Personal
Radio
Fun

YouTube channel

Legally Securing Your Comms

Methods for standard handheld radios

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Define

- Make it harder for an eavesdropper
- Focus on handheld radios
- Don't give out important information that can be used to figure out:
  - Who you are
  - Where you are
  - Exactly what you are doing

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First Steps

- Monitor the channels / frequencies to find out what is normal use for your area.
  - Check repeater books also
- Get licensed if using Amateur Radio or GMRS
- Figure out which plans you will implement
- Find out what friends are already using
- Buy radios

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Monitor the channels / frequencies to find out what is normal use for your area

"My" GMRS

CH 18

CTCSS 67.0

REPORT CARD

- GMRS/FRS
  - CH 1
    - Kids play on this channel
  - CH 16, 17 & 22
    - have close & distant repeaters that break squelch
- MURS
  - CH 1 breaks squelch from distant user
- CB
  - CH 19 a local that tries to tease the truckers
  - CH 14 seems to be some local guys

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Part 90 business radios can be encrypted

- Higher cost radios
- Register the frequency you will use
- Lacks interoperability with Part 95 or 97
  - Personal radio services or Amateur radio

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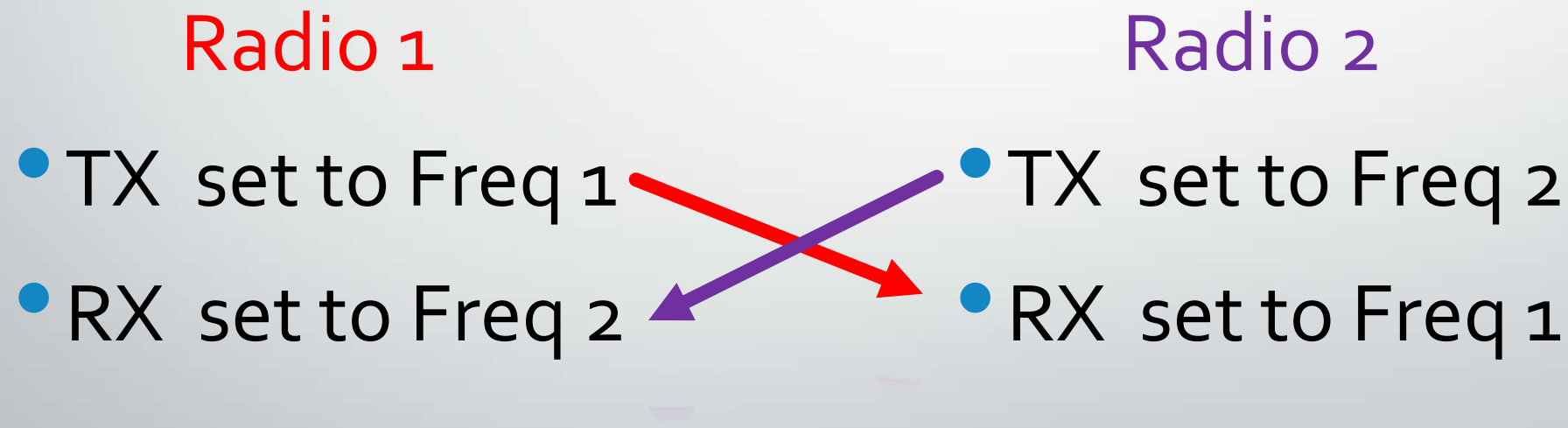
Transmit and receive using different frequencies

* only works with two radios *



Half the conversation is heard

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Normal Channel
Tactical Channel

* works with any number of radios *

Normal channel

- Use everyday
- Your common frequency

Tactical channel

- Announce channel change
- Rarely used frequency

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MURS channel 4 and 5 as a tactical channel

- Use Channels 1, 2 & 3 for normal comms
- Switch to channel 4 or 5 for tactical use
  - Don't use if close to Walmart or Sam's Club
  - Don't use CTCSS 67.0, 131.8 or 250.3

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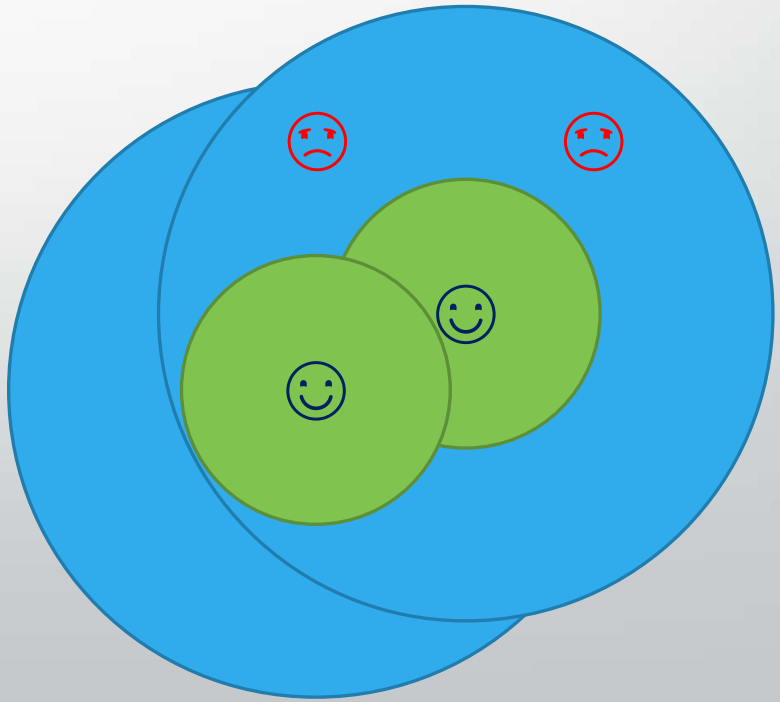
Transmit using lower power

* works with any number of radios *

- If you can communicate on low or medium power, then do it.
- It also helps with battery life



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Talk in code - not legal, but

§ 95.333 Prohibited uses.

No person shall use a Personal Radio Service station:

(f) To transmit a false or deceptive communication.

- "The muskrat is rowing the boat."
  - Obviously, an obscured message. So, not legal.
- Use COMSEC
  - Okay: "Meet me at the store on Main Street"
    - You did not say what store or the address
  - "Change to the next channel."
    - Okay if really doing QSY

- 10 codes
- Q codes

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Assign unit numbers or Tactical callsigns

Identification methods that don't use an FCC callsign

- Unit numbers can be combined to confuse a listener
  - Say "Unit nineteen ten seven"
    - "Unit 19" = Me, "10-7" = Out of service, leaving the air
      - Means "I will be off the radio for a while"
- Tac callsigns should be descriptive
  - Entrance 1, Entrance 2, Quadrant 4
    - The eavesdropper doesn't know which entrance is # 1

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Digital radios

- Ham
  - DMR Digital Mobile Radio
    - Open source, a lot of inexpensive radios
    - Popular
  - D-STAR Digital Smart Technologies for Amateur Radio
    - Icom radios
    - Highest cost of entry
  - System Fusion
    - Low-cost entry radio FT-70DR $175
- FRS
  - Motorola T800 $100/2
    - Send text messages by pairing your cell phone

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Use unpopular Ham bands
* 220 is used a lot in dense areas *

Frequency	Band	Radios in 2021
• 1220 MHz	23cm	Alinco DJ-G7T
• 220 MHz	1.25M	BTECH UV-5X3
		TYT TH-350
		Wouxun KG-UV7D
• 900 MHz	33cm	???

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Reference websites

- HFunderground.com/wiki/Main_Page
  - Articles about how services are used
- RadioReference.com
  - Has frequency lists (databases)