

# Auxiliary Emergency Communications (AEC)

## Training Course

### Unit 5: Incident Radio Communications Plan



Homeland Security

**OEC/ICTAP**

Office of Emergency Communications / Interoperable Communications Technical Assistance Program

---

---

---

---

---

---

---

---

## 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



**OEC/ICTAP**

Office of Emergency Communications / Interoperable Communications Technical Assistance Program

AEC UNIT 5 - INCIDENT RADIO COMMUNICATIONS PLAN 2

---

---

---

---

---

---

---

---

## ICS Form 217A: Communications Resource Availability Worksheet

- Purpose
- Preparation
- Distribution



**OEC/ICTAP**

Office of Emergency Communications / Interoperable Communications Technical Assistance Program

AEC UNIT 5 - INCIDENT RADIO COMMUNICATIONS PLAN 3

---

---

---

---

---

---

---

---

**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



---

---

---

---

---

---

---

---

**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



---

---

---

---

---

---

---

---

**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



---

---

---

---

---

---

---

---

## 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

AEC UNIT 5 - INCIDENT RADIO COMMUNICATIONS PLAN

## 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				

AEC UNIT 5 - INCIDENT RADIO COMMUNICATIONS PLAN

## 217A for Group Exercises (Cont)

COMMUNICATIONS RESOURCE AVAILABILITY WORKSHEET		Frequency Band		Description							
ICS 217-A Page 2 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											
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

AEC UNIT 5 - INCIDENT RADIO COMMUNICATIONS PLAN

## ICS Form 205: Incident Radio Communications Plan

- Purpose
- Preparation
- Distribution



Office of Emergency Communications / Interoperable Communications Technical Assistance Program

AEC UNIT 5 - INCIDENT RADIO COMMUNICATIONS PLAN 10

---

---

---

---

---

---

---

---

## 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?



Office of Emergency Communications / Interoperable Communications Technical Assistance Program

AEC UNIT 5 - INCIDENT RADIO COMMUNICATIONS PLAN 11

---

---

---

---

---

---

---

---

## 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



Office of Emergency Communications / Interoperable Communications Technical Assistance Program

AEC UNIT 5 - INCIDENT RADIO COMMUNICATIONS PLAN 12

---

---

---

---

---

---

---

---

## 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



Office of Emergency Communications / Interoperable Communications Technical Assistance Program

13

AEC UNIT 5 - INCIDENT RADIO COMMUNICATIONS PLAN

---

---

---

---

---

---

---

---

## 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



Office of Emergency Communications / Interoperable Communications Technical Assistance Program

14

AEC UNIT 5 - INCIDENT RADIO COMMUNICATIONS PLAN

---

---

---

---

---

---

---

---

## 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



Office of Emergency Communications / Interoperable Communications Technical Assistance Program

