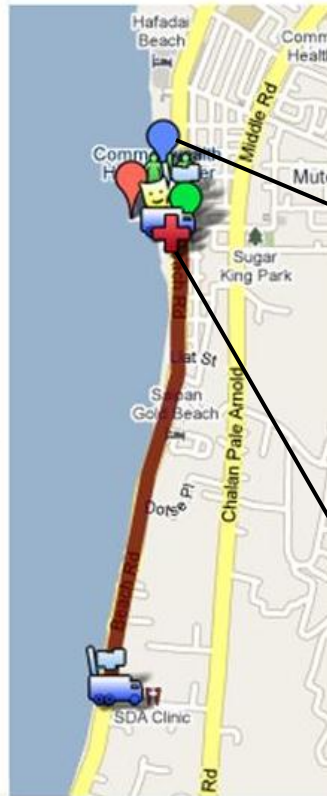
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# Exercise 5-2: Planned Event: Parade Map

-  [Parade Starting Point](#)  
Assembly Area
-  [Parade End Point](#)
-  [Reviewing Stand/ICP](#)  
In this position if in the AM
-  [Fire/EMS Staging](#)
-  [Restrooms](#)
-  [Carnival](#)
-  [Fire/EMS Rescue unit](#)  
Follows the Parade as it proceeds to provide services
-  [CHC](#)
-  [Debarkation](#)
-  [First Aide Station](#)
-  [Fireworks \(if possible\)](#)
-  [Parade Route](#)

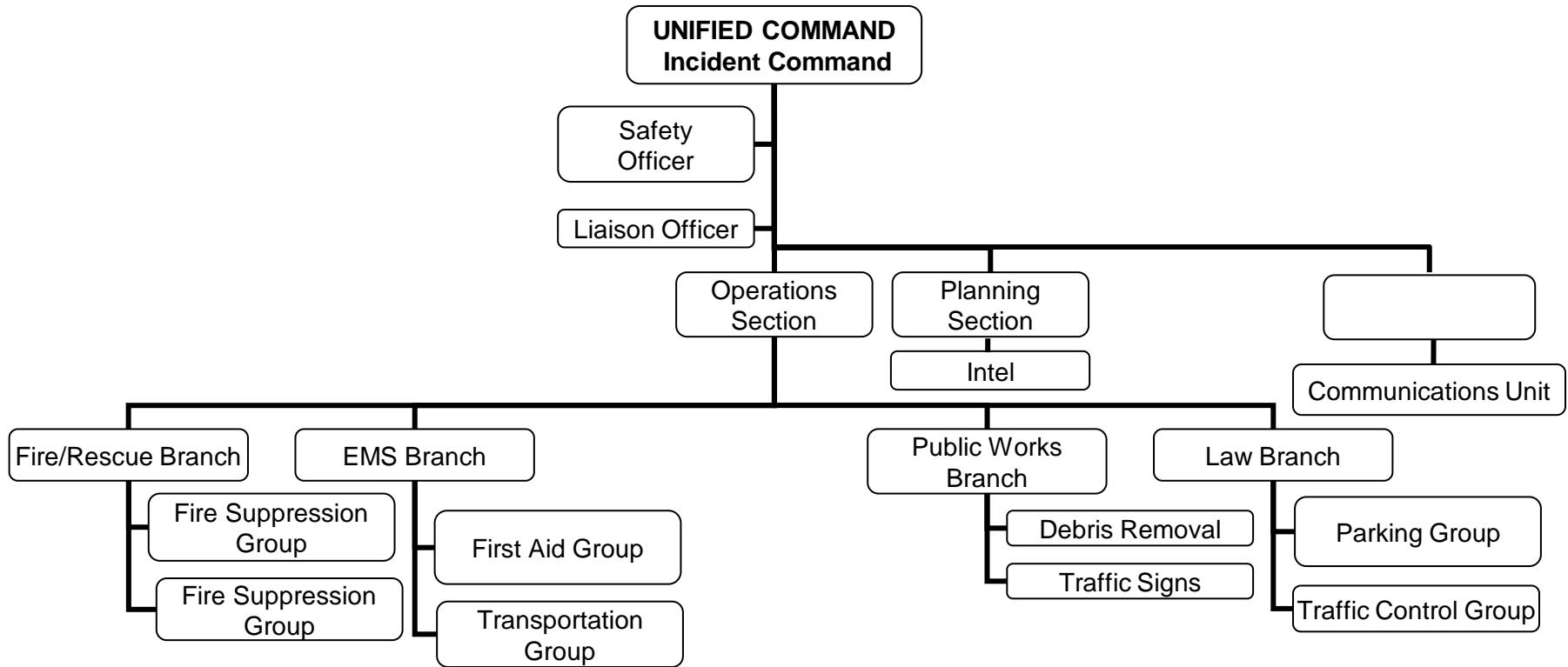


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# Exercise 5-2: Planned Event Parade Organization Chart



Use this org chart as reference to support the incident



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# Unit 5: Summary

- 1) Completed ICS Form 217A, the Communications Resource Availability Worksheet.
- 2) Completed ICS Form 205, the Incident Radio Communications Plan.
- 3) Identified security requirements for ICS Forms 217A and 205.



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