Emergency Communications

Community Emergency Response Team

Introduction to Radio Communications

James Knighton   (WJ2K)

President, Amateur Radio Euless

Introduction

- Effective communications is the greatest logistical problem during an emergency event

- CERT volunteers can be part of the solution

Overview

- Role of CERT emergency communications during an activation

- Communications plans

- Communication modes

- Basic radio anatomy

- Communications operations

- Practical exercises

Role of CERT Emergency Communications

- Intra-team communications
  - Allows volunteers to quickly and effectively communicate with each other
  - Essential for functions such as light search and rescue and when dealing with large crowds

Role of CERT Emergency Communications

- Communicating up to the next level
  - Tiers of communication
  - CERT volunteers are "eyes and ears"

Role of CERT Emergency Communications

- Effective communications promotes safety
  - Calling for help when needed
  - Reporting safety-related incidents or concerns
  - Accountability – Team leader keeping track of team members

Communications Plan

- What is a communications plan?
    - Logistical emergency plan
    - Who communicates to whom
    - How information flows
    - Communications is a part of all ICS Sections

Communications Plan

- CERT Communications Plan
  - How the CERTs are activated and volunteers are contacted
  - How CERT members communicate with each other
  - How CERT communicates with other emergency responders

Communications Plan

● ICS 205

INCIDENT RADIO COMMUNICATIONS PLAN (ICS 205)

| 1. Incident Name: EULESS CERT TEAM | 2. Date/Time Prepared: Date: Time: | | 3. Operational Period Date From: Time From: | Date To: Time To: |

| 4. Basic Radio Channel Use: |

Zone GRP	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 (A, D, or M)	Remarks
	8	CERT Command	CERT OPS		467.5625	136.5			A	Cert Operations Inter-Team Communications
	9	Team Comms	RED Team		467.5875	136.5			A	
	10	Team Comms	GREEN Team		467.6125	136.5			A	
	11	Team Comms	WHITE Team		467.6375	136.5			A	
	12	Team Comms	ORANGE Team		467.6625	136.5			A	
	13	Team Comms	BLUE Team		467.6875	136.5			A	
	14	Team Comms	BROWN Team		467.7125	136.5			A	

| 5. Special Instructions: |

| 6. Prepared by (Communications Unit Leader): | Name: | Signature: |

| ICS 205 | IAP Page | Date/Time: |

CERT Team with Radios
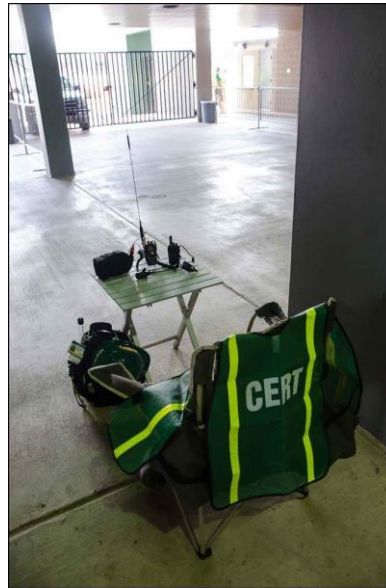
Communication Modes

	License	Personal	Business	Range
Family Radio Service	**N**	**Y**	**N**	**1-2 mi Average**
General Mobile Radio Service	(5 Yrs)	Y	Y	Varies
Citizens Band Radio	N	Y	Y	155.3 mi MAX
Amateur Radio	(10 Yrs)	Y	N	Unlimited

