Federal Aviation Administration

55054001 EN ROUTE RADAR ASSOCIATE CONTROLLER TRAINING PART A: BASIC CONCEPTS

Lesson 7: Approaches

Version: 1.0 2022.08

INSTRUCTOR LESSON PLAN

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LESSON PLAN DATA SHEET

Course Name	En Route Radar Associate Controller Training Part A: Basic Concepts
Course Number	55054001
Lesson Title	Approaches
Duration	2 hours (includes lesson and ELT)
Version	1.0 2022.08
Reference(s)	JO 7110.65, Air Traffic Control; U.S. Terminal Procedures Publication; Aeronautical Chart User's Guide; FAA-H-8083-16, Instrument Procedures Handbook; Aeronautical Information Manual (AIM); GPS Standard Positioning Service (SPS) Performance Standard; 14 CFR Part 97, Standard Instrument Procedures; Advisory Circular 150/5220-16E, Automated Weather Observing Systems (AWOS) for Non-Federal Applications
Prerequisites	NONE
Handout(s)	⊙ Electronic or hard copy of a U.S. Terminal Procedures Publication
Exercise / Activity	NONE
Scenario	NONE
Assessments	⊙ Yes - Written *(Refer to ELT01_L07 (Print prior to class)*
Materials and Equipment	⊙ Pencil and/or pen
Other Pertinent Information	⊙ **Ensure lesson materials are downloaded to the classroom computer** ⊙ Course 57838 - Approaches, or current course, is available as supplemental training for this lesson. ⊙ This lesson is based on ERAM EAE410 ⊙ The lesson has been reviewed and reflects current orders and manuals as of April 2022

As you prep for this lesson, recall and be prepared to talk about examples and personal experiences that illustrate or explain the teaching points in the lesson.

LESSON ICON LEGEND

	Description
	The Activity icon indicates an exercise, lab, or hands-on activity.
	The Discussion Question icon signals a discussion question to be asked to the students.
	The Handout icon indicates a handout is to be distributed to the students.
	The Instructor Note icon is in hidden text and indicates text that is for the instructor only.
	The Multimedia icon indicates a video or audio clip is in the presentation.
	The Phraseology icon indicates that phraseology is in the content.
	The WBT icon indicates a component of web-based training.
	The Click icon indicates a PPT slide with click-based functionality to present additional information.
	The Definition icon indicates a published definition.

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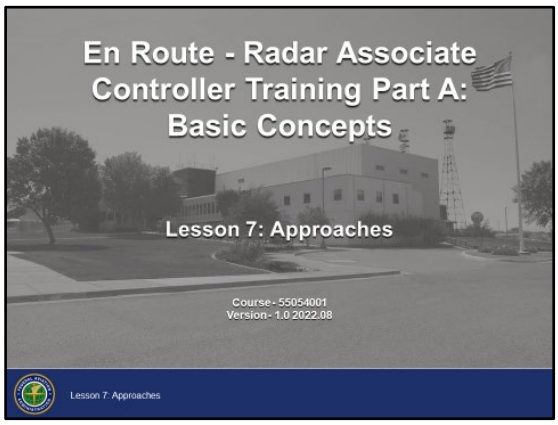
LESSON INTRODUCTION

Overview



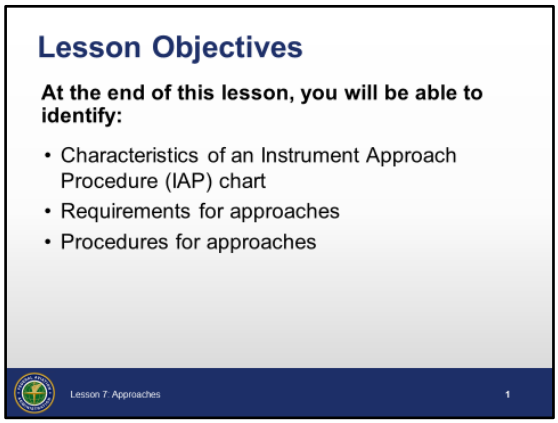
Lesson Overview

Knowledge of approaches is crucial to your duties as an air traffic controller. Issuing approach clearances is an important air traffic control function you will be performing throughout your career.

This lesson covers the terminology, responsibilities, and phraseology associated with approach clearances, instrument approaches, and approach charts.

LESSON INTRODUCTION *(CONT'D)*

Lesson Objectives



Objectives

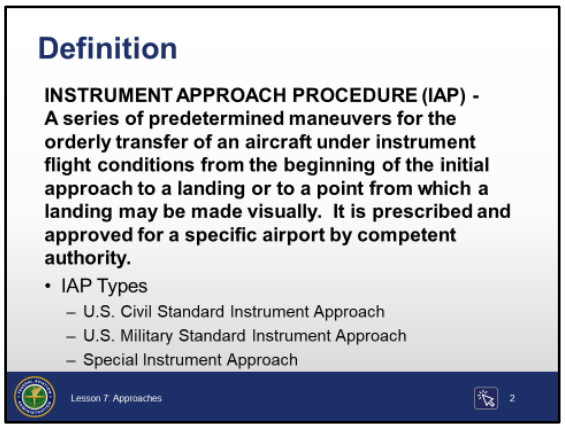
- At the end of this lesson, you will be able to identify:
  - Characteristics of an Instrument Approach Procedure (IAP) chart
  - Requirements for approaches
  - Procedures for approaches

NOTE: There will be a graded end-of-lesson test upon completion of the lesson. The passing score is 70%. If you do not achieve a score of 70%, you will be provided study time and one retake of an alternate end-of-lesson test.

INSTRUMENT APPROACH PROCEDURE (IAP) CHART

Definition

JO 7110.65,
PCG



Definition

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INSTRUMENT APPROACH PROCEDURE (IAP) - A series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight conditions from the beginning of the initial approach to a landing or to a point from which a landing may be made visually. It is prescribed and approved for a specific airport by competent authority.

Click to to reveal types of IAPs.

⊙ IAP Types

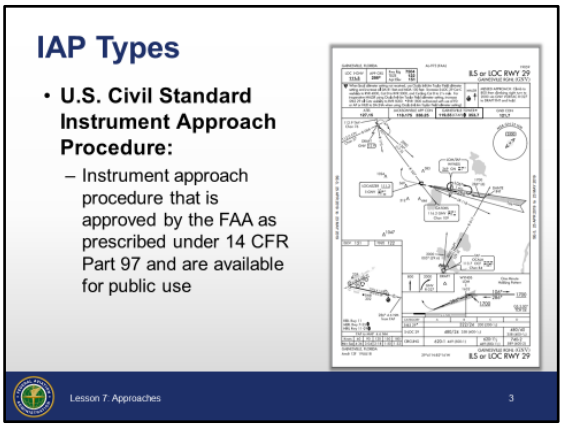
- U.S. Civil Standard Instrument Approach Procedure (SIAP)
- U.S. Military Standard Instrument Approach Procedure
- Special Instrument Approach Procedure

NOTE: IAP charts portray the aeronautical data that is required to execute an instrument approach to an airport.

IAP CHART *(CONT'D)*

IAP Types

JO 7110.65, PCG



IAP Types

⊙ U.S. Civil Standard Instrument Approach Procedure (SIAP):

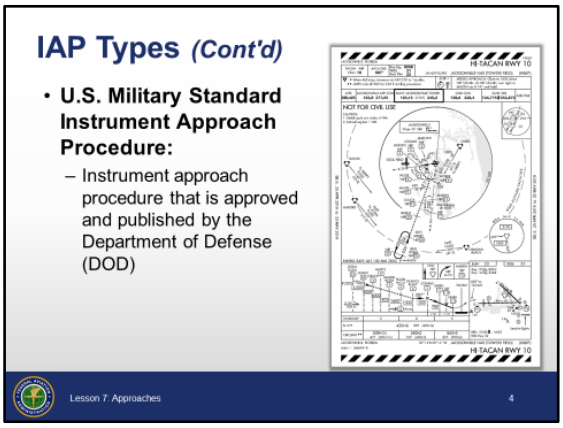
- Instrument approach procedure that is approved by the FAA as prescribed under 14 CFR Part 97 and is available for public use
  - The aeronautical data prescribed in standard IAPs are portrayed on IAP charts

NOTE: IAP charts are commonly referred to as "approach plates".

IAP CHART *(CONT'D)*

IAP Types (Cont'd)

JO 7110.65, PCG



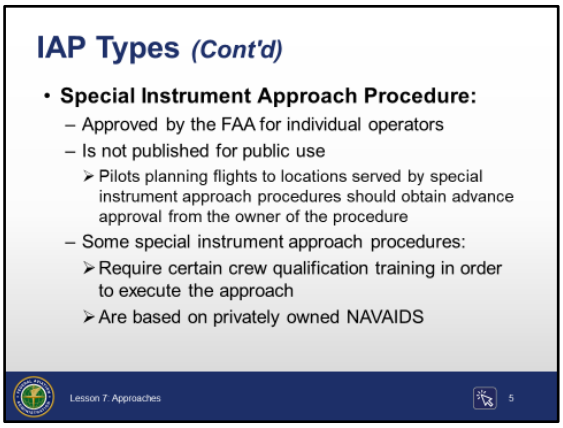
- U.S. Military Standard Instrument Approach Procedure:
  - Instrument approach procedure that is approved and published by the Department of Defense (DOD) for use by the military
  - Contained in the DOD Flight Information Publication (FLIP)

IAP Types (Cont'd)

JO 7110.65, PCG

14 CFR Part 97

AIM, par. 5-4-8



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⊙ Special Instrument Approach Procedure:

- Approved by the FAA for individual operators
- Is not published for public use
  - Pilots planning flights to locations served by special instrument approach procedures should obtain advance approval from the owner of the procedure

Click to to reveal additional bullets.

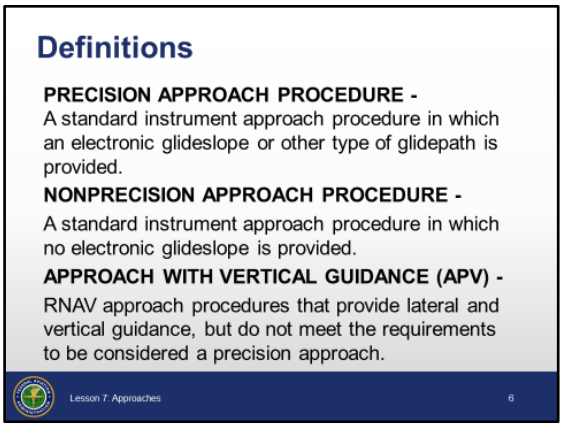
- Some special instrument approach procedures:
  - Require certain crew qualification training in order to execute the approach
  - Are based on privately owned NAVAIDs

NOTE: Owners may turn off the NAVAID for any reason, including maintenance or conservation.

- Controllers are not required to question pilots to determine if they have permission to use the procedure
- If a pilot asks to execute a special instrument approach procedure, presume the pilot is aware of the details of the procedure

Definitions

JO 7110.65, PCG



Definitions

PRECISION APPROACH PROCEDURE - A standard instrument approach procedure in which an electronic glideslope or other type of glidepath is provided.

Examples: Instrument Landing System (ILS)

Precision Approach Radar (PAR)

Ground Based Augmentation System (GBAS) Landing System (GLS)

NONPRECISION APPROACH PROCEDURE - A standard instrument approach procedure in which no electronic glideslope is provided.

Examples: VHF Omnidirectional Range (VOR)

Tactical Air Navigation System (TACAN)

Non-directional Beacon (NDB)

Localizer (LOC)

Airport Surveillance Radar (ASR)

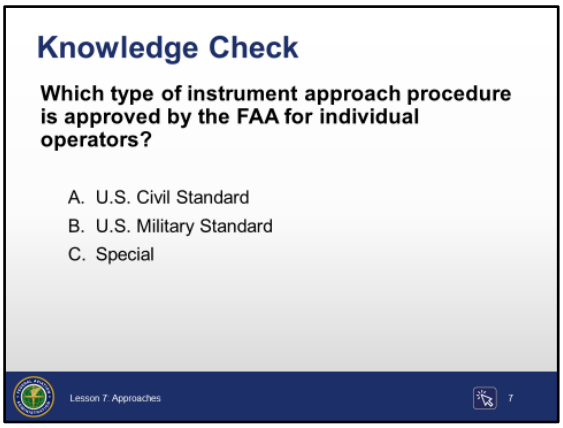
Localizer Type Directional Aid (LDA)

APPROACH WITH VERTICAL GUIDANCE (APV) - RNAV approach procedures that provide lateral and vertical guidance, but do not meet the requirements to be considered a precision approach.

