



**Federal Aviation  
Administration**

# **Initial En Route Qualification Training**

## **Lesson 04 Radio and Interphone Procedures**

**Course 50148001**

## LESSON PLAN DATA SHEET

**COURSE NAME:** INITIAL EN ROUTE QUALIFICATION TRAINING  
**COURSE NUMBER:** 50148001

**LESSON TITLE:** RADIO AND INTERPHONE PROCEDURES

**DURATION:** 2+00 HOURS

**DATE REVISED:** 2022-02  
**VERSION:** V.2022-02

**REFERENCE(S):** FAA ORDER JO 7110.65, AIR TRAFFIC CONTROL

**HANDOUT(S):** NONE

**EXERCISE(S)/  
ACTIVITY(S):** EXERCISE 1: BARRIERS TO COMMUNICATIONS  
EXERCISE 2: LISTENING FOR READBACK ERRORS

**END-OF-LESSON  
TEST:** YES

**PERFORMANCE  
TEST:** NONE

**MATERIALS:** NONE

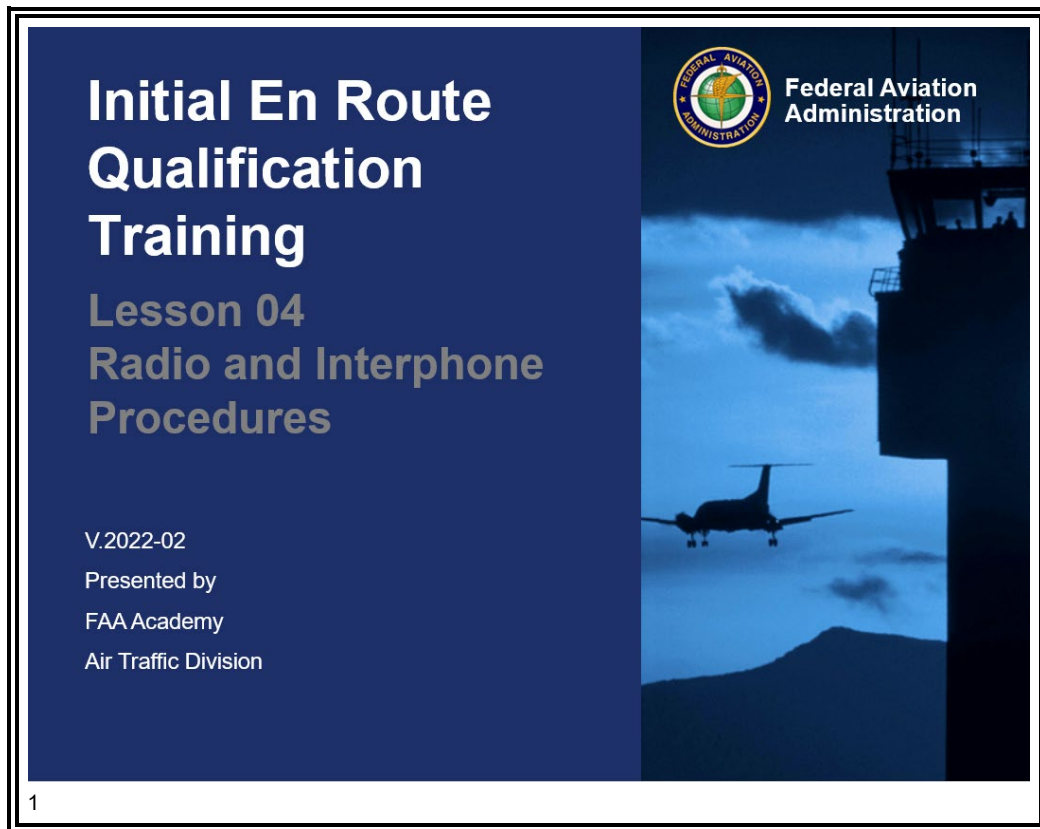
**OTHER PERTINENT  
INFORMATION:**

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# INTRODUCTION

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The slide features a dark blue background. On the left, the title "Initial En Route Qualification Training" is in large white font, followed by "Lesson 04" in a smaller white font, and "Radio and Interphone Procedures" in a larger white font. Below this, in smaller white text, is "V.2022-02", "Presented by", "FAA Academy", and "Air Traffic Division". On the right, there is a vertical image showing a silhouette of an aircraft in flight against a blue sky with clouds, and a portion of an air traffic control tower on the right edge. The FAA logo and "Federal Aviation Administration" text are in the top right corner of the image area.

**Initial En Route  
Qualification  
Training**

**Lesson 04**  
**Radio and Interphone  
Procedures**

V.2022-02  
Presented by  
FAA Academy  
Air Traffic Division

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Communication and coordination with aircraft and other controllers are some of the most important functions of daily air traffic control activities. A thorough understanding of appropriate procedures is critical to your success as an air traffic controller.