Euless CERT will use: FRS and Amateur Radios

Transmit Distance Compared
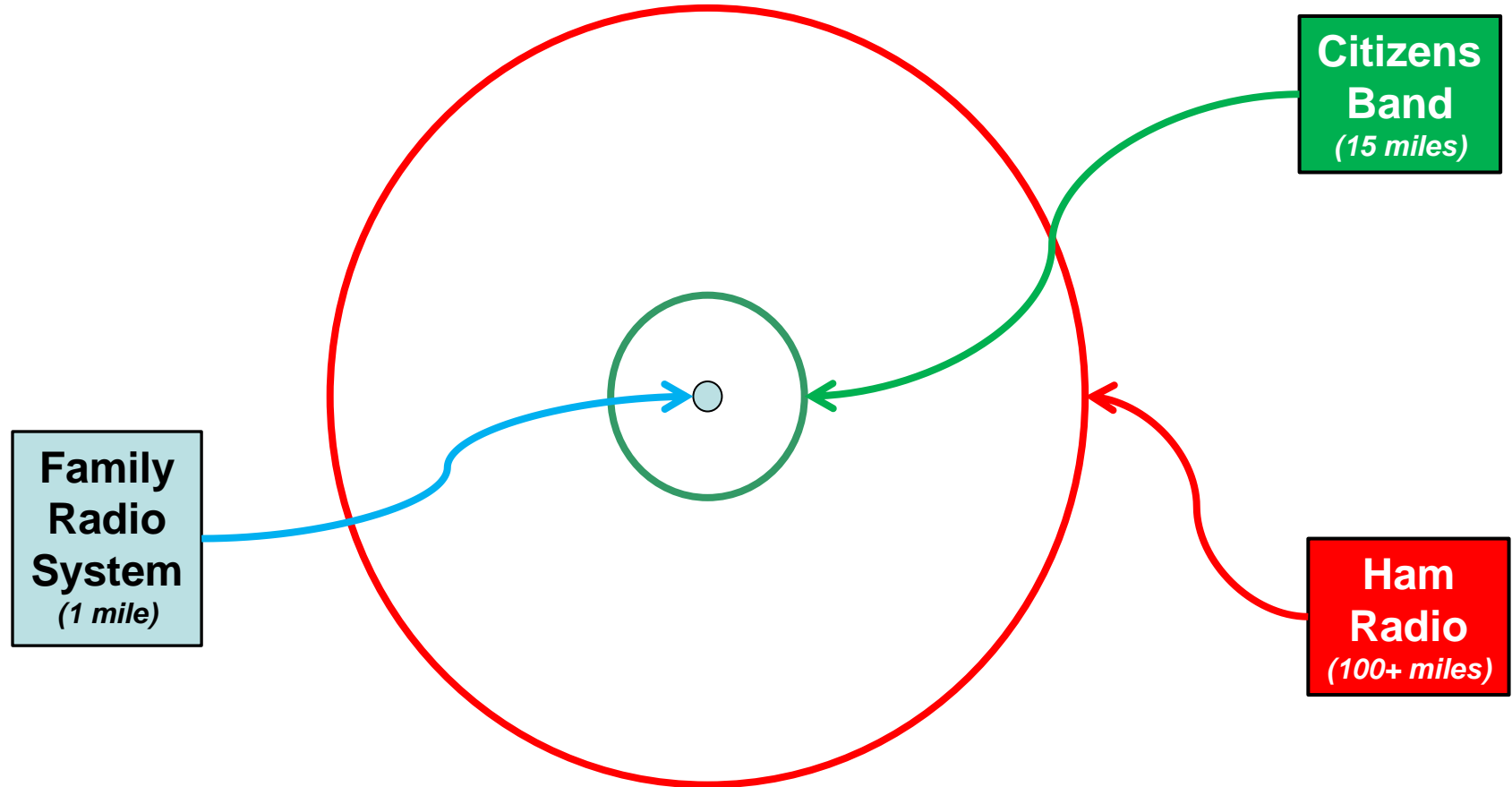
Citizens Band *(15 miles)*