Example: Localizer performance with vertical guidance (LPV)

IAP CHART *(CONT'D)*

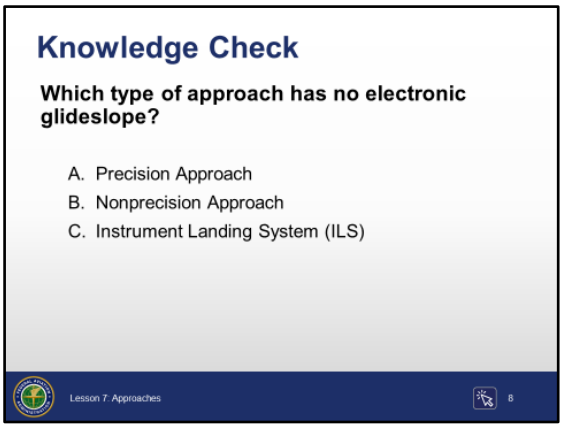
Knowledge Check



QUESTION: Which type of instrument approach procedure is approved by the FAA for individual operators?

Answer: *C. Special*

Knowledge Check



QUESTION: Which type of approach has no electronic glideslope?

Answer: *B. Nonprecision Approach*

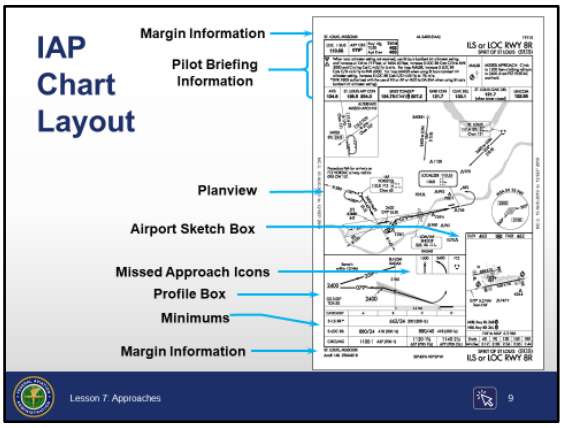
IAP CHART *(CONT'D)*

IAP Chart Layout

Aeronautical Chart User's Guide, p. 92

FAA-H-8083-16, chapter 4

AIM, par. 5-4-5



This slide is animated, 7 clicks. Click where indicated by click icon.

Distribute to each student the lesson handout (KSUS ILS or LOC RWY 8R IAP chart) and an electronic or hard copy of a U.S. Terminal Procedures Publication. The IAP chart graphics on some of the following slides have been simplified.

IAP Chart Layout

- All IAPs except the Precision Approach Radar (PAR) and Airport Surveillance Radar (ASR) are depicted using the same general format
- Symbols used on the IAP chart and accompanying explanations can be found in U.S. Terminal Procedures Publication legend
- Like SIDs and STARs, IAP charts are listed alphabetically in the U.S. Terminal Procedures Volumes, first under city, then under airport
- Each section of the IAP chart has information needed for the approach

As you review from Planview to Minimums sections of the IAP chart, have the students turn to the legend. Talk through the various types of information found on the legend pages, and demonstrate how to extract various items of information (e.g., symbols, altitudes, lighting, etc.).

Continued on next page

IAP CHART *(CONT'D)*

IAP Chart Layout (Cont'd)

Aeronautical Chart User's Guide, p. 92

FAA-H-8083-16, chapter 4

AIM, par. 5-4-5

As each section is labeled on the slide, use a pointer to point to its positioning on the chart. Direct the students to follow along on the IAP chart handout.

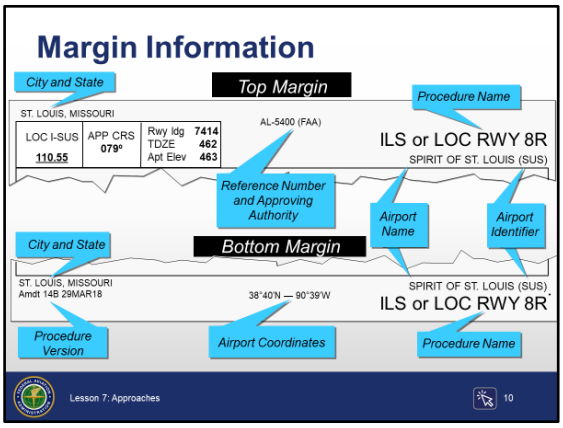
- The seven sections of the IAP chart are:
  - Margin Information
  - Pilot Briefing Information
  - Planview
  - Airport Sketch Box
  - Missed Approach Icons
  - Profile Box
  - Minimums Section

IAP CHART *(CONT'D)*

Margin Information

Aeronautical Chart User's Guide, pp. 92-94

AIM, par. 5-4-5



Margin Information

As each element is labeled on the slide, use a pointer to point to its position on the chart. Direct the students to follow along on the IAP chart handout.

This slide is animated, 7 clicks. Click where indicated by click icon.

- City and state
- Reference number and approving authority
- Procedure name
  - The name of the approach, as published, is used to identify the approach, even if a component of the approach aid is inoperative

Examples: ILS RWY 9

VOR RWY 17

LOC RWY 25R

Exceptions: Localizer on an ILS or azimuth on an MLS is inoperative

- Numbers or letters from the end of the alphabet appearing in the approach name denote approaches to the same runway using the same approach aid

Examples: HI TACAN 1 RWY 6L or HI TACAN 2 RWY 6L

RNAV (GPS) Z RWY 4 or RNAV (GPS) Y RWY 4

Continued on next page

Margin Information (Cont'd)

Aeronautical Chart User's Guide, pp. 92-94

FAA-H-8083-16, pp. 4-11

AIM, par. 5-4-5

- Letters from the beginning of the alphabet, which are used as a suffix to the approach name, denote procedures that do not meet the criteria for a straight-in landing (i.e., final approach course aligned up to 30 degrees from the runway heading)

Examples: VOR-A

GPS-B

⊙ Airport name

⊙ Airport identifier

⊙ Procedure version

⊙ Airport coordinates

NOTE: When the procedure identifier includes /DME, or when there is a note stating that DME is a requirement, operative DME receivers and ground equipment are required to execute the IAP.

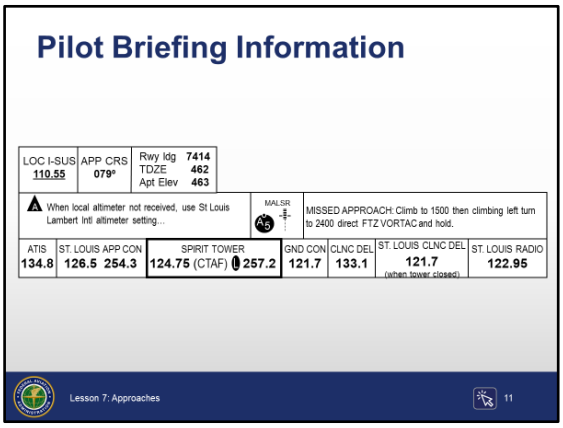
IAP CHART *(CONT'D)*

Pilot Briefing Information

Aeronautical Chart User's Guide, pp. 94-97

FAA-H-8083-16, pp. 4-10

AIM, par. 5-4-5



Pilot Briefing Information

This slide is animated, 9 clicks. Click where indicated by click icon.

As each element is labeled on the slide, use a pointer to point to its position on the chart. Direct the students to follow along on the IAP chart handout.

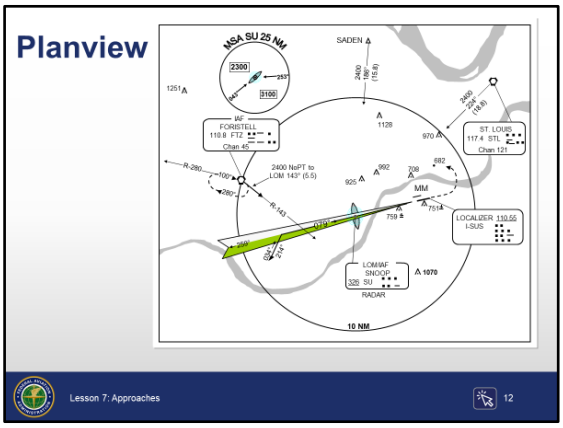
- Top row contains:
  - Primary NAVAID information
  - Final approach course information
  - Available landing distance
  - Touchdown zone and airport elevations
- Middle row contains:
  - Procedure notes and limitations (if any)
  - Icons indicating any nonstandard alternate and/or takeoff minimums
  - Approach lighting symbology
  - Full text description of missed approach
- Bottom row contains:
  - Pertinent frequencies in the order of their anticipated use
    - If a tower is located at the airport, that frequency box is bolded

Planview

Aeronautical Chart User's Guide, pp. 99-108

FAA-H-8083-16, pp. 4-10

AIM, par. 5-4-5



Planview

This slide is animated, 19 clicks. Click where indicated by click icon.

As each element is labeled on the slide, use a pointer to point to its position on the chart. Direct the students to follow along on the IAP chart handout.

- The Planview is a bird's-eye view of the entire IAP. The symbology is located in the legend, Section G. The following items are shown:
  - Distance circle
    - All information inside this solid ring is to scale
    - Circle usually has a 10NM radius
  - Minimum Safe Altitudes (MSAs) or Terminal Arrival Areas (TAAs)
  - NAVAIDs
  - Geographical landmarks (such as rivers and lakes)
  - Obstructions - height always given in Mean Sea Level (MSL)
  - Transition routes (may include a DME arc)
  - Altitude
  - Mileage information
  - NAVAID on which the approach is predicated
  - Navigation frequency information
  - Localizer course

Continued on next page

IAP CHART (*CONT'D)*

Planview (Cont'd)

Aeronautical Chart User's Guide, p. 92

FAA-H-8083-16, pp. 4-10

AIM, par. 5-4-5

- Outbound course
- Procedure turn

PROCEDURE TURN - The maneuver prescribed when it is necessary to reverse direction to establish an aircraft on the intermediate approach segment or final approach course.

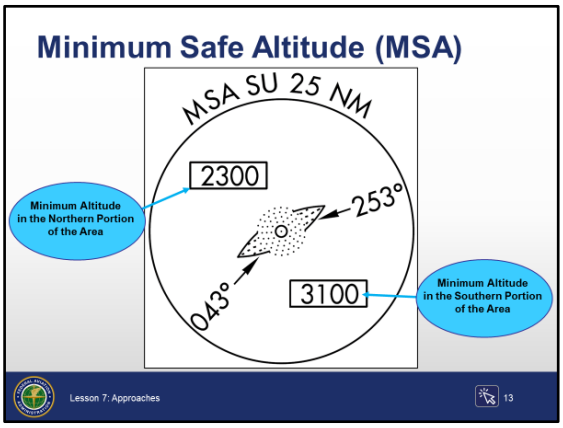
- Inbound course
- Locator Outer Marker (LOM)
  - Made up of a marker beacon (range information) and a compass locator (transition information)
- Runways
- Missed approach track
- Published holding pattern for missed approach
- IAP notes

Planview (Cont'd)

Aeronautical Chart User's Guide, p. 106

FAA-H-8083-16, pp. 4-19

AIM, par. 5-4-5, PCG



Minimum Safe Altitude (MSA)

This slide is animated, 1 click.

Click to highlight the minimum safe altitudes.

NOTE: The first two letters of the localizer identifier indicate the compass locator, SU in this example.

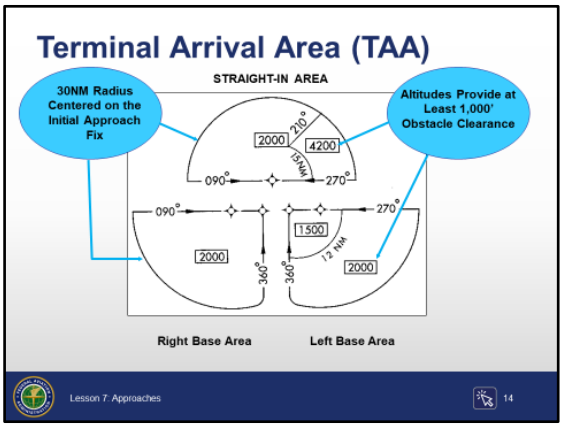
⊙ Minimum Safe Altitude (MSA)

- Published for emergency use in IAP charts
- Normally based on the primary NAVAID on which the IAP is based
- Based on an RNAV waypoint for RNAV/GPS approaches
- Normally a 25 NM radius, but may be 30 NM if necessary
- Ensures 1,000' of obstruction clearance but does NOT ensure NAVAID frequency reception

Planview (Cont'd)

FAA-H-8083-16, pp. 4-58

AIM, par. 5-4-5



Terminal Arrival Area (TAA)

This slide is animated, 2 clicks.