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# INTRODUCTION *(Continued)*


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**RADIO AND INTERPHONE PROCEDURES**



"Do ya see Four Twenty-Two there?  
He's making a right wifferrdil  
to see the mountain  
and then headin' for Baker. D.D."

"Say again all after 'Do ya.'"



2

Correct monitoring and use of the radio and interphone equipment is an essential part of your job. How well you communicate is directly related to your ability to apply the procedures, rules, priorities, and format that govern radio and interphone communications.

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## **Purpose**

Review the use and monitoring of the radio and interphone circuits, the messages transmission and relay, message priorities, and communications. Also covered are controller communications skills, including speaking, listening, and remembering.

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# INTRODUCTION *(Continued)*

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## Lesson Objectives

### LESSON OBJECTIVES

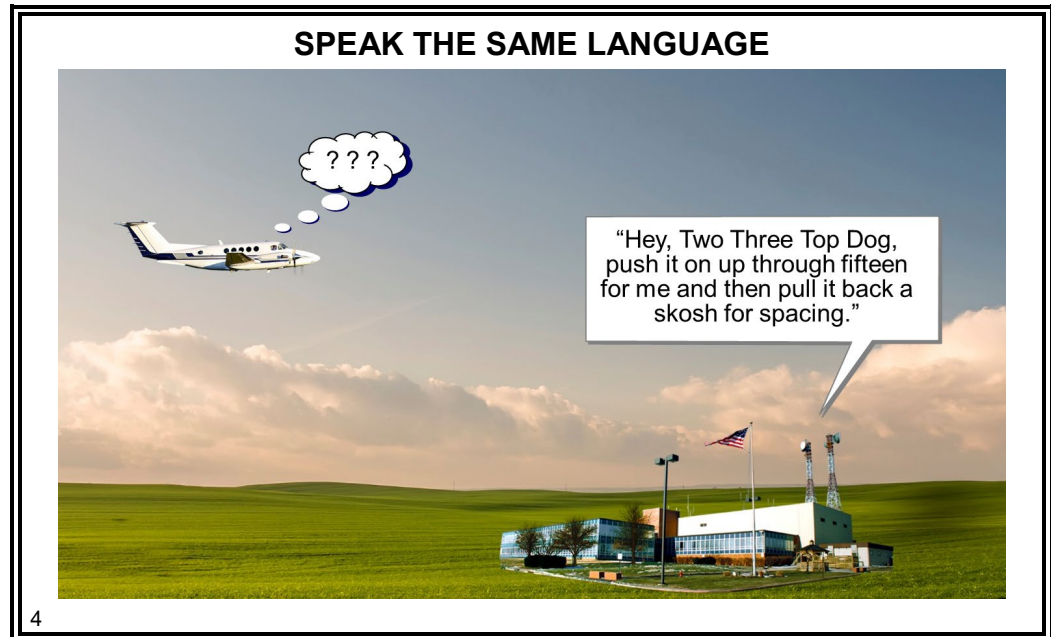
- On an End-of-Lesson Test and in accordance with FAA Order JO 7110.65, you will identify:
  - Requirements for monitoring radio frequencies and interphone circuits
  - Authorized transmissions, relays, and interruptions
  - The four interphone transmission priorities
  - Radio message format

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# RADIO COMMUNICATIONS

## Words and Phrases

JO 7110.65,  
par. 2-4-14



- ⦿ Use the words or phrases in radio and interphone communications contained in the FAA Order JO 7110.65 Pilot/Controller Glossary
- ⦿ En route controllers may omit the words “super” or “heavy” in communications, except:
  - When in communication with a terminal facility about super or heavy jet operations
  - In communication with or about super or heavy jet aircraft:
    - At an airport where an en route facility provides approach control service
    - When separation may become less than 5 miles by an approved procedure
  - When issuing traffic advisories
- ⦿ When in communication with Air Force One or Air Force Two:
  - Do **not** use “heavy” with call sign
  - Regardless of the type aircraft, state “Air Force One/Two” **only**

# RADIO COMMUNICATIONS *(Continued)*

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## Emphasis for Clarity

JO 7110.65,  
par. 2-4-15

- ⦿ Emphasize digits, letters, or similar sounding words to aid in distinguishing similar sounding call signs.
  - Notify each pilot concerned when in communication with aircraft having similar sounding call signs

**Examples:** “American Forty-four Twenty-one, be advised American Four Twenty-one is on frequency.”

“United Thirty-one, United, Cactus Thirty-one is also on this frequency, acknowledge.”

- Notify Front Line Manager of any duplicate numbers/similar sounding call signs on aircraft operating simultaneously in the same sector
- 

## Radio Frequencies

JO 7110.65,  
par. 2-4-1



- ⦿ Use radio frequencies for the specific purpose for which they are intended.
  - Radio and interphone communications are recorded and are official government records. They may be reviewed in conjunction with operational errors and deviations, court proceedings, Freedom of Information Act request, etc.

**NOTE:** Students should be aware that at some facilities, handsets used on midnight shifts may be recorded even when the transmit button is **not** depressed.