Family Radio System *(1 mile)*

Ham Radio *(100+ miles)*

Transmit Distance Compared
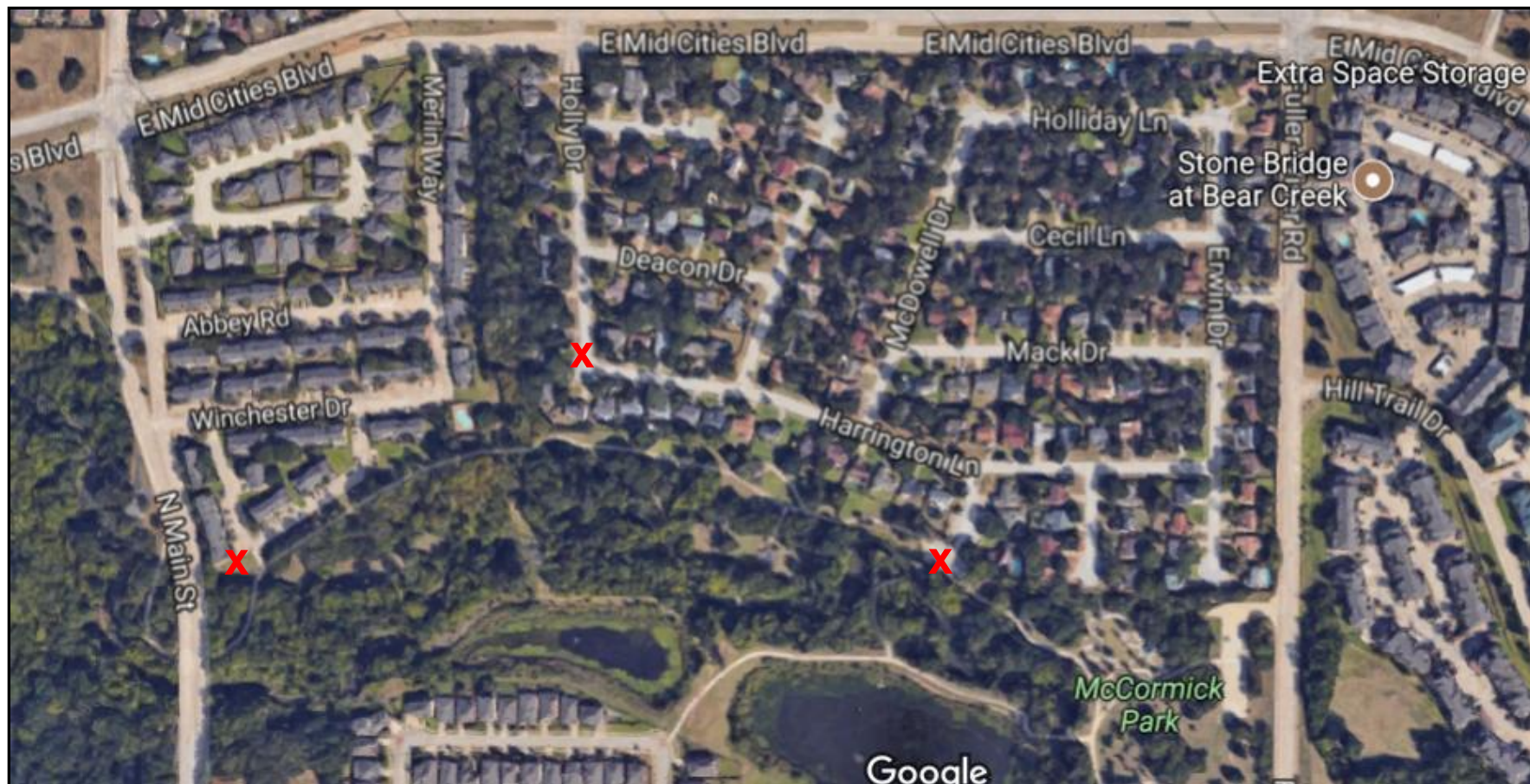
