



Approaches

NEXT



The approach to an airport is often the most critical phase of the flight.

LEARN MORE

The controller not only keeps the terminal area safe, but provides the pilot with crucial information needed to execute the approach safely.

Traffic congestion alone heightens the importance of every clearance. Pilot requests become more frequent during the approach segment of flight.



Purpose

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This lesson will provide an overview of the Instrument Approach Procedures (IAPs), identify the types of approaches available to pilots and the charts used to depict these approaches.



Objectives

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In this lesson, you will identify types of approaches.

You will also identify the purpose, contents, geographical features and other specific items and information of an IAP Chart.

You will meet the objectives in accordance with the following references:

- FAA Order JO 7110.65, Air Traffic Control
- Aeronautical Information Manual (AIM)
- FAA-H-8083-15, Instrument Flying Handbook
- U.S. Terminal Procedures Publication





General Disclaimers

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All graphics in this lesson are for illustration/training purposes only and may not reflect current procedures.





Instrument Approach Procedure (IAP)

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An Instrument Approach Procedure (IAP) is 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. IAPs are designed to:

- Provide an IFR descent from an En Route environment to a point where a safe landing can be made.
- Guide aircraft through clouds (IFR conditions) to a point where the runway environment can be seen.
 - The more accurate the Navigational Aids (NAVAIDs) comprising the IAP, the lower the aircraft can descend in IFR conditions.

Although IAPs are designed for use in IFR conditions, they may also be executed in Visual Flight Rule (VFR) conditions.

JO 7110.65, Glossary; AIM Chap. 5



Instrument Approach Procedure (IAP)

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U.S. Terminal Procedures Publication
Southwest (SW) Vol 1 of 4

Effective: 0901Z
13 JAN 2011
to: 0901Z
10 MAR 2011

Consult the Change Notice (CN) effective 10 FEB 2011 for revised Instrument Procedure Charts for this volume

COLORADO
NEW MEXICO

Consult NOTAMS for latest information
Published in accordance with Interagency Air Cartographic Committee specifications and agreements approved by:
Department of Defense • Federal Aviation Administration

[LEARN MORE](#)

DENVER, COLORADO ALP077 (FAA)

LOC/DME 111.9 170° Rwy Hgt 18000 TOZE 5323 5431
Chan 56 Rpt Elev 5431

ILS or LOC RWY 16R
DENVER INTL (DEN)

MAISR MISSED APPROACH: Climb to 5900, then climbing right turn to 13000 via 2207 heading and RQR VORTAC R254 to BREWS INT/RQR 26 DME and hold.

Simultaneous approaches authorized with Rwy 17L and 17R. SUDOC means not authorized during simultaneous operations.

ATIS 125.6 378.9	DENVER APP CON 119.3 307.3 (NORTH)	DENVER TOWER 120.35 378.3 (SOUTH)	DENVER TOWER 135.3 351.95	GRD CON 127.5 378.175	CINC DEL 116.75
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RADAR REQUIRED

RELEV 5431 TOZE 5323

CATEGORY A	B	C	D
5431 16R	5523/18 200 (100-1)	5680/40	5680/40
540C 16R	5680/24 357 (300-1)	5680/40	5680/40
CIRcling	NA	NA	NA

