

O-2018
OPERATE THE AIRCRAFT COMMUNICATIONS EQUIPMENT

CONDITIONS

You are a Mission Scanner trainee and must operate and discuss the aircraft communications equipment.

OBJECTIVES

Demonstrate basic knowledge and use of the aircraft communications radios and the CAP FM radio.
Demonstrate how to set up the audio panel to use the radios.

TRAINING AND EVALUATION

Training Outline

1. As a Mission Scanner trainee, basic knowledge of aircraft communications equipment is essential. Although you will probably only use the FM radio during missions, knowledge of how to use the other communications equipment could prove very important during emergencies.
2. Aircraft radios. The radios used in CAP aircraft are normally combined with navigation receivers, and so are often referred to as "nav/comm" radios. Each radio (there are usually two) has a 'primary' and a 'standby' function (called "flip-flop"): the primary frequency is displayed on the left and the standby frequency on the right. To use a frequency it must be in the primary display; to change a frequency, it must be in the standby display. The frequencies are normally tuned in increments of 50 kilocycles, for example 119.70 or 119.75 (the last '0' is not displayed). They can also be tuned in increments of 25 kilocycles by pulling out on the tuning knob and turning, but the last '5' will not be shown in the display (e.g., 119.775 will be displayed as 119.77). Sometimes, for brevity, air traffic controllers assign such frequencies as "one-one nine point seven seven," meaning 119.775, not 119.770. The operator cannot physically tune the radio to 119.770, and this may be confusing.



3. Before transmitting on any radio, first *listen* to the selected frequency. An untimely transmission can "step on" another transmission from either another airplane or ground facility, so that *all* the transmissions are garbled. Next, mentally prepare your message so that the transmission flows naturally without unnecessary pauses and breaks (think "Who, Where and What"). You may even find it helpful to jot down what you want to say before beginning the transmission. When you first begin using the radio, you may find abbreviated notes to be a convenient means of collecting thoughts with the proper terminology. As your experience level grows, you may find it no longer necessary to prepare using written notes.
4. CAP aircraft callsigns are pronounced "Cap Flight XX XX," where the numbers are those assigned to each Wing's aircraft. *The numbers are stated in 'group' form.* For example, the C172 assigned to Amarillo, Texas is numbered 4239, where 42 is the prefix identifying it as a Texas Wing aircraft. The callsign is thus pronounced "Cap Flight Forty-Two Thirty-Nine." It is important to use the group form of pronunciation because FAA air traffic controllers expect it of us.
5. CAP VHF FM radio. This radio is dedicated to air to ground communications, and is normally operated by the observer or scanner. Several of the frequencies programmed into the radio are frequencies assigned to CAP by the U.S. Air Force, and are used to communicate with CAP bases and ground teams. Others are

programmed at the direction of the Wing Communications Officer (e.g., mutual aid, fire, police, park service, forest service, and department of public service); these frequencies almost always require prior permission from the controlling agency before use.

There are currently three types of FM radios in use in the CAP fleet at this time. Refer to your aircraft's operating manual for specific details for its use. Chapter 4 of the *Mission Aircrew Reference Text* provides directions on the use of the TDFM-136.

6. Audio panel. The audio panel serves as the 'hub' of radio communications in the aircraft, and is normally set up by the pilot or observer. The scanner needs to know how to select the 'active' aircraft communications radio for transmission. The active radio is selected with the switch on the right-hand side of the panel. Select either COM 1 or COM 2 to transmit and receive on the frequency displayed in the associated radio's primary display.



Additional Information

More detailed information on this topic is available in Chapter 4 of the MART.

Evaluation Preparation

Setup: Provide the student access to aircraft radios or detailed figures.

Brief Student: You are a Scanner trainee asked about using the aircraft radios.

Evaluation

<u>Performance measures</u>	<u>Results</u>	
1. Demonstrate how to enter a frequency and use the aircraft communications radios.	P	F
2. Discuss the importance of listening before transmitting, and basic message format.	P	F
3. Demonstrate proper use of the CAP aircraft callsign.	P	F
4. Demonstrate how to select a frequency and use the CAP FM radio.	P	F
5. Demonstrate setting up the audio panel to transmit on an aircraft radio.	P	F

Student must receive a pass on all performance measures to qualify in this task. If the individual fails any measure, show what was done wrong and how to do it correctly.