- Terminal Arrival Area (TAA) provides a transition from the en route structure to the terminal environment for aircraft equipped with Area Navigation (RNAV) systems

Click to show the 30 NM radius.

- Based on a 30 NM radius of the Initial Approach Fix (IAF)

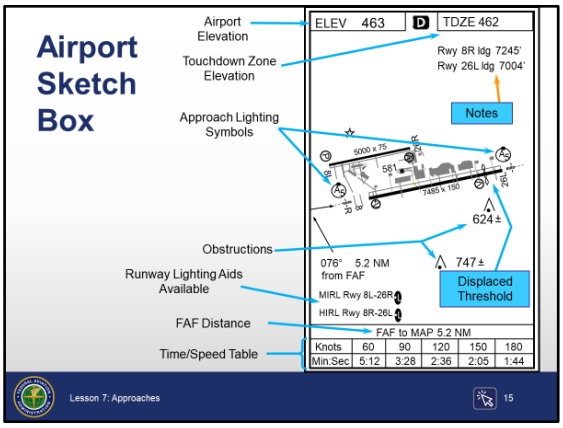
Click to show 1,000' obstacle clearance altitudes.

- The TAA provides minimum altitude with standard obstacle clearance (i.e., at least 1,000') when operating within the TAA boundaries
- TAAs are published on some RNAV approach charts

- Altitudes published within the TAA replace the MSA altitudes

Airport Sketch Box

Aeronautical Chart User's Guide, pp. 114-115



Airport Sketch Box

This slide is animated, 9 clicks. Click where indicated by click icon.

As each element is labeled on the slide, use a pointer to point to its position on the chart. Direct the students to follow along on the IAP chart handout.

- The Airport Sketch Box gives detailed information about:
  - Airport layout
  - Runways
  - Flying time from the Final Approach Fix (FAF) to the Missed Approach Point (MAP)
- The following items are shown in this Airport Sketch Box:
  - Obstruction heights in MSL
  - Airport elevation
  - Approach lights symbol
  - Touchdown zone elevation
  - Runway lighting aids available
  - Distance from FAF to MAP
  - Table showing time/speed from FAF to MAP
  - Displaced threshold
  - Notes

Continued on next page

IAP CHART *(CONT'D)*

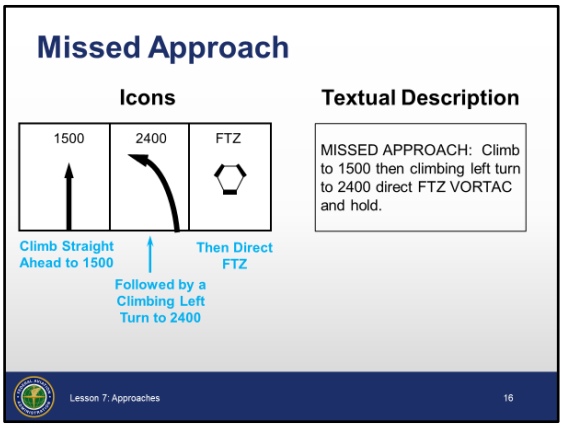
Airport Sketch Box (Cont'd)

NOTE: Airport diagrams provide more detailed airport information than airport sketches and are not intended for use in approach and landing or departure operations.

Aeronautical Chart User's Guide, pp. 114-115

Missed Approach

Aeronautical Chart User's guide, pp. 107-108



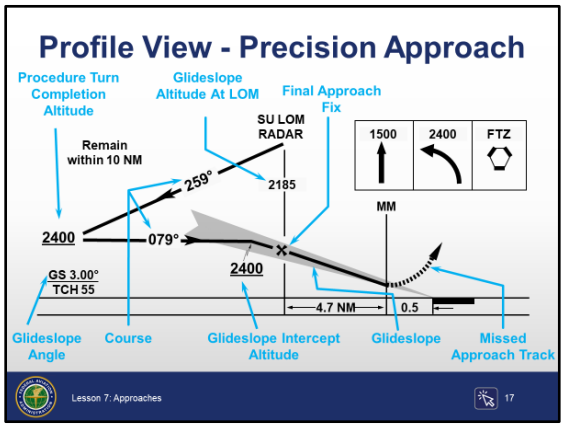
Missed Approach

- Icons
  - Provide a visual depiction of the instructions for conducting the missed approach procedure
    - Icons shown are in addition to the full text found in the Pilot Briefing Information section
  - Give the pilot a quick reference of critical data
  - Provide the essential steps in visual form and may include any or all of the following:
    - Direction of the initial turn
    - Next heading and/or course
    - Next altitude
    - Next/holding fix
  - Found in the Profile Box
- Textual Description
  - Provide full textual instructions for conducting the missed approach procedure
  - Found in the Pilot Briefing Information section

DECISION HEIGHT (DH) - A specified altitude (MSL) above the runway threshold on an ILS or PAR instrument approach procedure at which the pilot must decide whether to continue the approach, or initiate an immediate missed approach if the pilot does not see the required visual references.

Profile View - Precision Approach

Aeronautical Chart User's Guide, pp. 103, 109, 125



Profile View - Precision Approach

This slide is animated, 8 clicks. Click where indicated by click icon.

As each element is labeled on the slide, use a pointer to point to its position on the chart. Direct the students to follow along on the IAP chart handout.

- The Profile View of a precision approach shows a side view of the IAP. The symbology is located in the legend, Section H.
  - The information is different for precision and nonprecision approaches
- Found in the Profile Box
- The following items are shown in the Profile View of a precision approach:
  - Glideslope
  - Final Approach Fix (FAF) depicted by a:
    - Lightning bolt " " when flown as a full ILS approach with glideslope
    - Maltese cross " ✕ " when flown as a localizer approach (when the glideslope is inoperative)
  - Course of the IAP

Continued on next page

IAP CHART *(CONT'D)*

Profile View - Precision Approach (Cont'd)

Aeronautical Chart User's Guide, pp. 103, 109, 125

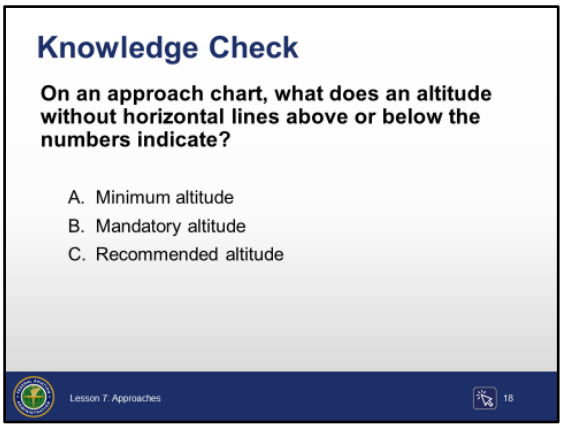
- Minimum altitude (depicted as an underlined altitude)
  - Procedure turn completion altitude (minimum altitude)
  - Glideslope intercept altitude (minimum altitude)
  - Glideslope altitude at LOM
  - Glideslope angle
- Maximum altitude (depicted as an altitude with line above)
- Recommended altitudes are depicted with no lines above or below the numbers (not shown)
- Mandatory altitudes are depicted with a line above and below the numbers (not shown)
- Missed approach information
  - Missed approach track is shown as a dashed line
  - Missed Approach Point (MAP) for an ILS approach is at the Decision Height (DH)
- Middle marker

The profile view contained in the handout does not depict a middle marker.

- Distance from:
  - Runway threshold to the middle marker
  - Middle marker to LOM

IAP CHART *(CONT'D)*

Knowledge Check

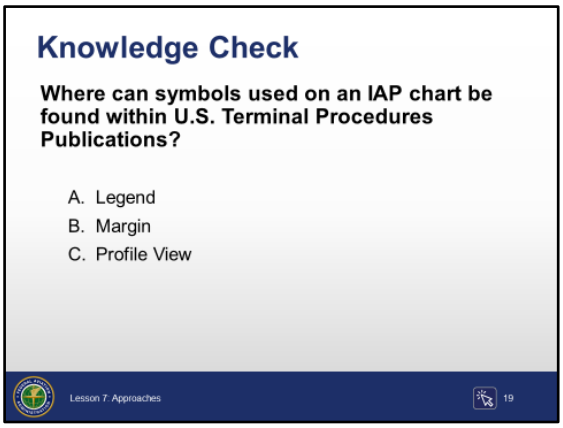


QUESTION: On an approach chart, what does an altitude without horizontal lines above or below the numbers indicate?

Answer: *C. Recommended altitude*

IAP CHART *(CONT'D)*

Knowledge Check

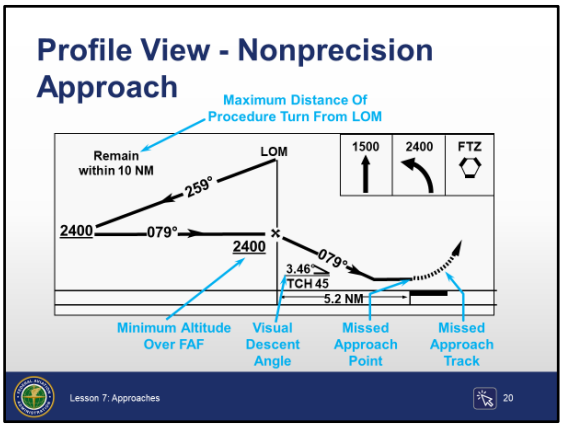


QUESTION: Where can symbols used on an IAP chart be found within U.S. Terminal Procedures Publications?

Answer: *A. Legend*

Profile View - Nonprecision Approach

Aeronautical Chart User's Guide, p. 109



Profile View - Nonprecision Approach

This slide is animated, 5 clicks. Click where indicated by click icon.

As each element is labeled on the slide, use a pointer to point to its position on the chart.

- The Profile View of a nonprecision approach shows a side view of the IAP. The symbology is located in the legend, Section H.
- The following items are shown in the Profile View of a nonprecision approach:
  - Final Approach Fix (FAF)
    - Depicted by a Maltese Cross "✠"
  - Radials or bearings to be flown

NOTE: Courses are depicted as 3 numbers followed by the degree symbol (e.g., 259°). Radials are depicted as "R-" followed by 3 numbers (e.g., R-259).

  - Minimum altitudes
    - Procedure turn altitude
    - Minimum altitude over FAF
  - Visual Descent Angle (VDA)
  - Threshold Crossing Height (TCH)
  - Maximum distance of procedure turn to NAVAID

Continued on next page

IAP CHART *(CONT'D)*

Profile View - Nonprecision Approach (Cont'd)

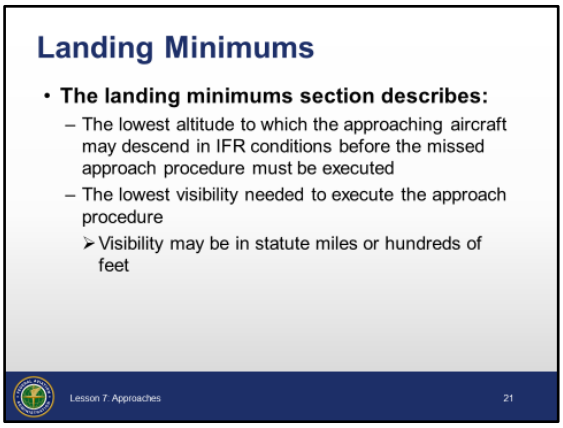
Aeronautical Chart User's Guide, p. 109

- Missed approach information
  - Missed Approach Point (MAP) timed from the FAF using the Time/Speed Table in the Airport Sketch Box, if present
  - Missed approach track shown as a dashed line
- Distance from runway threshold to the Final Approach Fix (FAF)

Landing Minimums

JO 7110.65, par. 1-2-1

Aeronautical Chart User's Guide, pp. 112 - 113



Landing Minimums

- The landing minimums section describes:
  - The lowest altitude to which the approaching aircraft may descend in IFR conditions before the missed approach procedure must be executed
  - The lowest visibility needed to execute the approach procedure
    - Visibility may be in statute miles or in hundreds of feet
- Controllers are responsible for providing prevailing visibility information to the pilot. By comparing this visibility to the minimum visibility information provided in this section, the pilot decides what type of IAP to execute.