DENVER, COLORADO Orig# 11125 39°52'N-104°40'W

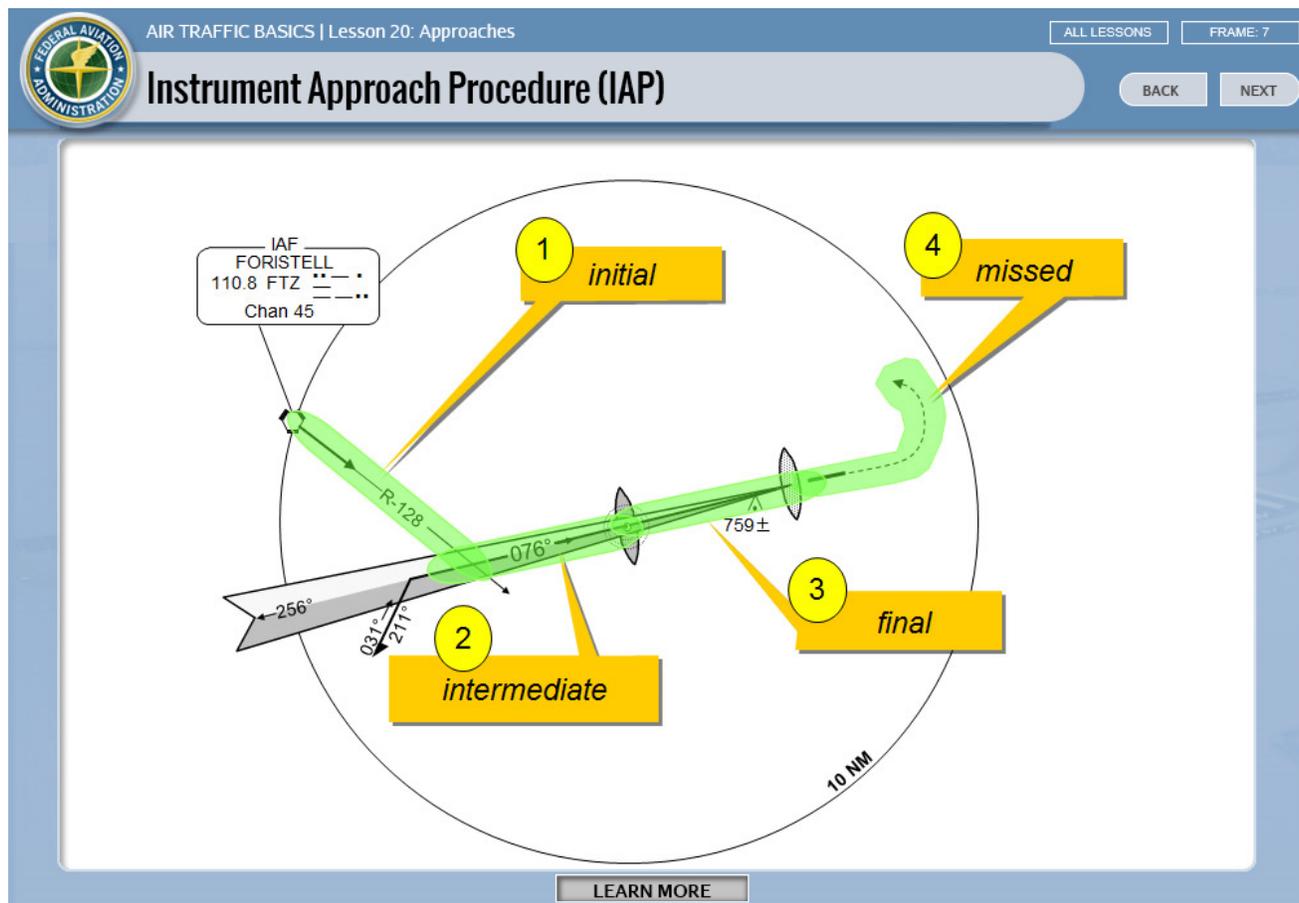
ILS or LOC RWY 16R
DENVER INTL (DEN)

REV 17 NOV 2011 to 15 DEC 2011

IAPs, both civil and military, are described in IAP charts located in U.S. Terminal Procedures volumes.

NOTE: The effective date of the charts shown in the graphics in this lesson may be different than the effective date of the charts used in class.

Reference: AIM, Chap. 5



Four Segments of an Instrument Approach

The four segments of an Instrument Approach are:

- Initial Approach
- Intermediate Approach
- Final Approach
- Missed Approach

The INITIAL APPROACH SEGMENT transitions an aircraft from the en route portion of the flight to the approach phase.

- Places the aircraft in a position to navigate toward the primary NAVAID or Final Approach Fix (FAF) used for the approach
- Varies from approach to approach
- Can include radials, headings, radar vectors, procedure turns, or Distance Measuring Equipment (DME) arcs
- Ends upon interception of the inbound approach course

Reference: Aviator's Guide to Navigation, Chap. 8



Instrument Approach Procedure (IAP)

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Four Segments of an Instrument Approach

The **INTERMEDIATE APPROACH SEGMENT** is that portion of the approach where the aircraft is maneuvering towards the primary NAVAID from which the approach is conducted.

- Takes the aircraft to the NAVAID or final approach fix used for the approach
- May consist of an extended portion of the final approach course prior to reaching the final approach fix

The **FINAL APPROACH SEGMENT** is the part of the approach where the aircraft is navigating from the final approach fix to the airport.

- Begins at the final approach fix
- Ends at a point from which a safe landing can be made, or at the beginning of a missed approach procedure

The **MISSED APPROACH SEGMENT** is the portion of the approach where the pilot can begin a missed approach procedure (a missed approach procedure is used when the pilot is unable to establish visual contact with the airport or runway at the end of the approach procedure).

- Consists of a climb to a safe altitude, and usually a turn or a heading to a point where the aircraft will enter holding
- Established for every instrument approach
- Positively identifies the exact point when the final approach must be abandoned and the missed approach procedure initiated

Aviator's Guide to Navigation, Chap. 8



Types of Instrument Approach Procedures (IAPs)

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General Information

There are several types of IAPs.

- Each is designed for use with a specific type of navigational system and named after the NAVAID they use and, in most cases, the primary runway they serve.