How Euless CERT will use Radios
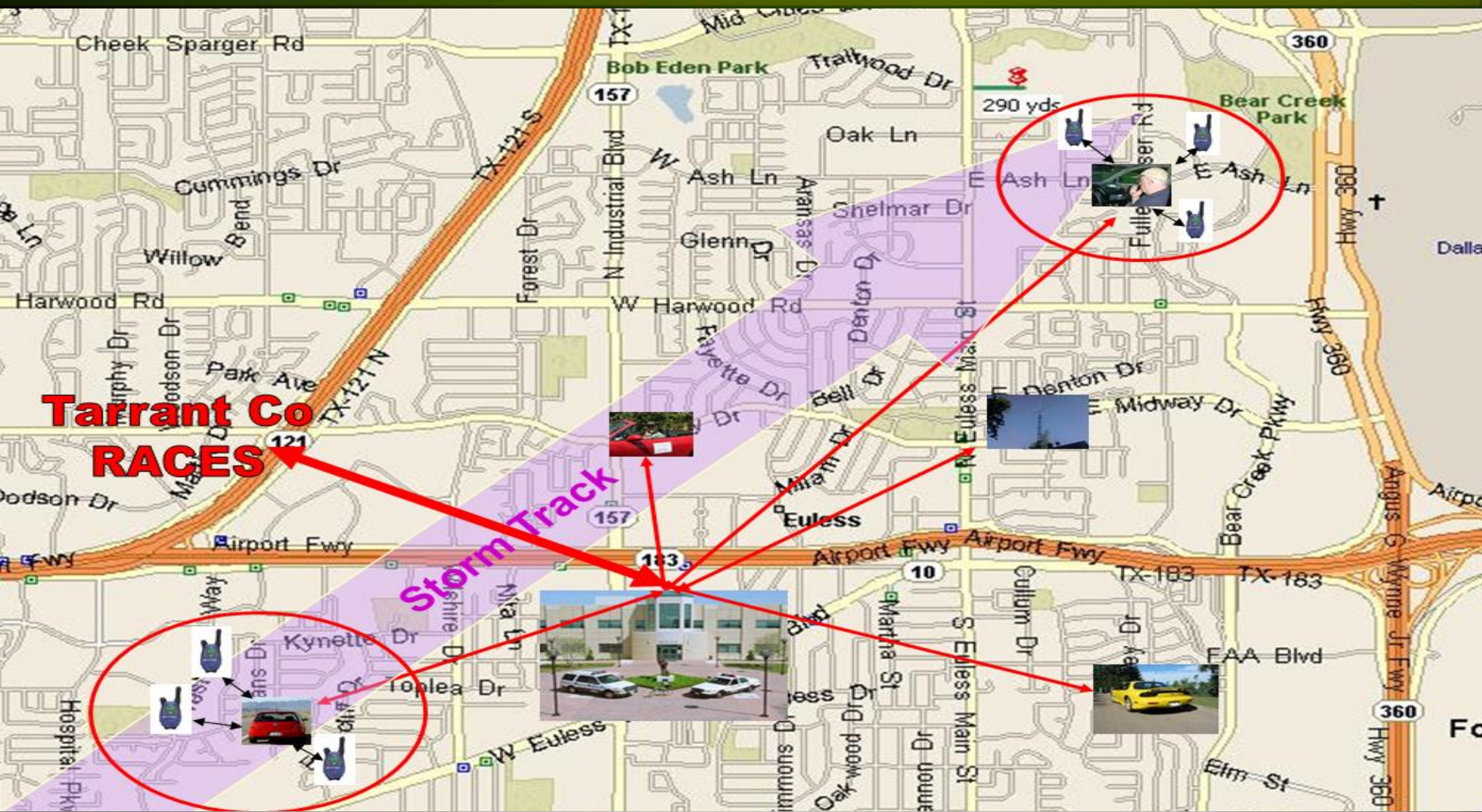
Two-way Radios