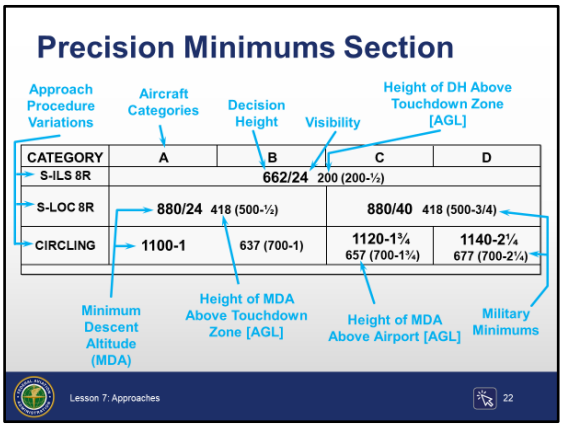
  NOTE: Controllers are not responsible for determining whether landing minimums exist.

Precision Minimums Section

Aeronautical Chart User's Guide, p. 112

FAA-H-8083-16, pp. 4-8

JO 7110.65, PCG



Precision Minimums Section

This slide is animated, 9 clicks. Click where indicated by click icon.

As each element is labeled on the slide, use a pointer to point to its position on the chart. Direct the students to follow along on the IAP chart handout.

⊙ The following are contained in the Precision Minimums section:

- Aircraft categories
  - Determined according to weight and landing speed
- Variations of the approach procedure
  - Straight-in - To the runway lined up with the approach
  - Localizer - Used when the glideslope component of the ILS is inoperative. This is a nonprecision approach.
  - Circling - When the aircraft must circle to another runway because of wind direction and/or velocity, or other runway restrictions
- Decision Height (DH) - Used for precision approach only
- Visibility
  - Runway Visual Range (RVR)
    - RVR is an instrumentally derived measurement of horizontal visibility down the runway from the approach end, in hundreds of feet
    - Value preceded by a "/"

Continued on next page

Precision Minimums Section (Cont'd)

Aeronautical Chart User's Guide, p. 112

JO 7110.65, PCG

- Statute miles
  - Value preceded by a "-"

HEIGHT ABOVE TOUCHDOWN (HAT) - The height of the Decision Height or Minimum Descent Altitude above the highest runway elevation in the touchdown zone (first 3,000' of the runway). HAT is published on instrument approach charts in conjunction with all straight-in minimums.

- Height of Decision Height (DH) above touchdown zone [AGL]
  - Used for a straight-in approach only, because the landing runway is known and the glideslope is operational
- Minimum Descent Altitude (MDA)
  - Used for nonprecision approaches
- Height of MDA Above Touchdown Zone [AGL]
  - Used for localizer approach because runway is known but glideslope is inoperative

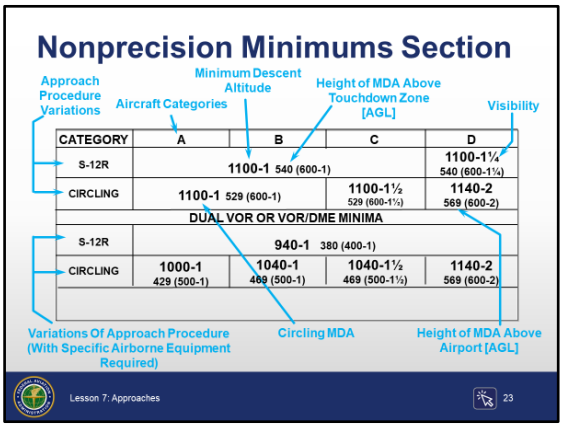
HEIGHT ABOVE AIRPORT (HAA) - The height of the Minimum Descent Altitude above the published airport elevation. This is published in conjunction with circling minimums.

- Height of MDA Above Airport [AGL]
  - The height of the Minimum Descent Altitude above the published airport elevation
  - Used for the circling version of the approach because the runway is not known and glideslope inoperative
    - MDA for the circling version of the approach is the highest of all the minimum altitudes
- Nonstandard takeoff and alternate minimums and notes
- Military minimums are shown in parentheses
  - Rounded up to next hundred foot increment

Nonprecision Minimums Section

Aeronautical Chart User's Guide, p. 112

JO 7110.65, PCG



Nonprecision Minimums Section

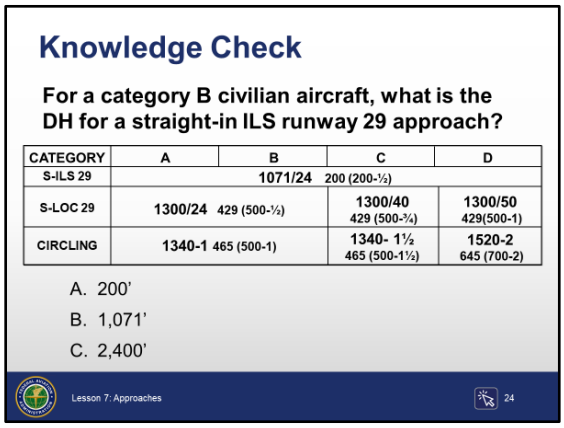
This slide is animated, 8 clicks. Click where indicated by click icon.

As each element is labeled on the slide, use a pointer to point to its position on the chart.

⊙ The following items are contained in the nonprecision minimums section:

- Aircraft categories
- Variations of the approach procedure
  - Variations with specific airborne equipment required
- Minimum Descent Altitude (MDA) in MSL
- Height of *MDA Above* Touchdown Zone [AGL]
  - Only used for straight-in version
- Visibility in statute miles
- Circling MDA
- Height of MDA Above Airport [AGL]
  - Only used for circling version

Knowledge Check

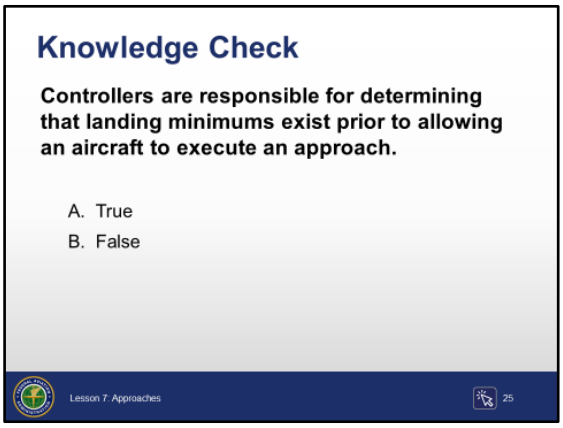


Question: For a category B civilian aircraft, what is the DH for a straight-in ILS runway 29 approach?

CATEGORY	A	B	C	D
S-ILS 29	1071/24 200 (200-½)			
S-LOC 29	1300/24 429 (500-½)		1300/40 429 (500-¾)	1300/50 429(500-1)
CIRCLING	1340-1 465 (500-1)		1340- 1½ 465 (500-1½)	1520-2 645 (700-2)

Answer: *B. 1,071'*

Knowledge Check

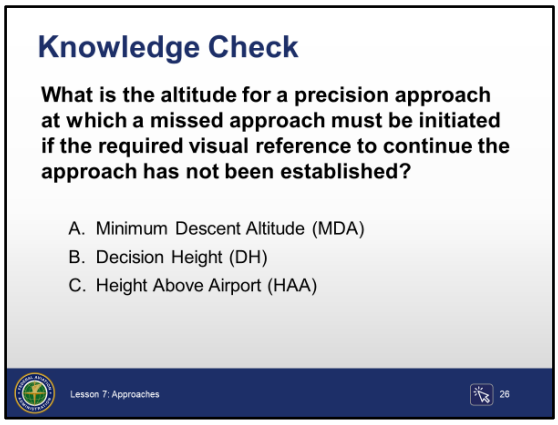


QUESTION: Controllers are responsible for determining that landing minimums exist prior to allowing an aircraft to execute an approach.

Answer: *B. False*

IAP CHART *(CONT'D)*

Knowledge Check



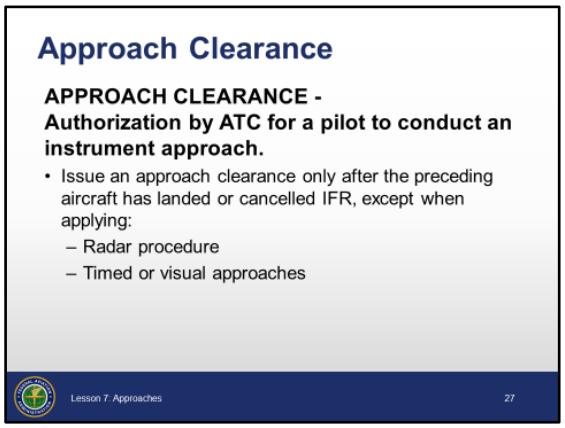
QUESTION: What is the altitude for a precision approach at which a missed approach must be initiated if the required visual reference to continue the approach has not been established?

Answer: *B. Decision Height (DH)*

APPROACH REQUIREMENTS

Approach Clearance

JO 7110.65, pars. 4-8-1, 5-9-1, 5-9-2, and PCG



APPROACH CLEARANCE - Authorization by ATC for a pilot to conduct an instrument approach.

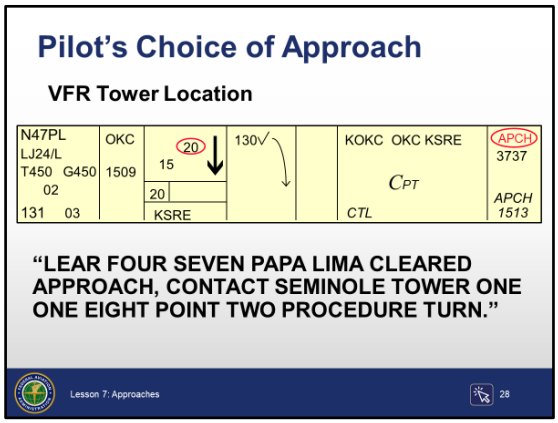
- Issue an approach clearance only after the preceding aircraft has landed or cancelled IFR, except when applying:
  - Radar procedure
  - Timed or visual approaches
- Clear aircraft for standard or special instrument procedures only:
  - When procedure shall commence at an Initial Approach Fix (IAF), or an Intermediate Fix (IF) if there is no IAF
  - When RNAV procedure may begin at the IF when certain conditions are met, which will be covered at a later stage of training
  - Where adequate radar coverage exists, an aircraft may be vectored to final approach course. Approach course maximum intercept angles:
    - Less than two miles from the approach gate - 20 degrees
    - 2 miles or more from the approach gate - 30 degrees
    - RNAV approach - 90 degrees, with exceptions

  NOTE: Intercept angles will be covered in depth in a later stage of training.
- To specify a particular approach, specify the name of the approach as published in the IAP chart
- If only one approach of a particular type is published, the approach need not be identified by runway reference

APPROACH REQUIREMENTS *(CONT'D)*

Pilot's Choice of Approach

JO 7110.65, pars. 4-8-1, 4-8-2



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Pilot's Choice of Approach

⊙ VFR Tower Location

- The type of approach does not need to be specified when:
  - There is only one approach into the airport
  - The controller is giving the pilot the choice of any instrument approach
  - The aircraft must be on a published route

CLEARED APPROACH

Example:

"LEAR FOUR SEVEN PAPA LIMA CLEARED APPROACH, CONTACT SEMINOLE TOWER ONE ONE EIGHT POINT TWO PROCEDURE TURN."

Click to show an approach clearance to an FSS location.

⊙ FSS location

- At airports without air traffic control services, include destination airport with approach clearance

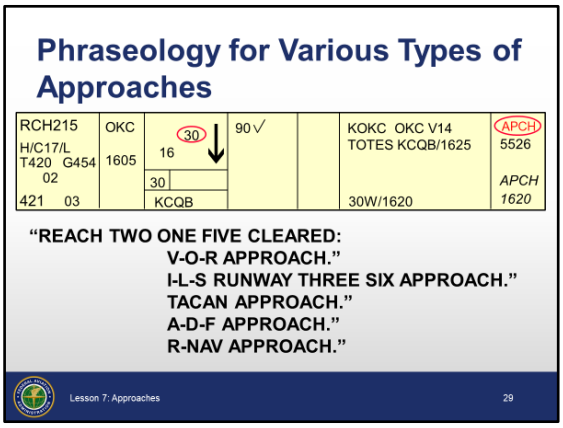
Example:

"NOVEMBER FIVE FIVE LIMA WHISKEY, CLEARED APPROACH MIAMI AIRPORT, CONTACT MIAMI RADIO PROCEDURE TURN."