The types of approaches available at a specific airport are dependent on the size and complexity of the airport.

- A large airport serving thousands of flights each day will have many types of IAPs.
- A small airport may have only one.

NOTE: ATC specialists are responsible for knowing the approaches in his/her area in great detail. They should also know where to look to find approach information for other airports.

JO 7110.65, Glossary





Types of Instrument Approach Procedures (IAPs)

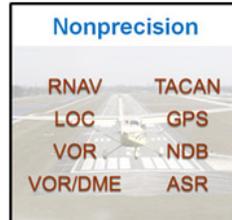
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Approach Categories

IAPs are classified as either precision or nonprecision.

- Precision approaches utilize both lateral and vertical guidance.
- Nonprecision approaches utilize lateral course information only.



Precision approaches include:

- Instrument Landing System (ILS)
- Precision Approach Radar (PAR)

NOTE: Each approach will be discussed in more detail in the next section.

AIM, Chap. 5 JO 7110.65, Glossary

Nonprecision approaches include:

- Area Navigation (RNAV [GPS])
- Localizer (LOC)
- Very High Frequency Omni-directional Range (VOR)
- Very High Frequency Omni-directional Range/Distance Measuring Equipment (VOR/DME)
- Tactical Air Navigation (TACAN)
- Global Positioning System (GPS)
- Non-Directional Radio Beacon (NDB)
- Airport Surveillance Radar (ASR)



Types of Instrument Approach Procedures (IAPs)

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Precision Approaches Instrument Landing System (ILS)

ILS is the approach of choice when the ceilings and visibility are very low.

Basic components:

- Localizer
 - Provides horizontal guidance
- Glide slope
 - Provides vertical guidance
- Marker beacons (outer and middle)
 - Provide range guidance
- Visual Information
 - Provide transition from instrument flight to visual flight

Optional components:

- Inner marker beacons
 - Provide range guidance
- Compass locators
 - Provide transition from en route NAVAIDs to ILS

If the glide slope component of an ILS approach is inoperative, the remainder of the procedure is classified as a Localizer approach.

- An ILS approach is not usable if the localizer is out of service.



Types of Instrument Approach Procedures (IAPs)

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Precision Approaches – Precision Approach Radar (PAR)

Precision Approach Radar (PAR) is a radar-guided approach procedure.

- It does not provide instrument indications to the pilot; therefore, the pilot must listen and comply with controller instructions.

PAR provides both vertical and lateral guidance as well as range, much like an ILS, making it the most precise radar approach available.

- Controller provides guidance to pilot by radar vectors to the runway
- Controller informs the pilot when on course and on glidepath, or anytime a deviation occurs
- Transmissions are made at least every 5 seconds on final

PAR approaches are rare with the FAA, but are used in a military setting.

Instrument Procedures Handbook





Types of Instrument Approach Procedures (IAPs)

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Non Precision Approaches

RNAV (GPS) Approach

- Classified as nonprecision approach due to International Civil Aviation Organization (ICAO) standards
- RNAV (GPS) may provide vertical guidance, including glidepath.
- Many RNAV (GPS) approaches do provide glidepath guidance, depending on WAAS/LAAS coverage. Currently, the accuracy and reliability do not meet ICAO standard for a precision approach.
 - Wide Area Augmentation System (WAAS)
 - Local Area Augmentation System (LAAS)

LOC Approach

- Uses the localizer component of the ILS
 - May be present when no glide slope is installed
 - Less precise than the ILS approach because no vertical guidance is provided
 - More accurate course guidance than other nonprecision approaches

VOR Approach

- Provides a radial to be intercepted and tracked, which leads to the airport
- Very common type of approach
- The VOR itself need not be located at the airport.

VOR/DME Approach

- More accurate than the VOR approach because of the range/distance guidance provided by the DME
- Usually allows for lower minimum altitudes using step-down fixes along the final approach course



Types of Instrument Approach Procedures (IAPs)

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Non Precision Approaches

TACAN Approach

- Provides azimuth and distance information, similar to VOR/DME approach
- Used only for military function

NOTE: Most military aircraft can use other NAVAIDs.

NOTE: As a controller, if the pilot requests any of the above mentioned approaches, it can be assumed that they are equipped.

GPS Approach

- Provides approaches to airports that may not have any other IAPs
- May overlay an already existing approach procedure or may be a stand-alone procedure
 - Most GPS approaches have been converted to stand-alone.

NDB Approach

- Less accurate than a VOR approach
- Adversely affected by lightning and precipitation
- Provides a non-directional bearing that a pilot uses to fly a course to the airport

ASR Approach

- Controller provides course guidance to the pilot in relation to the final approach course (azimuth) and the distance (range) from the end of the runway.
- Recommended altitudes may be provided at pilot's request.
- Controller informs the pilot when on course, and of any observed deviations from course.
- Transmissions are made at least every 15 seconds on final.
- Similar to the PAR approach, but with no electronic altitude guidance.