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# RADIO COMMUNICATIONS *(Continued)*

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## Monitoring

JO 7110.65,  
par. 2-4-2

- ⦿ Monitor interphones and assigned radio frequencies continuously.
  - ⦿ Maintain adequate volume to hear all calls.
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## Pilot Acknowledgement

JO 7110.65,  
par. 2-4-3

- ⦿ Ensure acknowledgment from pilot for all clearances or instructions issued.

**NOTE:** Pilot may acknowledge by using “WILCO,” “ROGER,” “AFFIRMATIVE,” or other words or remarks. However, without ensuring acknowledgment from the pilot, two clearances may be “in effect” – the last one the pilot is aware of and the one you thought you just gave.

- ⦿ If altitude, heading, or other items are read back by the pilot, ensure the readback is complete and correct.

**NOTE:** Incorrect readbacks by the pilot that are **not** heard and corrected by the controller (hearback errors) have the same effect as if the controller issued an incorrect clearance. Readback errors by a pilot that are **not** corrected by a controller are controller errors.

- If incorrect or incomplete, make appropriate corrections
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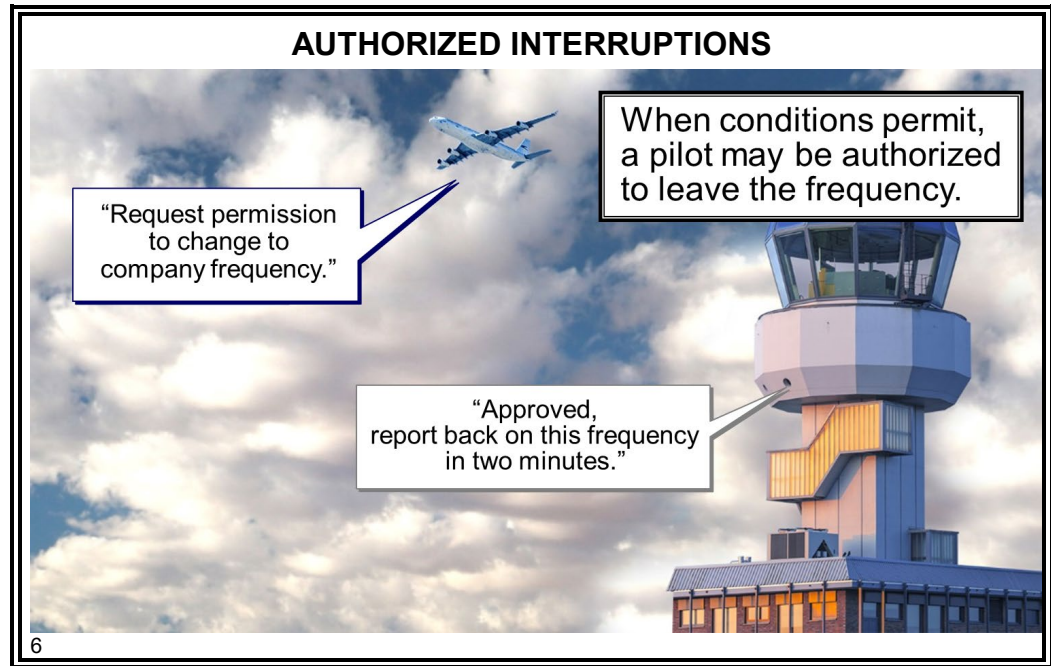


# RADIO COMMUNICATIONS *(Continued)*

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## Authorized Interruptions

JO 7110.65,  
par. 2-4-4



- ⦿ Pilots are required to monitor communications continuously unless otherwise authorized.
    - Pilot **must** receive clearance to leave assigned frequency
    - Pilot will request to abandon guard on assigned ATC frequency for a mutually agreeable time period
-

# RADIO COMMUNICATIONS *(Continued)*

## Authorized Transmissions

JO 7110.65,  
par. 2-4-5



- ⦿ Transmit **only** those messages:
  - Necessary for air traffic control
  - That contribute to air safety

## False or Deceptive Communications

JO 7110.65,  
par. 2-4-6

- ⦿ Take action to prevent and report false, deceptive, or phantom controller communications to an aircraft or controller.
  - Correct false information
  - Broadcast an alert on all frequencies where deceptive/phantom transmissions have been received
  - Collect pertinent information regarding the incident
  - Notify supervisor and report all relevant information pertaining to the incident

# RADIO COMMUNICATIONS *(Continued)*

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## Authorized Relays

JO 7110.65,  
par. 2-4-7



- ⦿ Relay operational information to:
  - Aircraft or aircraft operators as necessary
    - Do **not** handle on a regular basis
    - Give the source for any message relayed
  - Military aircraft operating on, or planning to operate on, IFR Military Training Routes (IR Routes)
- ⦿ Relay official FAA messages as required.