APPROACH REQUIREMENTS *(CONT'D)*

Phraseology for Various Types of Approaches

JO 7110.65, pars. 4-8-1, 4-8-2



Phraseology for Various Types of Approaches

Examples: "REACH TWO ONE FIVE CLEARED:

V-O-R APPROACH"

I-L-S RUNWAY THREE SIX APPROACH"

TACAN APPROACH"

A-D-F APPROACH"

R-NAV APPROACH"

APPROACH REQUIREMENTS *(CONT'D)*

Communications Release

JO 7110.65, pars. 4-8-8, 5-1-9

Communications Release

- If an IFR aircraft intends to land at an airport not served by a tower or FSS, approve a change to advisory frequency when you no longer require direct communications
  - Permits the aircraft to receive timely local airport traffic information

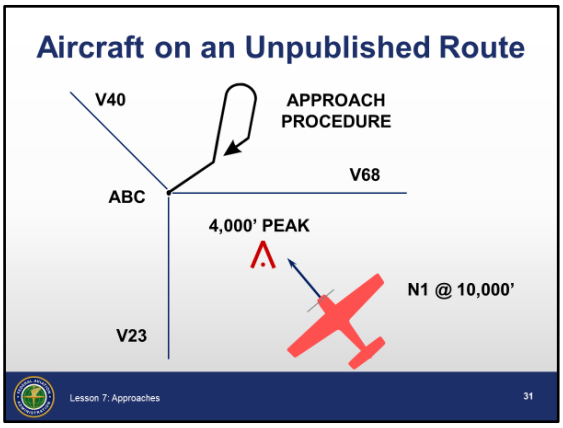
CHANGE TO ADVISORY FREQUENCY APPROVED

NOTE: Radar service is automatically terminated and the aircraft need not be advised of termination when it is instructed to change to advisory frequency.

APPROACH REQUIREMENTS *(CONT'D)*

Aircraft on an Unpublished Route

JO 7110.65, par. 4-8-1



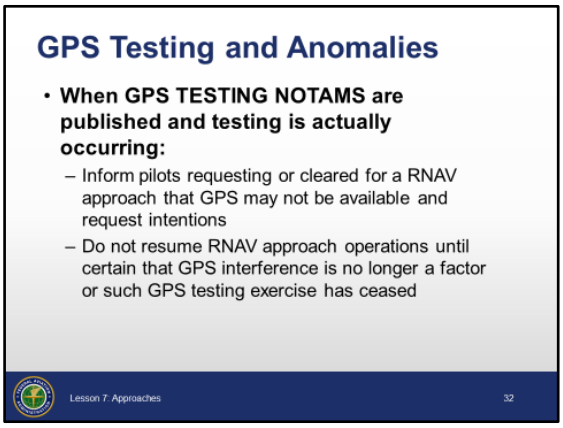
Aircraft on an Unpublished Route

- Issue approach clearance only after aircraft is:
  - Established on a segment of a published route or instrument approach procedure, or
  - Assigned an altitude to maintain until established on a segment of a published route or instrument approach procedure
    - Altitude must ensure terrain and obstruction clearance
- For RNAV-equipped aircraft, issue conventional or RNAV SIAP clearance only after aircraft is:
  - Established on a heading or course direct to the Initial Approach Fix (IAF) at an intercept angle not greater than 90 degrees
  - Established on a heading or course direct to the Intermediate Fix (IF), provided:
    - Radar monitoring provided to the IF
    - Aircraft is filed RNAV or GPS capable
    - Pilot advised to expect clearance to the IF at least 5 minutes from the IF
    - Assigned an altitude to maintain until the IF
    - On a course direct to the IF at an angle not more than 90 degrees at an altitude that will permit for normal descent
- Where instrument approaches require radar monitoring, and radar services are not available, you must specify the approach procedure
  - Do not use the phraseology "CLEARED APPROACH"

GPS Testing and Anomalies

JO 7110.65, pars.4-7-12, 4-8-1

AIM, par. 1-1-17



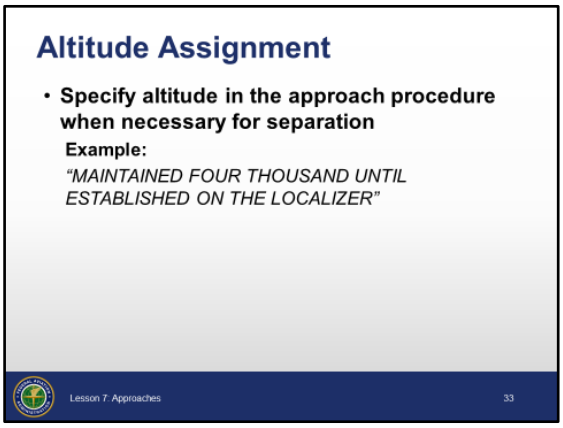
GPS Testing and Anomalies

- When GPS TESTING NOTAMS are published and testing is actually occurring:
  - Inform pilots requesting or cleared for an RNAV approach that GPS may not be available and request intentions
  - Do not resume RNAV approach operations until certain that GPS interference is no longer a factor or such GPS testing exercise has ceased
- During times when pilots report GPS anomalies, request the pilot's intentions, and/or clear that aircraft for an alternative approach if available and operational. Announce to other aircraft requesting an RNAV approach that GPS is reported unavailable, and request intentions.
- GPS NOTAM advisory may be omitted when provided on ATIS and the pilot indicates having ATIS information

APPROACH REQUIREMENTS *(CONT'D)*

Altitude Assignment

JO 7110.65, pars. 4-8-4, 4-8-5



Altitude Assignment

- Specify altitude in the approach procedure when necessary for separation

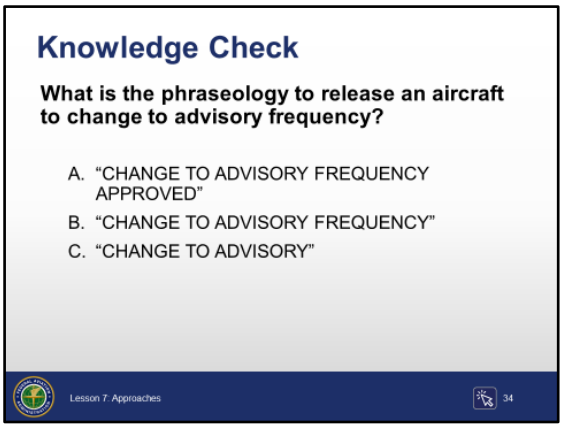
Example:

"MAINTAIN FOUR THOUSAND UNTIL ESTABLISHED ON THE LOCALIZER"

- Omit specifying the altitude in an approach clearance when vertical separation will be provided by pilot adherence to prescribed:
  - Minimum altitude
  - Maximum altitude
  - Mandatory altitude
- Military high altitude instrument approaches:
  - Altitudes above those shown on the high altitude instrument approach procedures chart may be specified when required for separation

APPROACH REQUIREMENTS *(CONT'D)*

Knowledge Check

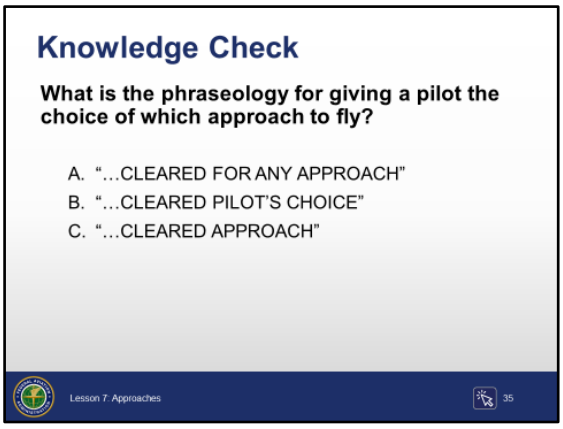


QUESTION: What is the phraseology to release an aircraft to change to advisory frequency?

Answer: *A. "CHANGE TO ADVISORY FREQUENCY APPROVED"*

APPROACH REQUIREMENTS *(CONT'D)*

Knowledge Check

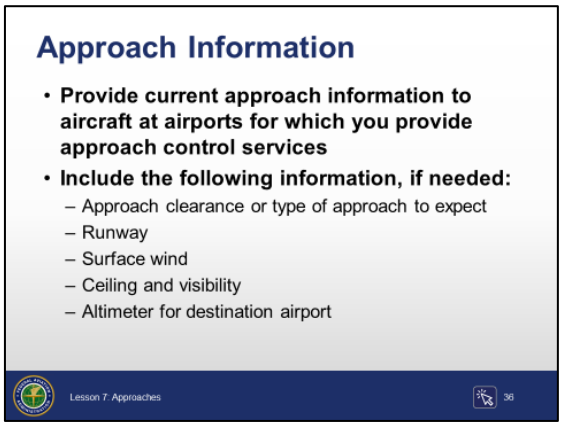


QUESTION: What is the phraseology for giving a pilot the choice of which approach to fly?

Answer: *C. "CLEARED APPROACH"*

Approach Information

JO 7110.65, par. 4-7-10



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Approach Information

- Provide current approach information to aircraft at airports for which you provide approach control services. This information must be provided on initial contact or as soon as possible.

Click to reveal additional bullets.

- Include the following information:
  - Approach clearance or type of approach to expect if:
    - Two or more approaches are published, and
    - Clearance limit does not indicate which approach will be made
  - Runway, if different from that to which the instrument approach will be made
  - Surface wind
  - Ceiling and visibility if:
    - Reported ceiling is below 1,000’ or highest circling minima, whichever is greater
    - Visibility is less than three miles
  - Altimeter setting for destination airport

Continued on next page

APPROACH PROCEDURES *(CONT'D)*

Approach Information (Cont'd)

JO 7110.65, par. 4-7-10 and PCG

AC 150/5220-16E

- Approach information contained in the Automatic Terminal Information Service (ATIS) broadcast may be omitted if pilot states the appropriate ATIS code

NOTE: At airports without ATIS, the wind, visibility, and altimeter may be omitted after the pilot advises receipt of the automated weather.

- If requested, inform the pilot where automated weather data may be obtained, and if appropriate, that airport weather is not available

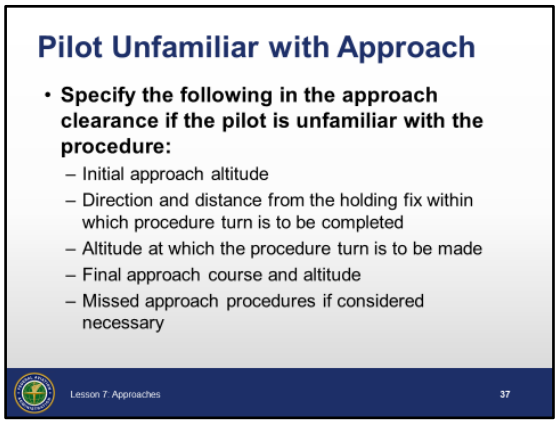
(Airport) AWOS/ASOS WEATHER AVAILABLE ON (frequency)

AUTOMATED WEATHER SYSTEM - Any of the automated weather sensor platforms that collect weather data at airports and disseminate the weather information via radio and/or landline. The systems currently consist of the Automated Surface Observing System (ASOS) and Automated Weather Observation System (AWOS).

AWOS reports are generally disseminated nationally at 20-minute intervals. ASOS reports are generally disseminated nationally at hourly intervals, but also special observation reports are disseminated nationally if weather conditions change rapidly and cross aviation operation thresholds. Updated minute-by-minute observations are available to pilots over the radio.

Pilot Unfamiliar with Approach

JO 7110.65, par. 4-8-10



Pilot Unfamiliar with Approach

⊙ Specify the following in the approach clearance if the pilot is unfamiliar with the procedure:

- Initial approach altitude
- Direction and distance from the holding fix within which procedure turn is to be completed
- Altitude at which the procedure turn is to be made
- Final approach course and altitude
- Missed approach procedures if considered necessary

INITIAL APPROACH AT (altitude), PROCEDURE TURN AT (altitude), (number) MINUTES/MILES (direction), FINAL APPROACH ON (name of NAVAID) (specified) COURSE/RADIAL/AZIMUTH AT (altitude)

- Applicable notations on instrument approach charts which require the pilot to comply with, or act on an instruction

Examples: "STRAIGHT-IN MINIMA NOT AUTHORIZED AT NIGHT"

"PROCEDURE NOT AUTHORIZED WHEN GLIDESLOPE/GLIDEPATH NOT USED"

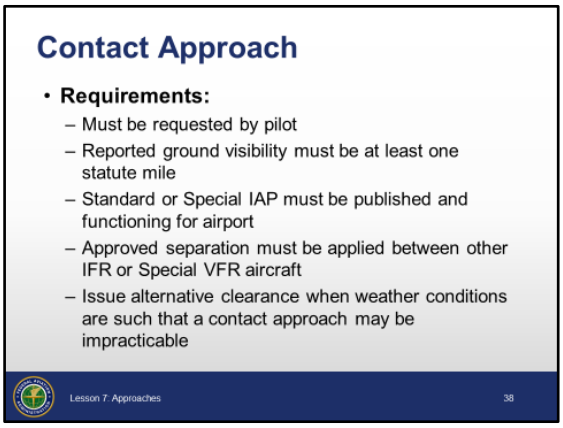
"USE OF PROCEDURE LIMITED TO AIRCRAFT AUTHORIZED TO USE AIRPORT"

"PROCEDURE NOT AUTHORIZED AT NIGHT"

Contact Approach

JO 7110.65, par. 7-4-6, and PCG

AIM, par. 5-4-25



CONTACT APPROACH - An approach wherein an aircraft on an IFR flight plan, having an air traffic control authorization, operating clear of clouds with at least 1 mile flight visibility and a reasonable expectation of continuing to the destination airport in those conditions, may deviate from the instrument approach procedure and proceed to the destination airport by visual reference to the surface.