15

AEC UNIT 5 - INCIDENT RADIO COMMUNICATIONS PLAN

---

---

---

---

---

---

---

---

## 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

---

---

---

---

---

---

---

---

## Incident Radio Communications Plan Sensitive Information (Cont)

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

---

---

---

---

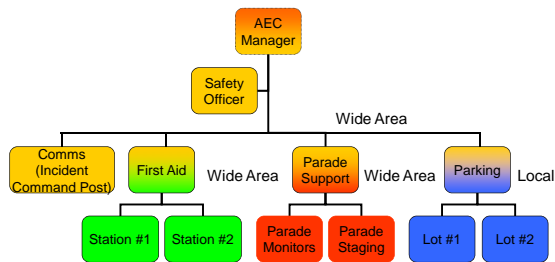
---

---

---

---

## Functional Assignments




---

---

---

---

---

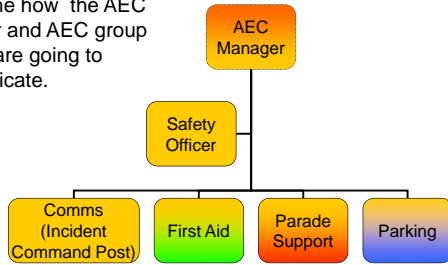
---

---

---

## Functional Assignments (Cont)

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



---

---

---

---

---

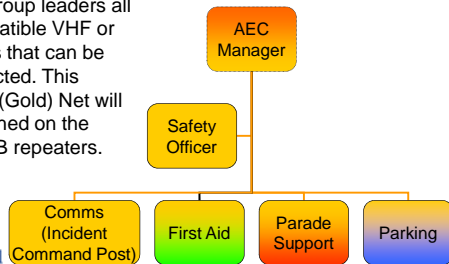
---

---

---

## 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.



---

---

---

---

---

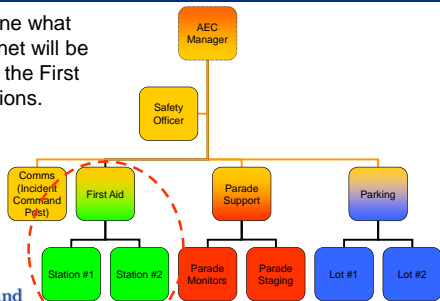
---

---

---

## Functional Assignments (Cont)

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



---

---

---

---

---

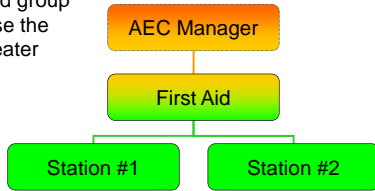
---

---

---

## 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).




---

---

---

---

---

---

---

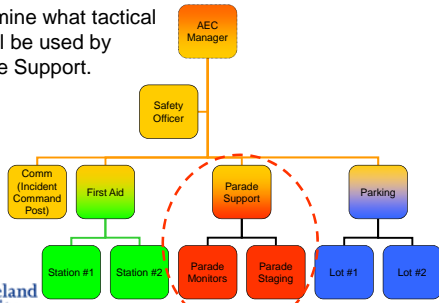
---

---

---

## Functional Assignments (Cont)

Determine what tactical net will be used by Parade Support.




---

---

---

---

---

---

---

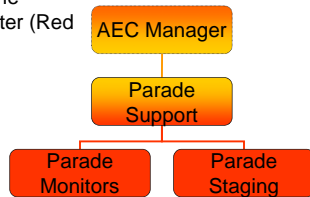
---

---

---

## 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).




---

---

---

---

---

---

---

---

---

---









## 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



Office of Emergency Communications / Interoperable Communications Technical Assistance Program

AEC UNIT 5 - INCIDENT RADIO COMMUNICATIONS PLAN 34

---

---

---

---

---

---

---

---

## 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



Office of Emergency Communications / Interoperable Communications Technical Assistance Program

AEC UNIT 5 - INCIDENT RADIO COMMUNICATIONS PLAN 35

---

---

---

---

---

---

---

---

## 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



Office of Emergency Communications / Interoperable Communications Technical Assistance Program

AEC UNIT 5 - INCIDENT RADIO COMMUNICATIONS PLAN 36

---

---

---

---

---

---

---

---

## 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)



Office of Emergency Communications / Interoperable Communications Technical Assistance Program

---

---

---

---

---

---

---

---

## 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



Office of Emergency Communications / Interoperable Communications Technical Assistance Program

---

---

---

---

---

---

---

---

## 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



Office of Emergency Communications / Interoperable Communications Technical Assistance Program

---

---

---

---

---

---

---

---

## 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



Office of Emergency Communications / Interoperable Communications Technical Assistance Program

---

---

---

---

---

---

---

---

## 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



Office of Emergency Communications / Interoperable Communications Technical Assistance Program

---

---

---

---

---

---

---

---

## 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



Office of Emergency Communications / Interoperable Communications Technical Assistance Program

---

---

---

---

---

---

---

---

## 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



Office of Emergency Communications / Interoperable Communications Technical Assistance Program

43

AEC UNIT 5 - INCIDENT RADIO COMMUNICATIONS PLAN

---

---

---

---

---

---

---

---

## 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



Office of Emergency Communications / Interoperable Communications Technical Assistance Program

44

AEC UNIT 5 - INCIDENT RADIO COMMUNICATIONS PLAN

---

---

---

---

---

---

---

---

## 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



Office of Emergency Communications / Interoperable Communications Technical Assistance Program

45

AEC UNIT 5 - INCIDENT RADIO COMMUNICATIONS PLAN

---

---

---

---

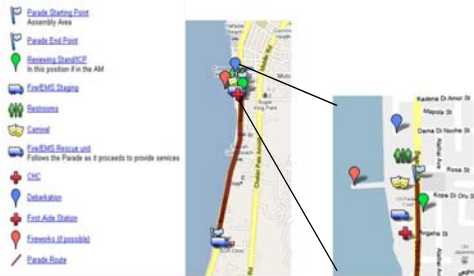
---

---

---

---

## Exercise 5-2: Planned Event: Parade Map



Office of Emergency Communications / Interoperable Communications Technical Assistance Program

AEC UNIT 5 - INCIDENT RADIO COMMUNICATIONS PLAN 46

---

---

---

---

---

---

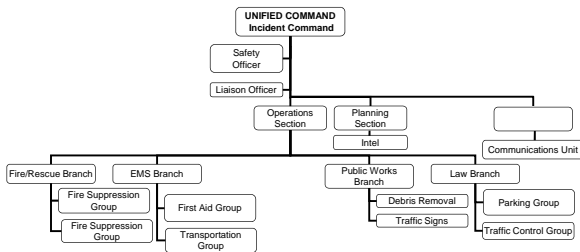
---

---

---

---

## Exercise 5-2: Planned Event Parade Organization Chart



Use this org chart as reference to support the incident



Office of Emergency Communications / Interoperable Communications Technical Assistance Program

AEC UNIT 5 - INCIDENT RADIO COMMUNICATIONS PLAN 47

---

---

---

---

---

---

---

---

---

---

# 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.



Office of Emergency Communications / Interoperable Communications Technical Assistance Program

AEC UNIT 5 - INCIDENT RADIO COMMUNICATIONS PLAN 48

---

---

---

---

---

---

---

---

---

---





# Homeland Security

## **OEC/ICTAP**

*Office of Emergency Communications / Interoperable Communications Technical Assistance Program*

---

---

---

---

---

---

---

---