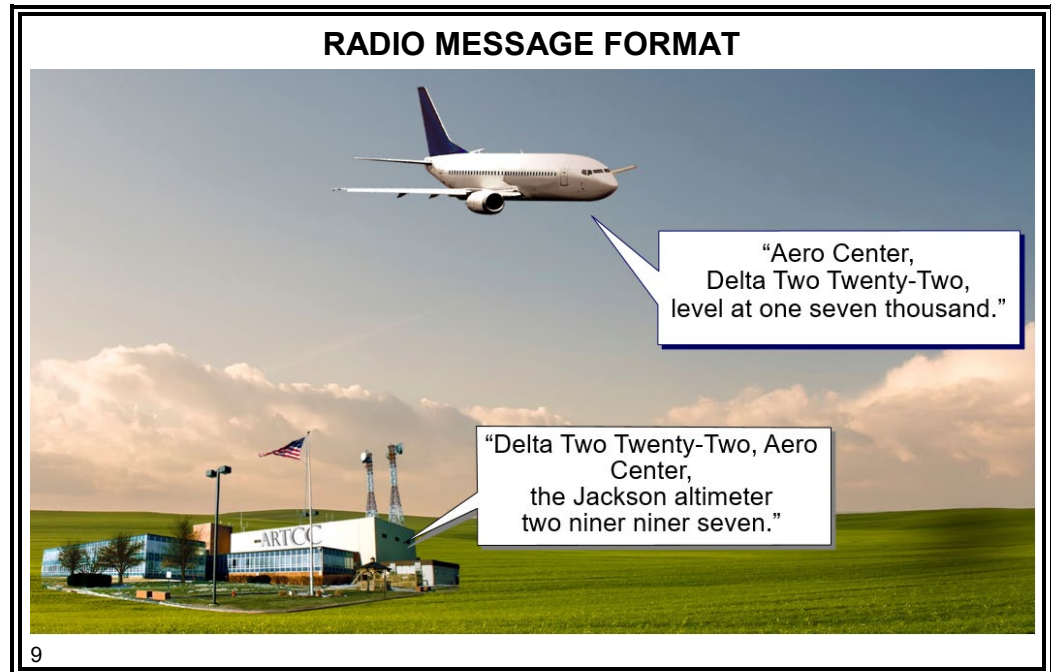
**NOTE:** Occasionally clearances, flight plan cancellations, search and rescue information, emergency information, etc., may be relayed through other aircraft.

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# RADIO COMMUNICATIONS *(Continued)*

## Radio Message Format

JO 7110.65,  
par. 2-4-8



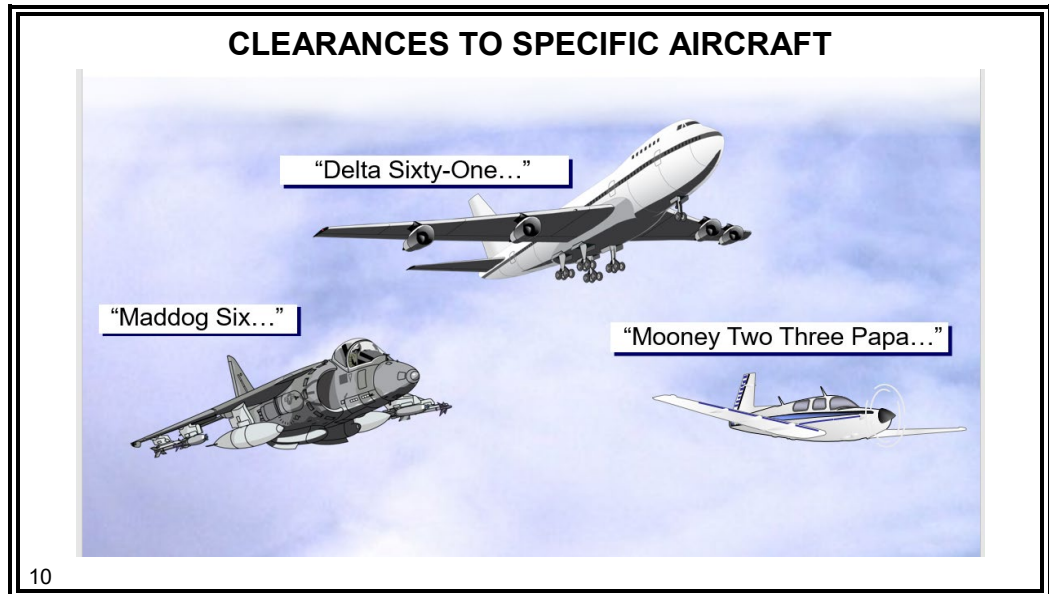
- ⦿ Initiate communications with an aircraft using the following format:
  - On initial radio contact:
    - Identification of aircraft
    - Identification of ATC unit
    - Message (if any)
    - The word "OVER," if required
- ⦿ For subsequent radio communications from the same sector/position, use the same format, except:
  - Identification of ATC unit may be omitted

# RADIO COMMUNICATIONS *(Continued)*

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## Clearances to Specific Aircraft