⊙ Requirements:

- Pilot must request a contact approach; controllers cannot suggest or initiate a contact approach to a pilot
- Reported ground visibility must be at least one statute mile
- Standard or Special IAP must be published and functioning for airport
- Approved separation must be applied between other IFR or Special VFR aircraft
  - Do not assign a fixed altitude
  - Clear aircraft at or below an altitude 1,000' below traffic, but not below the minimum safe altitude
- Issue an alternative clearance when weather conditions are such that a contact approach may be impracticable

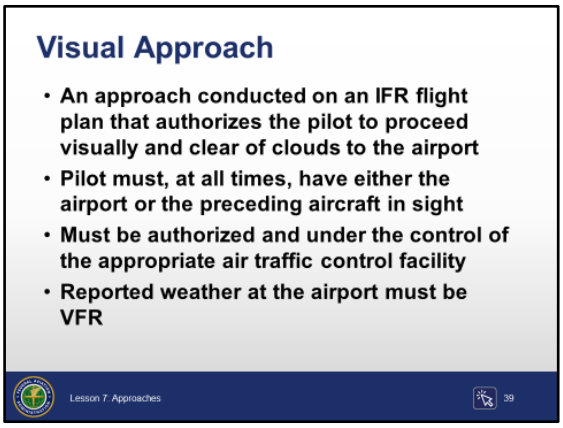
CLEARED CONTACT APPROACH, (and if required) AT OR BELOW (altitude) (routing), IF NOT POSSIBLE, (alternative procedures) AND ADVISE

NOTE: When executing a contact approach, the pilot is responsible for maintaining the required flight visibility, cloud clearance, and terrain/ obstruction clearance. The pilot may find it necessary to descend, climb, and/or fly a circuitous route to the airport to maintain cloud clearance and/or terrain/obstruction clearance, unless restricted by the controller.

Visual Approach

JO 7110.65, pars. 7-4-1, 7-4-2, 7-4-3, and PCG

AIM, par. 5-4-23



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Visual Approach

- An approach conducted on an IFR flight plan that authorizes the pilot to proceed visually and clear of clouds to the airport
- Pilot must, at all times, have either the airport or the preceding aircraft in sight

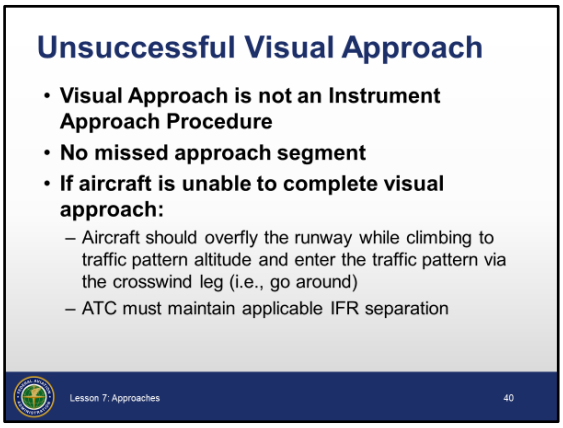
Click to reveal the additional bullets.

- Must be authorized and under the control of the appropriate air traffic control facility
- Reported weather at the airport must be VFR

Unsuccessful Visual Approach

JO 7110.65, pars. 7-4-1, 7-4-2, 7-4-3, and PCG

AIM, par. 5-4-23

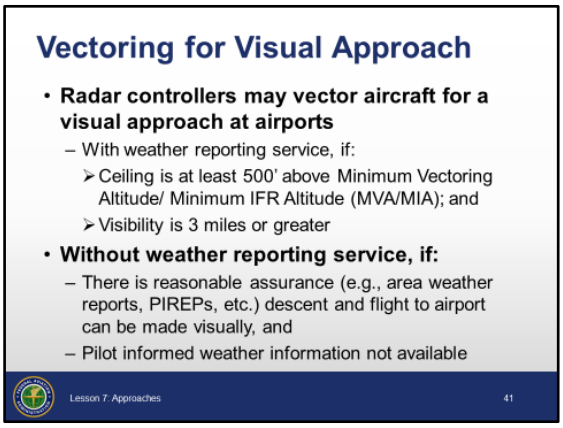


Unsuccessful Visual Approach

- A visual approach is not an instrument approach procedure
- A visual approach has no missed approach segment
- If aircraft is unable to complete visual approach:
  - Aircraft should overfly the runway while climbing to traffic pattern altitude and enter the traffic pattern via the crosswind leg (i.e., go around)
  - ATC must maintain applicable IFR separation

Vectoring for Visual Approach

JO 7110.65, pars. 7-4-2, 7-4-3, and PCG



Vectoring for Visual Approach

⊙ Radar controllers may vector aircraft for a visual approach at airports

- With weather reporting service, if:
  - Ceiling is at least 500' above Minimum Vectoring Altitude/ Minimum IFR Atltitude (MVA/MIA), and
  - Visibility is 3 miles or greater
- Without weather reporting service, if:
  - There is reasonable assurance (e.g. area weather reports, PIREPs, etc.) that descent and flight to the airport can be made visually, and
  - Pilot has been informed that weather information is not available

NOTE: A pilot request for a visual approach indicates that descent and flight to the airport can be made VFR.

(Call sign) FLY HEADING or TURN RIGHT/LEFT HEADING (degrees), VECTOR FOR VISUAL APPROACH TO (airport name); (if appropriate) WEATHER NOT AVAILABLE, or VERIFY THAT YOU HAVE THE (airport) WEATHER

(Call sign) (control instructions as required) CLEARED VISUAL APPROACH RUNWAY (number)

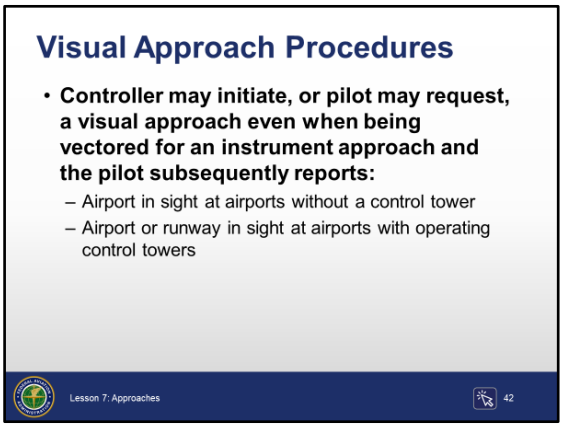
Or

(Call sign) (control instructions as required) CLEARED VISUAL APPROACH TO (airport name)

Visual Approach Procedures

JO 7110.65, pars. 7-4-1, 7-4-2, 7-4-3, and PCG

AIM, par. 5-4-23



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Visual Approach Procedures

⊙ Aircraft may be cleared for a visual approach using the following procedures:

- Controller may initiate, or pilot may request, a visual approach even when being vectored for an instrument approach and the pilot subsequently reports:
  - Airport in sight at airports without a control tower
  - Airport or runway in sight at airports with operating control towers
- All potential conflicts have been resolved, and:
  - An overtaking aircraft has been advised of distance to the preceding aircraft and speed difference
  - Weather conditions at airport are VFR or pilot is informed weather is unavailable at airports without weather reporting service
  - Upon request, pilot is advised of AWOS/ASOS frequency
- Clear an aircraft for a visual approach when:
  - Aircraft is number one in approach sequence, or
  - At airports with an operational control tower:
    - Pilot reports preceding aircraft in sight and is instructed to follow it, or
    - Pilot reports airport or runway in sight (but not preceding aircraft) and radar separation is maintained until visual separation is provided

Continued on next page

Visual Approach Procedures (Cont'd)

JO 7110.65, pars. 7-4-1, 7-4-2, 7-4-3, and PCG

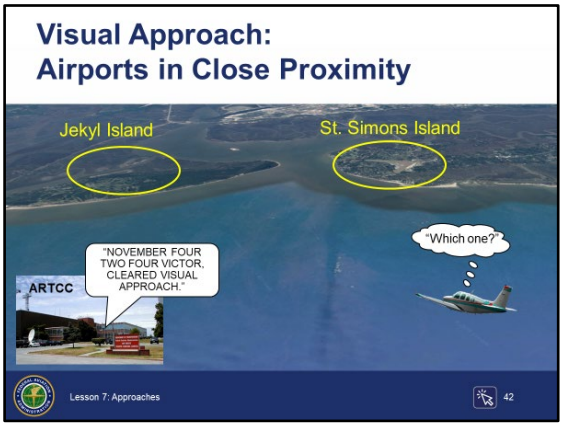
AIM, par. 5-4-23

- All aircraft following a heavy, or a small aircraft following a B757, must be informed of the airplane manufacturer and/or model

NOTE: Visual separation is not authorized when the lead aircraft is a super.

- Ensure that the location of the airport is provided when the pilot is asked to report the destination airport in sight

Click to show airports in close proximity.



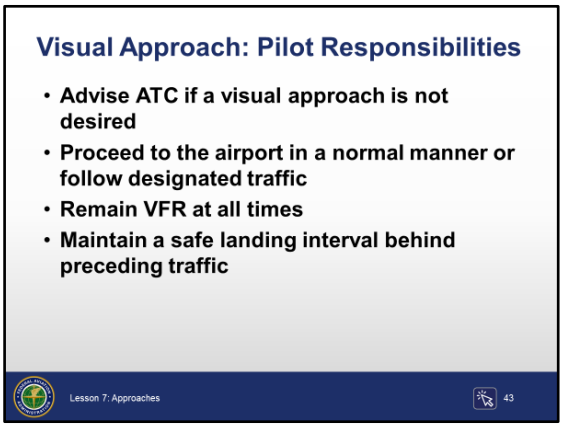
- In those instances where airports are located in close proximity, also provide the location of the airport that may cause the confusion

  Example: "NOVEMBER FOUR TWO FOUR VICTOR, SAINT SIMONS ISLAND AIRPORT IS AT 1 O'CLOCK, 5 MILES. JEKYL ISLAND AIRPORT IS AT 11 O'CLOCK 9 MILES. REPORT SAINT SIMONS IN SIGHT."

- At controlled airports:
  - Inform the tower of the aircraft's position prior to communications transfer
  - Standard Terminal Automation Replacement System (STARS) function may be used provided LOA or facility directive specifies control and comunication transfer points

Visual Approach: Pilot Responsibilities

AIM, par. 5-4-23



This slide is animated, 1 click.

Visual Approach: Pilot Responsibilities

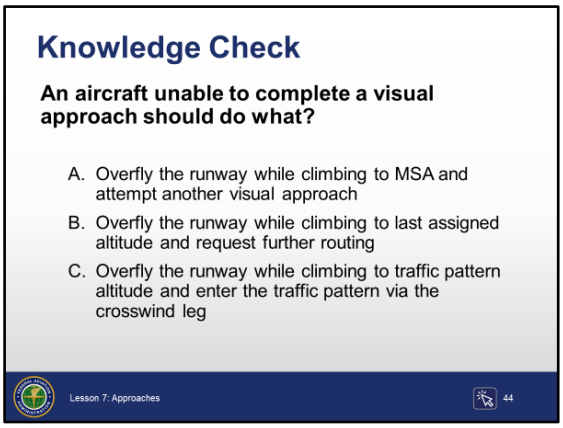
⊙ Expect pilots to:

- Advise ATC if a visual approach is not desired
- Proceed to the airport in a normal manner or follow designated traffic
- Remain VFR at all times
- Maintain a safe landing interval behind preceding traffic

Click to change the bullets.

