

# PUAOPE002 Operate Communication Systems and Equipment

## PATHFINDER SPECIALIST AWARD



April 2010



# COMMUNICATION METHODS

- **Vocal** – normal speech, yelling, calls i.e. “coo-ee”.
- **Visual** – Signaling such as waving arms, semaphore, flags.
- **Written** – Letters, notes, published works, email.
- **Language** – English or other spoken languages, morse code, machine language, sign language.

# COMMUNICATION TYPES

- **Telephone – landline, mobile, pagers, satellite and EPIRB (last two great for emergencies).**
- **Computer – Internet, email, facebook.**
- **Video/DVD – Television, video conference, internet, DVD's.**
- **Radio – UHF CB Radio, HF CB Radio, Marine Radio, Amateur Radio.**
- **Radio – Community Service, Commercial.**





# UHF CB RADIOS

## STRENGTHS

- Portable.
- Easy to operate.
- Communicates well.

## WEAKNESSES

- Limited by line of sight.
- Limited by distance.
- Limited by battery life.
- 5 watt power limit for transmission (government requirement).

# HF CB RADIOS

## STRENGTHS

- Portable.
- Easy to operate.
- Communicates well under the right atmospheric conditions.
- Can get long skip transmissions.

## WEAKNESSES

- Generally limited as for UHF CB.
- Transmissions are not as clear as UHF CB.
- Not as popular as UHF CB.



# PARTS OF A UHF CB RADIO



- Also known as a hand held or walkie-talkie.
- 1 / Function Switch – must be depressed during the whole time the sender is speaking.
- 2 / Squelch or mute control - allows the operator to stop constant background noise in the absence of an incoming call.
- 3 / Channel Selector – selection of various channels for communicating.
- 4 / Volume – adjustment of volume.



# UHF CB CHANNEL ALLOCATION

- **5 & 35: Emergency use only, established by law.**
- **11: Calling, established by law.**
- **22 & 23: Data transmission, established by law.**
- **1-8 & 31-38: Repeater, established by law.**
- **40: Highway (convention), mainly truckies use.**
- **18: Caravans and campers, used when in convoys.**
- **10: 4WD, clubs, convoys.**
- **9, 12-17, 19-21, 24-30, 39: Chat channels, may be used for conversation.**

# BEFORE YOU BEGIN COMMUNICATING

- Check if the frequency is already in use.
- Check if you are permitted to use the frequency.





# STANDARD COMMUNICATION PROCEDURE

- Identify yourself to all others listening to the channel.
- Clearly name the person you want to communicate with, three times in succession, then mention who you are. For example: Caller (alpha) “Charlie, Charlie, Charlie this is alpha come in”.
- The receiver responds with their name and the fact they are receiving. Response is: “Charlie receiving”.
- You can repeat the call three times if there is no initial response.

# STANDARD COMMUNICATION PROCEDURE

- **Converse in short sentences that deal with the issue.**
- **Do not engage in chatter.**
- **OVER – Over is mentioned at the end of each sentence.**
- **OUT – is mentioned when you completed your conversation. This indicates to the rest of the listeners that the channel is then free.**



# STANDARD COMMUNICATION PROCEDURE

**If you are busy when called and cannot stop and respond:**

- **Your quick response is: “Charlie (caller) this is Alpha (receiver) stand by 5” (or however many minutes it may be).**
- **Reply is – “Charlie (caller) standing by, out”. This means that the caller has got through and they can be on standby till the receiver is ready.**

# RECORDING A RADIO LOG

- A permanent written record of the calls sent and received using the radio.
- Extremely important when the radio is used during an event when precise information is important.
- Minimum records must include:
  - Date and time of radio communication
  - Channel used
  - The call sign and/or name of other operator
  - Location of the party
  - Condition of the party



# CHECKING IF A RADIO WORKS

- 1. Check that all the control knobs are functioning, check for damage to the radio itself, to an attached microphone, external speaker or power cables.**
- 2. Turn the radio on, check if any lights or screens light up (Never turn a radio on and transmit unless the aerial is connected).**
- 3. Check the status of the battery in all hand held radios and ensure that spare batteries are all fully charged.**

# CHECKING IF A RADIO WORKS

4. Turn the Squelch to the minimum, and turn the volume up to check for a signal or static. If there is static or another station's signal is registered, the Receive Circuit (Rx) is operational.
5. With the Rx operational, use the Push-To-Talk (PTT) or Function button to call for a Radio Test to test the Transmit Circuit (Tx) by another operator.
6. Organise this test with another operator.



# CHECKING IF A RADIO WORKS

7. Another test with UHF CB only is to try to access a local known working repeater which will respond with a delayed carrier.
8. If other operators complain about the quality of the signal or if there is a problem in receiving other operators' signals, change the battery. If that does not work, put a marker on the radio and have it tested.



# **GUIDELINES FOR USING UHF CB RADIOS**

- 1. Always keep antenna vertical (radio will transmit across longer distances).**
- 2. Speak slowly and clearly.**
- 3. Disconnect the battery when radio not in use (lengthens battery life).**
- 4. Keep batteries warm in temperatures below 10-deg Celsius (lengthens battery life).**
- 5. Keep radio away from water (unless they have been designed to be waterproof).**
- 6. Store radio away from sunlight and extreme heat.**



# GOVERNMENT REGULATIONS

## *Australia*

- **No license is required for UHF CB Radio use in Australia.**
- **Heavy penalties apply for the misuse of channels (confiscation of illegal equipment).**
- **5 watt max. power output limitation for UHF CB equipment.**
- **Amateur (or Scientific) license required for Amateur Radio equipment capable of operating on the UHF or 27MHz CB bands unless permanently modified to only operate on CB channels within the allowed power range.**

# LEGAL PENALTIES

## *Australia*

**For general misuse of legally allocated channels or other practices in breach of the terms of the Class license the following penalties apply:**

- **For minor offences by individuals, an on-the-spot fines; or**
- **For more serious offences by individuals, up to 2 years imprisonment; or**
- **In all other cases, up to \$165,000 in fine.**





# LEGAL PENALTIES

## *Australia*

**For actual interference with an emergency call in progress (deliberate or accidental):**

- **An individual can face up to 5 years imprisonment; or**
- **\$550,000 in fine.**



# GOVERNMENT REGULATIONS & LEGAL PENALTIES

- *Please check with your local authorities the above, use the following templates for your country.*





# GOVERNMENT REGULATIONS



# LEGAL PENALTIES