JO 7110.65,  
par. 2-4-8



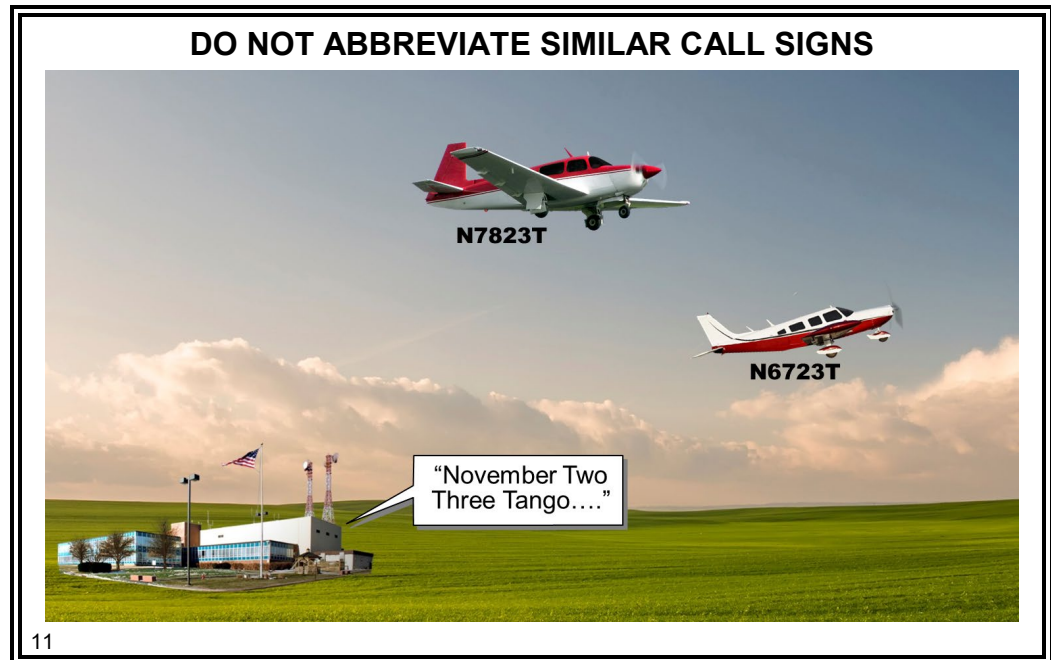
- ⦿ Preface the clearance or instructions with the identification of that aircraft.
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# RADIO COMMUNICATIONS *(Continued)*

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## Abbreviated Transmis- sions

JO 7110.65,  
par. 2-4-9



- ⦿ For general aviation aircraft, use the identification prefix and the last three digits or letters after communications have been established.
- ⦿ Exceptions
  - Do **not** abbreviate:
    - Similar sounding call signs
    - Military aircraft
    - Air carriers
    - Civil aircraft with an FAA authorized call sign
- ⦿ Omit the facility identification after communication is established.
- ⦿ Transmit the message immediately after call-up when:
  - Message is short

**NOTE:** If message is long or requires writing, warn the pilot before giving the message. Example: "(aircraft identification) I have a message/clearance for you. Advise when ready to copy."

- Receipt is generally assured
- ⦿ Omit the word "OVER" if the message obviously required a reply.

# RADIO COMMUNICATIONS *(Continued)*

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## Knowledge Check

### KNOWLEDGE CHECK

❖ **QUESTION:** A clearance is not complete until what is received?

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### KNOWLEDGE CHECK

❖ **QUESTION:** What messages are Air Traffic Controllers authorized to transmit?

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*Continued on next page*

# RADIO COMMUNICATIONS *(Continued)*

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## Knowledge Check (Cont'd)

### KNOWLEDGE CHECK

❖ **TRUE OR FALSE:** After advising ATC of the reason, a pilot may discontinue frequency monitoring.

- A. True
- B. False

14

### KNOWLEDGE CHECK

❖ **QUESTION:** What action should you take if false, deceptive, or phantom controller communications occur?

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*Continued on next page*



# RADIO COMMUNICATIONS *(Continued)*

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## Knowledge Check (Cont'd)

### KNOWLEDGE CHECK

❖ **QUESTION:** What radio messages are Air Traffic Controllers authorized to relay?

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### KNOWLEDGE CHECK

❖ **QUESTION:** When does an en route controller need to use the word "heavy"?