- Accept responsibility for wake turbulence separation
- Contact ATC as soon as possible if unable to land
- Advise ATC if unable to:
  - Continue following designated traffic
  - Remain in VFR conditions

Knowledge Check

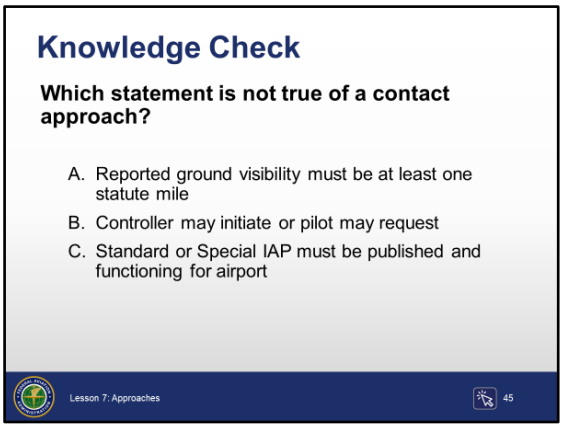


QUESTION: An aircraft unable to complete a visual approach should do what?

Answer: *C. Overfly the runway while climbing to traffic pattern altitude and enter the traffic pattern via the crosswind leg*

APPROACH PROCEDURES *(CONT'D)*

Knowledge Check

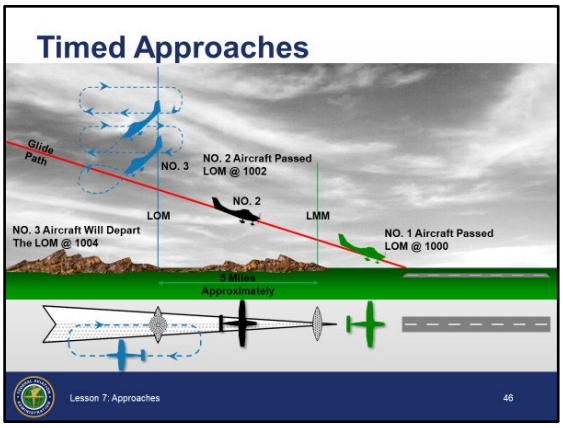


QUESTION: Which statement is not true of a contact approach?

Answer: *B. Controller may initiate or pilot may request*

Timed Approaches

JO 7110.65, pars. 6-7-1, 6-7-2, 6-7-5, 6-7-6

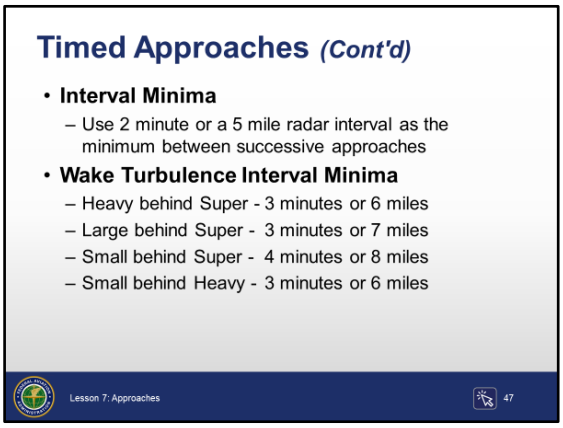


Timed Approaches

- Require NAVAIDs and Standard/Special IAPs or adequate radar coverage that permit aircraft to:
  - Hold at a fix located on the approach course, or
    - Be vectored to final approach course for a straight-in approach
  - Proceed in direction of the airport along the approach course
    - Crossing the holding/approach fix at specified altitude, if required
  - Continue descent for approach to destination airport
- May be used at airports served by a tower if the following conditions are met:
  - Direct communication is maintained with aircraft
    - Release aircraft to tower prior to Final Approach Fix (FAF)
  - If more than one missed approach procedure is available, no course reversal is required
  - If only one missed approach procedure is available, the following conditions must be met:
    - Course reversal is not required
    - Reported ceiling and visibility are equal to or greater than the highest prescribed circling minimums for the IAP in use
- A time check is required before specifying a time to leave the approach fix inbound
  - Not required if aircraft is vectored to final approach course

Timed Approaches (Cont'd)

JO 7110.65, pars. 6-7-1, 6-7-2, 6-7-5, 6-7-6



This slide is animated, 2 clicks.

⊙ Interval Minima

- Use 2 minute or a 5 mile radar interval as the minimum between successive approaches

Click to reveal wake turbulence interval minima.

⊙ Wake Turbulence Interval Minima:

- Heavy behind Super - 3 minutes or 6 miles
- Large behind Super - 3 minutes or 7 miles
- Small behind Super - 4 minutes or 8 miles
- Small behind Heavy - 3 minutes or 6 miles

⊙ Increase the interval, as necessary, taking into account the:

- Relative speeds of the aircraft concerned
- Existing weather conditions
- Distance between the approach fix and the airport
- Type of approach being made

Continued on next page

APPROACH PROCEDURES *(CONT'D)*

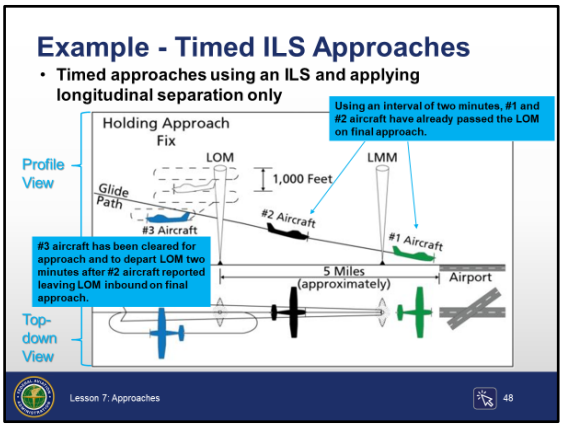
Timed Approaches (Cont'd)

JO 7110.65, par. 6-7-2

- Approach sequence
  - After first aircraft passes FAF inbound (nonprecision approach) or the outer marker/fix used in lieu of outer marker (precision approach), clear succeeding aircraft to:
    - Descend to the altitude vacated by the preceding aircraft
    - Leave the FAF or outer marker/fix used in lieu of outer marker inbound at specified time
- When using radar to sequence and position aircraft on the final approach course:
  - Vector aircraft to cross FAF/outer marker or fix used in lieu of outer marker in compliance with appropriate interval minima
- If an alternative missed approach procedure is not available and weather conditions are less than required:
  - Clear succeeding aircraft for approach when preceding aircraft has:
    - Landed, or
    - Cancelled IFR flight plan

Timed Precision Approach

JO 7110.65, par. 6-7-2



This slide is animated, 2 clicks.

Timed ILS Approaches Example

- Slide depicts timed approaches using an ILS and applying longitudinal separation only

NOTE: This example uses 2 minutes longitudinal separation, but could have used 5 miles.

Click to reveal the note about the #1 and #2 aircraft.

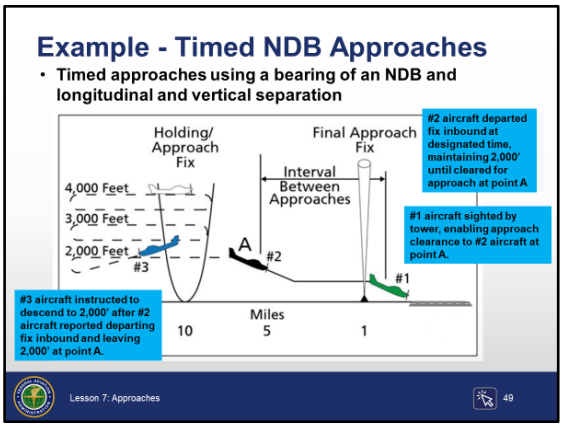
- Using an interval of two minutes, #1 and #2 aircraft have already passed the LOM on final approach

Click to reveal the note about the #3 aircraft.

- #3 aircraft has been cleared for approach and to depart the LOM two minutes after #2 aircraft reported leaving the LOM inbound on final approach

Timed Nonprecision Approach

JO 7110.65, par. 6-7-2



This slide is animated, 3 clicks.

Timed NDB Approaches Example

- Slide depicts timed approach using a bearing of an NDB and applying longitudinal and vertical separation

NOTE: This example uses 5 miles longitudinal separation, but 2 minutes could have been used.

Click to reveal the note about the #1 and #2 aircraft.

- #1 aircraft has been sighted by tower, enabling approach clearance to #2 aircraft at point A

Click to reveal the note about the #2 aircraft.

- #2 aircraft has departed fix inbound at the designated time, maintaining 2,000' until cleared for approach at point A

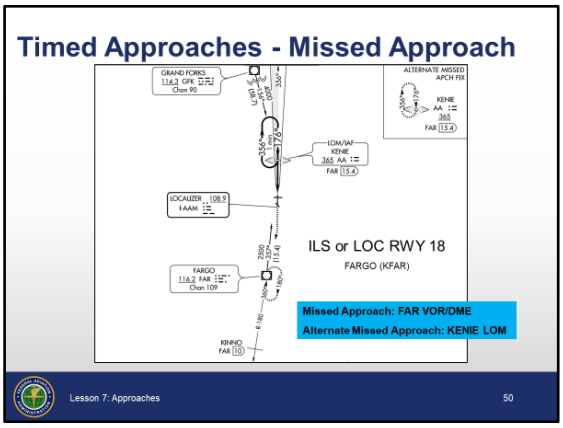
Click to reveal the note about the #3 aircraft.

- #3 aircraft has been instructed to descend to 2,000' after #2 aircraft has reported departing fix inbound and leaving 2,000' at point A

APPROACH PROCEDURES *(CONT'D)*

Timed Approaches - Missed Approach

JO 7110.65, pars. 6-7-2, 6-7-7

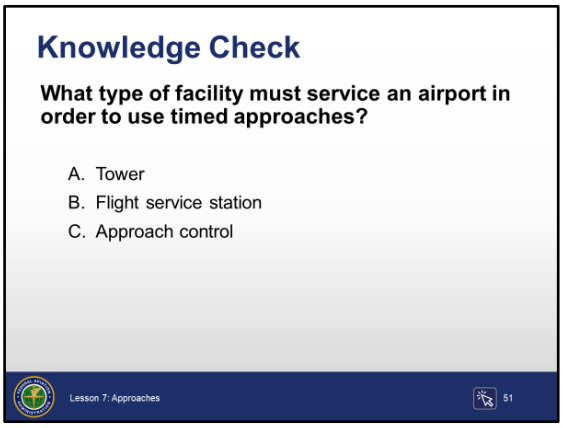


Timed Approaches - Missed Approaches

- If an alternative missed approach procedure is available:
  - If weather conditions are such that an aircraft will likely miss an approach, issue an alternative missed approach procedure to the next aircraft
  - If an aircraft misses an approach, allow the next aircraft to continue the approach if it has been assigned an alternative missed approach procedure
    - Retain radar control or hold any remaining aircraft at assigned altitudes until traffic conditions permit the issuance of approach clearances
- If an alternative missed approach procedure is not available:
  - If weather conditions are less than required, clear succeeding aircraft for approach when the preceding aircraft has landed or canceled its IFR flight plan

Point out the missed approach shown on the slide - "Climb to 3000 direct KENIE LOM and hold, continue climb-in-hold to 3000." Ask the students what would happen if an aircraft missed approach, the following aircraft missed approach, and neither aircraft had been cleared via an alternate missed approach procedure.

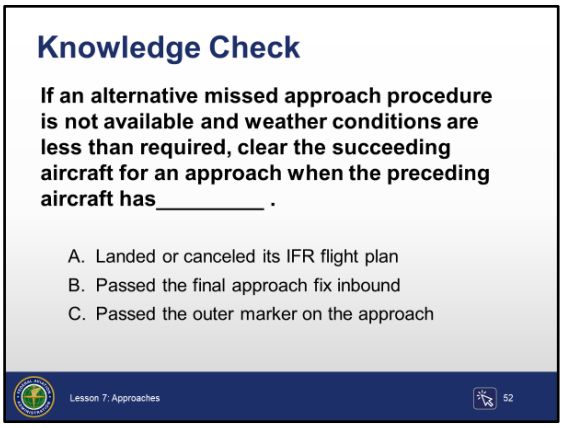
Knowledge Check



QUESTION: What type of facility must service an airport in order to use timed approaches?

Answer: *A. Tower*

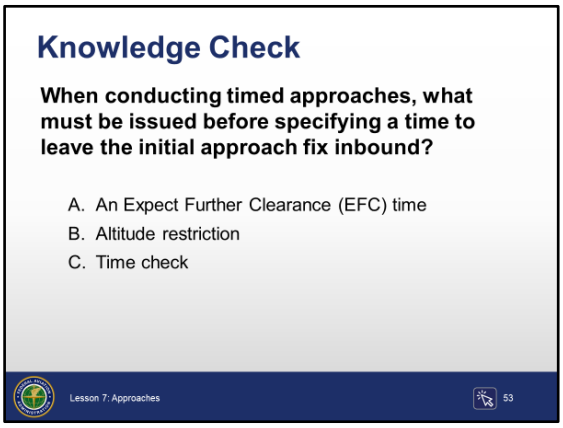
Knowledge Check



QUESTION: If an alternative missed approach procedure is not available and weather conditions are less than required, clear the succeeding aircraft for an approach when the preceding aircraft has_____ .