- How they work
  - Frequencies
  - Channels
  - Range
    - ❖ Antenna, power level, atmospheric conditions

Two-way Radios (cont'd)

- Family Radio Service (FRS)
  - Advantages
    - Inexpensive
    - Widely used
    - No license required
    - Range up to 1 mile (varies with terrain)
    - 14 channels
    - Best used for intra-team communications

Two-way Radios (cont'd)

- FRS
  - Limitations
    - Low Power
    - Line of Sight
    - Handheld only
    - Cannot alter radio (no antennas) = Limited range

Two-way Radios (cont'd)

- Amateur Radio (a.k.a. ham radio)
  - Advantages
    - Range in excess of 100 miles with repeaters
    - Does not use public infrastructure
    - Good availability
    - Moderately priced
    - Handheld, mobile, and base stations available

Two-way Radios (cont'd)

- ## Amateur Radio

  - ### Limitations

    - ❖ Requires license
    - ❖ No business use
    - ❖ Operators cannot be paid

Image from: http://www.icomamerica.com/images/products/large/91A_91AD_1.jpg

Basic Radio Anatomy

Volume & On/Off Switch

Antenna

Microphone

Push-to-Talk Button (PTT)

Speaker

Radio Use

- Not a Telephone
- Transmissions are not private
- No Personal information
- Transmit only when you have information for Control or Team Communications
- If they are not talking to you "Don't Talk"

Radio Use (cont'd)

- Push – Pause - Talk
    - Wait a fraction of a second after pushing the "talk" button
    - This avoids "clipping" off the first syllable

Radio Use (cont'd)

- Speak across the microphone
- Speak in a normal voice
- Repeat Critical Information
- Confirm information was received

Pro-Words

- "This Is"
- "Over"
- "Go Ahead"
- "Out"
- "Affirmative"
- "Negative"

Tactical Call Signs

- Assigned by Incident Command
- Based on function and location
- Names are not needed
- Tactical call signs do not change for duration of assignment

Standard Message Format

Call: "Hey You" **THIS IS** "Me" **OVER**

Answer: **THIS IS** "Station Called" **GO AHEAD**

Response: "Transmit Message" **OVER**

Acknowledgement: "Message Repeated" **OUT**

Standard Message Example

Initial call: "<u>RED HAM</u>, **THIS IS** <u>RED ONE</u> **OVER**"

The answer: "**THIS IS** <u>RED HAM</u>, **OVER**"

The response "<u>We have a critical bleeding victim at 319 Main Street. We need a medic as soon as possible.</u> **OVER**"

The acknowledgement

"<u>You have a critical bleeding victim at 319 Main Street and need a medic as soon as possible.</u> **OVER**"

The response "<u>RED ONE</u> **OUT**"

Practical Exercises

- Live Fire Exercise
- Divide into Teams
- Use ICS Structure
- Use Radios to report status

Module Summary

- Communications is a key component of emergency response
- CERTs assist emergency response agencies by communicating through ICS
- Communication plans define how to communicate during emergency response
- Each communication mode has advantages and limitations
- Achieve effective communication by using radio operation, tactical call signs, pro-words, phonetic alphabet, and basic protocols
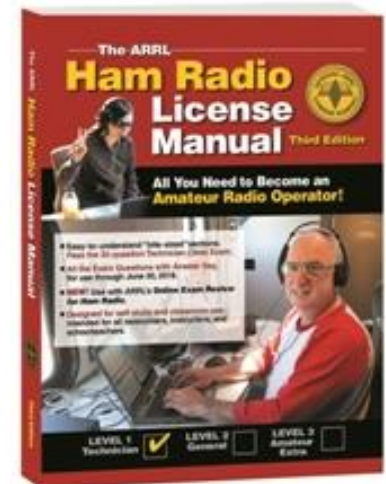
Amateur Radio Class

- Technician License Class
- 6 weeks 1 night a week
- $14.00 test fee

www.w5eul.com
info@w5eul.com

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Thank you!