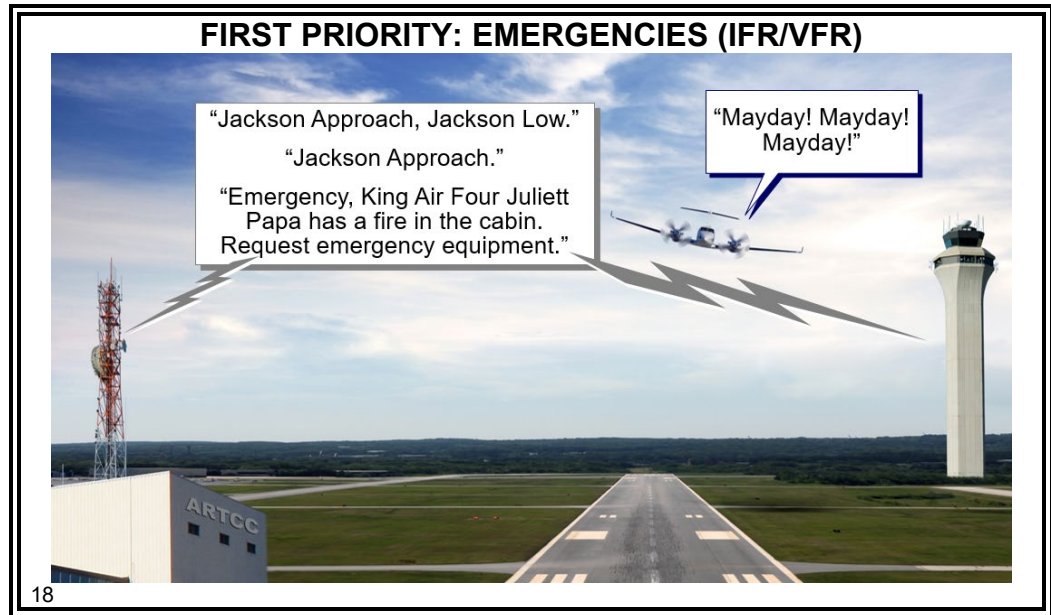
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# INTERPHONE COMMUNICATIONS

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## Interphone Transmission Priorities

JO 7110.65,  
par. 2-4-10



- ◎ First priority - emergency messages, including:
  - Essential information on aircraft accidents or suspected accidents
    - You may **not** violate separation rules to expedite an emergency

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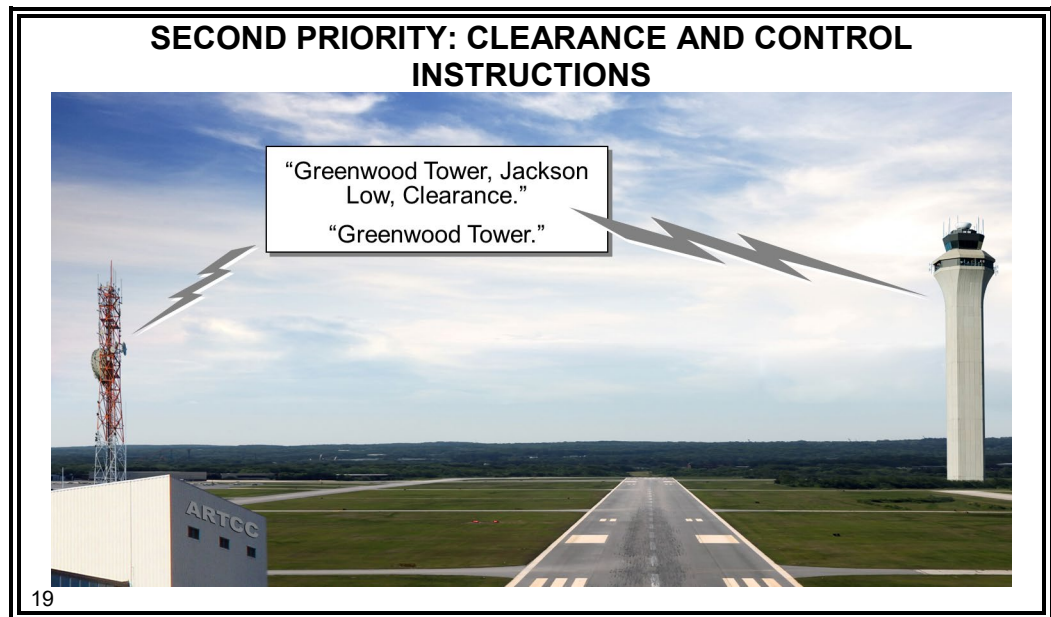
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# INTERPHONE COMMUNICATIONS *(Continued)*

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## Interphone Transmission Priorities (Cont'd)

JO 7110.65,  
par. 2-4-10



- ◎ Second priority - clearances and control instructions

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# INTERPHONE COMMUNICATIONS *(Continued)*