Answer: *A. Landed or canceled its IFR flight plan*

Knowledge Check



QUESTION: When conducting timed approaches, what must be issued before specifying a time to leave the initial approach fix inbound?

Answer: *C. Time check*

Cancellation of IFR Flight Plan

JO 7110.65, par. 4-2-10

AIM, par. 5-1-15

Cancellation of IFR Flight Plan

- If arriving at an airport not served by a tower or FSS, instruct the pilot how to cancel IFR flight plan before instructing the pilot to change to the Common Traffic Advisory Frequency (CTAF)

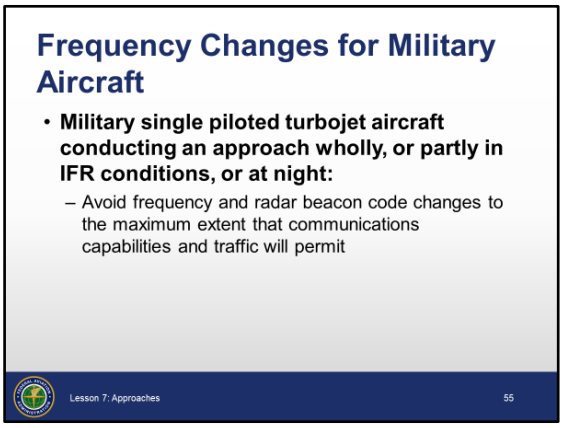
REPORT CANCELLATION OF I-F-R ON (frequency)

Or

(Call sign) REPORT CANCELLATION OF I-F-R THIS FREQUENCY OR WITH FLIGHT SERVICE

Frequency Changes for Military Aircraft

JO 7110.65, par. 4-7-4

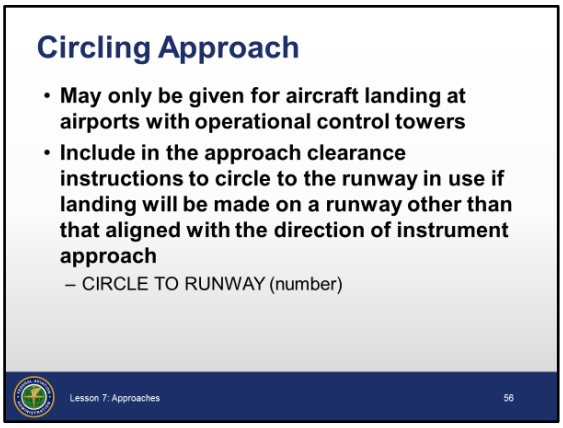


Frequency Changes for Military Aircraft

- Military single piloted turbojet aircraft conducting an approach wholly, or partly in IFR conditions, or at night:
  - Avoid frequency and radar beacon code changes to the maximum extent that communications capabilities and traffic will permit. However, when changes are required:
    - Give instructions early enough to allow the change before the aircraft reaches the approach fix or handoff point
    - Keep frequency/beacon code changes to a minimum below 2,500' AGL
    - Avoid requiring frequency/beacon code changes during a turn

Circling Approach

JO 7110.65, par. 4-8-6



Circling Approach

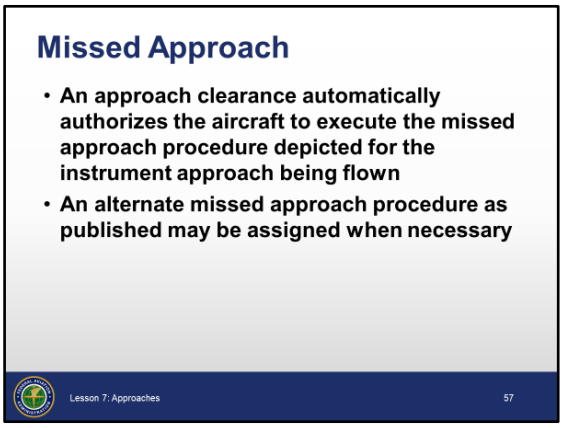
- May only be given for aircraft landing at airports with operational control towers
- Include in the approach clearance instructions to circle to the runway in use if landing will be made on a runway other than that aligned with the direction of instrument approach

CIRCLE TO RUNWAY (number)

NOTE: Where Standard Instrument Approach Procedures (SIAPs) authorize circling approaches, they provide a basic minimum of 300' of obstacle clearance at the MDA within the circling area considered.

Missed Approach

JO 7110.65, par. 4-8-9



Missed Approach

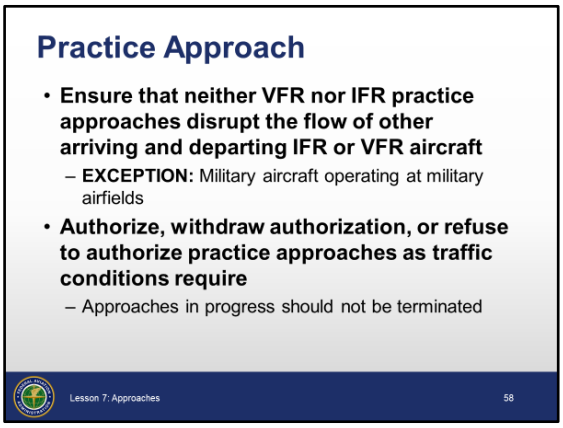
- An approach clearance automatically authorizes the aircraft to execute the missed approach procedure depicted for the instrument approach being flown
- An alternate missed approach procedure as published may be assigned when necessary

An alternate missed approach procedure is published on an appropriate FAA Form 8260 or appropriate military form. If assigned, this procedure will need to be described to the pilot.

- Once an aircraft commences a missed approach, it may be radar vectored if:
  - At or above the MVA/MIA
  - Radar-identified
- VFR aircraft are not automatically authorized to execute the missed approach procedure
  - This authorization must be specifically requested by the pilot and approved by the controller
- There is no missed approach procedure for IFR aircraft executing a visual approach

Practice Approach

JO 7110.65, par. 4-8-11



Practice Approach

- Ensure that neither VFR nor IFR practice approaches disrupt the flow of other arriving and departing IFR or VFR aircraft
  - **Exception:** Military aircraft operating at military airfields
- Authorize, withdraw authorization, or refuse to authorize practice approaches as traffic conditions require
  - Approaches in progress should not be terminated

Practice Approach Separation

JO 7110.65, par. 4-8-11

Practice Approach Separation

- ⊙ Apply approved IFR separation minima to:
  - IFR aircraft practicing instrument approaches until
    - The aircraft lands and flight is terminated, or
    - Pilot cancels flight plan
- ⊙ VFR
  - Approaches where procedures require application of IFR separation
    - Apply 500' vertical separation between two VFR aircraft and between a VFR and an IFR aircraft
      - **Exception:** Heavy and super aircraft
  - Controller responsibility for separation begins at the point where approach clearance becomes effective
  - Where separation services are not provided to VFR aircraft practicing instrument approaches:
    - Instruct pilot to maintain VFR
    - Advise pilot that separation services are not provided
  - Instruct all VFR aircraft to maintain VFR on initial contact or as soon as possible thereafter

(Aircraft identification) MAINTAIN VFR, PRACTICE APPROACH APPROVED, NO SEPARATION SERVICES PROVIDED

- ⊙ Provide traffic information or advise pilot to contact appropriate facility
- ⊙ Altitude assigned (including At or Above/Below altitudes) must meet MVA, Minimum Safe Altitude (MSA), or Minimum IFR Altitude (MIA) criteria

Practice Approach: Missed Approach

JO 7110.65, par. 4-8-11

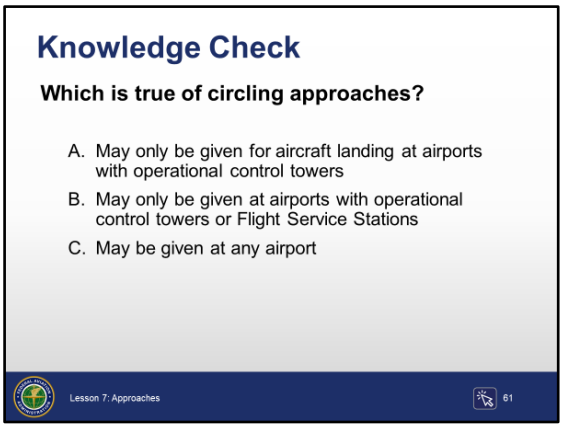
Practice Approach: Missed Approach

- IFR aircraft are automatically authorized to execute missed approach depicted for instrument approach being shown
  - Unless alternative instructions have been issued
- VFR aircraft are NOT automatically authorized to execute missed approach procedure
  - Authorization must be requested by the pilot and approved by the controller
  - When a controller approves a missed approach, where procedures require, controllers shall provide separation throughout the procedure including missed approach

Inform the students of any VFR practice approach separation requirements for your facility.

APPROACH PROCEDURES *(CONT'D)*

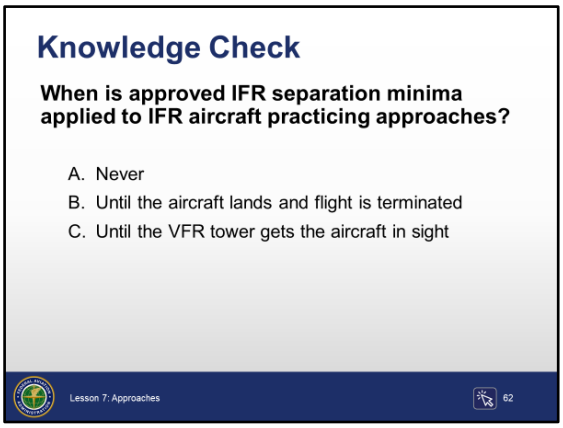
Knowledge Check



QUESTION: Which is true of circling approaches?

Answer: *A. May only be given for aircraft landing at airports with operational control towers*

Knowledge Check

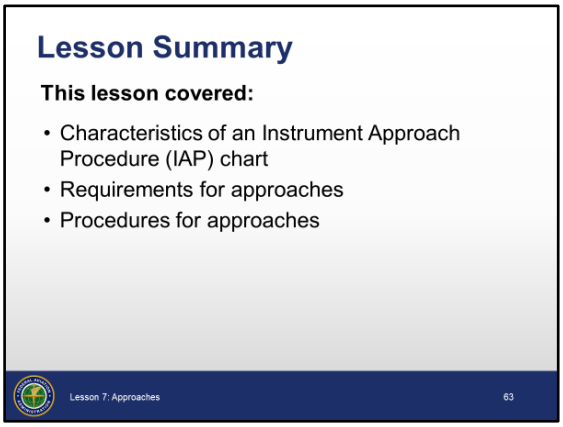


QUESTION: When is approved IFR separation minima applied to IFR aircraft practicing approaches?

Answer: *B. Until the aircraft lands and flight is terminated*

CONCLUSION

Lesson Summary



Review and elaborate briefly on the following topics. Ask students if they have questions about any of the concepts covered in the lesson.

Summary

- Characteristics of the IAP chart
  - Definitions
    - Instrument Approach Procedure (IAP)
    - U.S. Civil Standard Instrument Approach Procedure
    - U.S. Military Standard Instrument Approach Procedure
    - Special instrument approach procedure
    - Precision approach procedure
    - Nonprecision approach procedure
    - Approach with Vertical Guidance (APV)
  - Margin information
  - Pilot briefing information
  - Planview
  - Minimum Safe Altitude (MSA)
  - Terminal Arrival Area (TAA)
  - Airport sketch box
  - Missed approach icons and textual description
  - Profile box

Continued on next page

CONCLUSION *(CONT'D)*

Lesson Summary (Cont'd)

- Landing minimums
- Precision minimums section
- Nonprecision minimums section

⊙ Requirements for approaches

- Approach clearance
- Pilot's choice of approach
- Phraseology for various types of approaches
- Communications release
- Aircraft on an unpublished route
- GPS testing and anomalies
- Altitude assignment

⊙ Procedures for approaches

- Approach information
- Pilot unfamiliar with approach
- Contact approach
- Visual approach
- Timed approaches
- Cancellation of IFR flight plan
- Frequency changes for military aircraft
- Circling approach
- Missed approach
- Practice approach

 *Hand out and administer the End-of-Lesson Test. Provide feedback on missed items, including why particular answers are correct, as well as why some responses are incorrect.*