## Interphone Transmission Priorities (Cont'd)

JO 7110.65,  
par. 2-4-10

**THIRD PRIORITY: MOVEMENT MESSAGES**

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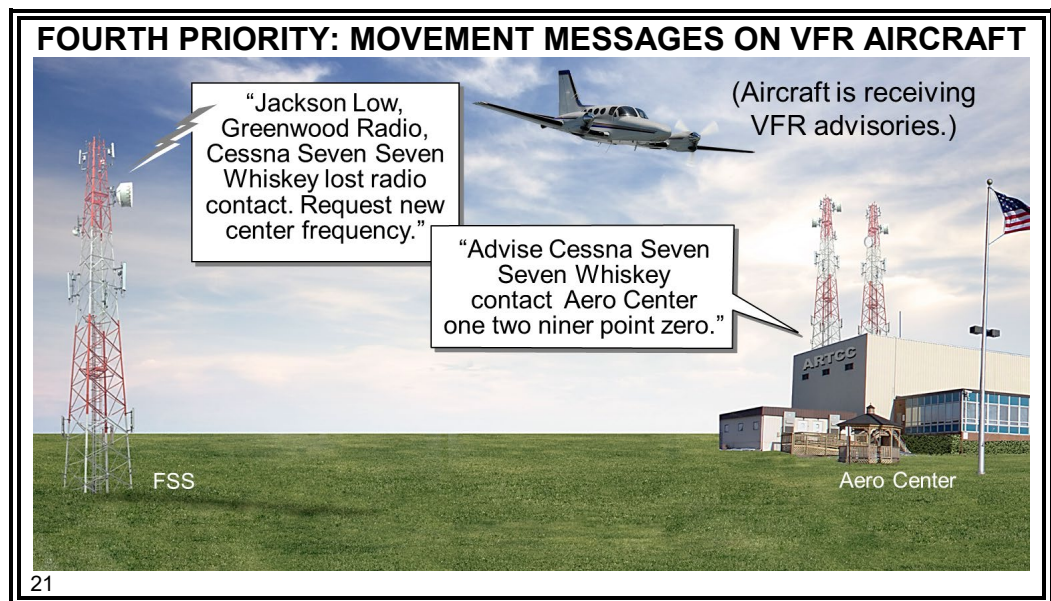
- ◎ Third priority - movement and control messages in the following order of preference:
  - Progress reports
  - Departure or arrival reports
  - Flight plans

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# INTERPHONE COMMUNICATIONS *(Continued)*

## Interphone Transmission Priorities (Cont'd)

JO 7110.65,  
par. 2-4-10



- ⦿ Fourth priority - movement messages on VFR aircraft

## Priority Interruption

JO 7110.65,  
par. 2-4-11

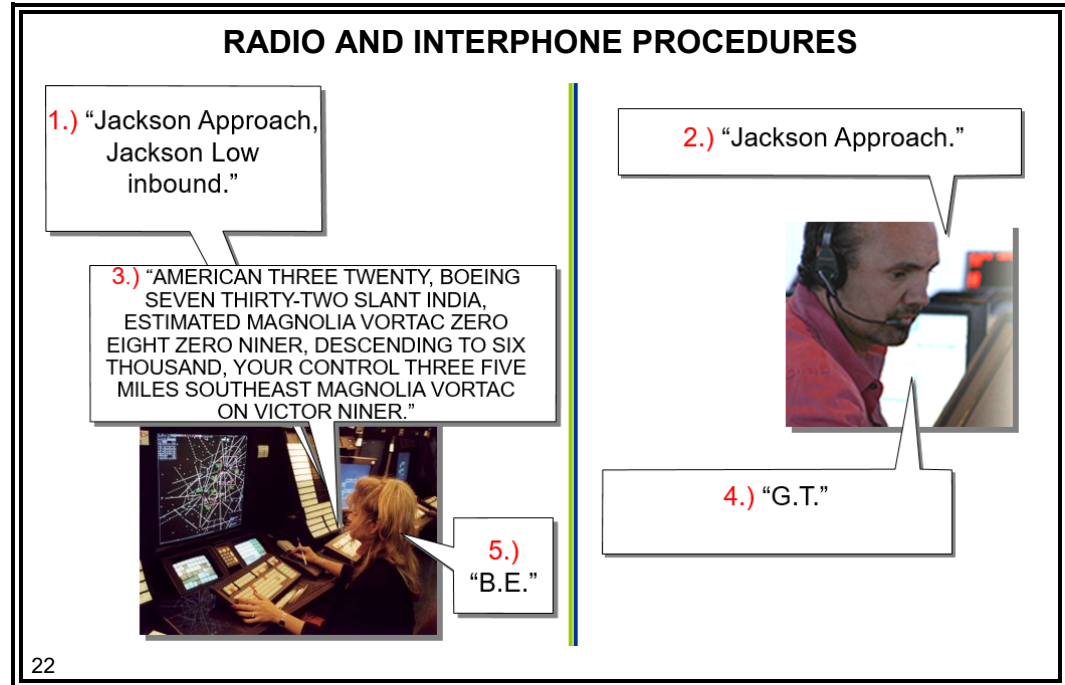
- ⦿ To interrupt a lower priority message when you have an emergency or control message to transmit, use the words:
  - "Emergency," or
  - "Control"

**Example:** "Break for control"

# INTERPHONE COMMUNICATIONS *(Continued)*

## Interphone Message Format

JO 7110.65,  
par. 2-4-12



◎ Use the following format for inter/intrafacility communications:

- Caller states identification of:
  - Position being called
  - Position calling and line being used, if necessary
- Receiver states position identification
- Caller states type of coordination to be accomplished, when advantageous

**NOTE:** "Handoff" or "APREQ." Sometimes it may be more advantageous to include this after identification of position calling. **Example:** "Rocket, Smyrna, Ninety-line, point out."

- Caller states message
- Receiver states response to the caller's message followed by receiver's operating initials

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# INTERPHONE COMMUNICATIONS *(Continued)*

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## **Interphone Message Format (Cont'd)**

JO 7110.65,  
par. 2-4-12

**NOTE:** Receiver's response includes readback of caller's request/  
information when appropriate.

- Caller states operating initials
- 

## **Interphone Message Termination**

JO 7110.65,  
par. 2-4-13

- ⊙ Terminate all interphone messages with your operating initials.
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## **Facility Identification**

JO 7110.65,  
par. 2-4-19

- ⊙ Identify facilities as follows:
    - Airport traffic control towers: state the name of the facility followed by the word "tower," e.g., Greenwood Tower
    - Approach control facilities: state the name of the facility followed by the word "approach," e.g., Jackson Approach
    - Flight Service Stations: state the name of the facility followed by the word "radio," e.g., Greenwood Radio
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# COMMUNICATION SKILLS

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## Information to be Communicated

- ⊙ Controllers are required to speak, hear, and remember massive amounts of critical operational data.
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## Characteristics of Controller Information

- ⊙ Dynamic
    - Data is constantly changing
  - ⊙ Requires prioritization
    - There are so many items communicated that the controller **must** be able to identify those which are most critical to safety
  - ⊙ Data is transmitted amid distractions
    - Both the speaker and listener **must** focus and communicate so that the message is clearly understood and remembered
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## Controller Responsibilities in Communication

- ⊙ Speaking
    - Use standard phraseology
    - Use concise format
    - Enunciate clearly
    - Use even tone, pitch, and rate
    - Be specific and explicit
  - ⊙ Listening
    - Focus and pay attention
    - Use active listening
-  **Active listening**, generally speaking, is a form of listening and responding that focuses on the speaker.
- The listener **must** attend to the speaker fully, and then repeat, in the listener's own words, what he or she thinks the speaker has said
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## COMMUNICATION SKILLS *(Continued)*

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### **Controller Responsibilities in Communication (Cont'd)**


- The listener does **not** have to agree with the speaker - he or she **must** simply state what they think the speaker said
  - ⊙ In pilot/controller communication, the pilot (speaker) is stating what he/she plans to do in the clearance readback. Therefore, it is essential that the controller (listener):
    - Devote his/her full attention to the pilot readback of a clearance or instruction
    - Verify that all essential elements of the clearance are read back correctly
    - Separate the unexpected or unusual information from the expected information
  - ⊙ Pilot/controller interaction requires:
    - Good speaking and listening skills
    - Professional attitude
    - Assertive communication
    - Communication that is appropriate for the type of pilot
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# EXERCISE 1: BARRIERS TO COMMUNICATION

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## Exercise 1


**BARRIERS TO COMMUNICATION EXERCISE**





**Purpose:** to practice identifying strengths and weaknesses in controller/pilot communications


**Directions:** listen to verbal exchanges and list the strengths and weaknesses of each controller's style of communication


 Audio 1


 Audio 4

 Audio 7

 Audio 2

 Audio 5

 Audio 3

 Audio 6

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## Directions

You will hear seven different audios of verbal exchanges between controllers and pilots. As you listen to the segment, write down the strengths and weaknesses of each controller's style of communication, and what impact that style might have on the controllers' communication. Be prepared to discuss your answers after each audio file.

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# EXERCISE 1: BARRIERS TO COMMUNICATION

(Continued)

Answers

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#	Communications Strengths/Weaknesses	Impact on Communication
1		
2		
3		
4		
5		
6		
7		

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# EXERCISE 1: BARRIERS TO COMMUNICATION

(Continued)

## Discussion Questions

❖ **QUESTION:** What barriers to communication were created by the controllers' manner of speaking or attitude?

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❖ **QUESTION:** What impact might these types of barriers have on the effectiveness of communication?

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❖ **QUESTION:** What might be causing the controllers to communicate this way?

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## EXERCISE 2: LISTENING FOR READBACK ERRORS

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### Exercise 2

#### LISTENING FOR READBACK ERRORS EXERCISE



**Purpose:** to practice detecting readback errors

**Directions:** listen for readback errors and write them in the spaces provided; be prepared to discuss each situation



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### Directions

You will hear an audio file that contains recordings of eight typical situations with numerous clearances being issued. Listen for readback errors and write them in the spaces provided. Be prepared to discuss each situation.

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## EXERCISE 2: LISTENING FOR READBACK ERRORS

(Continued)

### Answers

Aircraft ID	Errors
1. LN92DF	
2. LOBO544	
3. AAL1	
4. DAL663	
5. USA1856	
6. USA1781	
7. N13D	
8. AAL846	

# IN CONCLUSION

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## Lesson Review



### LESSON REVIEW

**The following information was covered in this lesson:**

- Radio communications
- Interphone communications
- Communication skills



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## End-of-Lesson Test

### END-OF-LESSON TEST

**Radio and Interphone Procedures**



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