NOTE: Airports with published PAR and ASR approaches are listed in the "radar minimums" section of the U.S. Terminal Procedures Publications.

FEDERAL AVIATION ADMINISTRATION AIR TRAFFIC BASICS | Lesson 20: Approaches

ALL LESSONS FRAME: 15

Types of Instrument Approach Procedures (IAPs)

BACK NEXT

No – Gyro Approach



LEARN MORE

Controller guided radar approach that is used with a loss of Heading Indicator (Directional Gyro) or other stabilized compass

- May or may not constitute an emergency situation

Can also be used as a controller guided intercept of the final approach course for Instrument approach procedures

Controller times the aircraft's turns based on a standard rate turn of three degrees per second ($3^\circ/\text{sec}$)

Example:

A 90° turn will take approximately 30 seconds at a standard rate of turn. The phraseology for this would sound like:

“N12345 turn right” (time elapse of 30 seconds) “N12345 stop turn”

Reference: AIM, Chap. 5



IAP Charts

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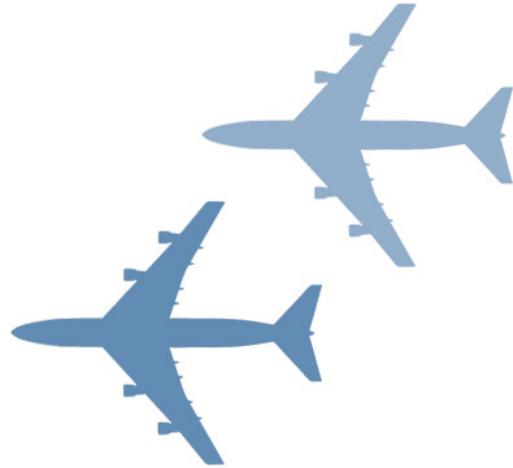
NEXT

Purpose

The purpose of an IAP chart is to portray the aeronautical data which is required to execute IAPs to airports.

NOTE: IAP charts are commonly referred to as "Approach Plates."

FAA-H-8083-15, Chap. 8





IAP Charts

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Layout

- All IAPs except the PAR and ASR (radar approaches) are depicted using the same general format.
- Symbols used on the IAP can be found, with accompanying explanations, in the Legend.
- Like Standard Instrument Departures (SIDs) and Standard Terminal Arrival Routes (STARs), IAPs are listed alphabetically in the U.S. Terminal Procedures Volumes, first under "city," then under "airport."

The seven sections of the IAP are:

- Margin Information
- Pilot Briefing Information
- Planview
- Airport Diagram
- Missed Approach Icons
- Profile View
- Minimums Section

Aeronautical Chart User's Guide, Section 3; FAA-H-8083-15, Chap. 8; AIM, Chap. 5





IAP Charts

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Instrument Approach Chart

Each section of the IAP chart has information needed for the approach.

FAA-H-8083-15, Chap. 8

Margin information

Pilot briefing information

Planview

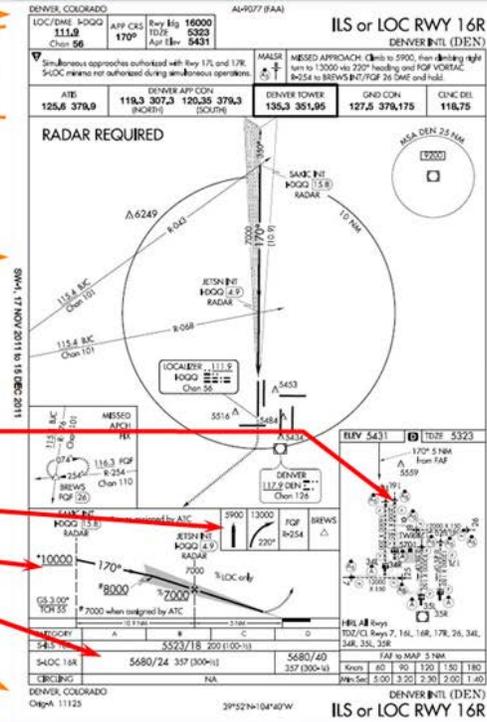
Airport Diagram

Missed approach icons

Profile View

Minimums

Margin information



Margin Information

TOP MARGIN

City and state: FARMINGTON, NEW MEXICO

Reference number and approving authority: AL-493 (FAA)

Procedure name: ILS or LOC RWY 25

Airport name: FARMINGTON/ FOUR CORNERS RGNL (F'MN)

Airport identifier: FARMINGTON, NEW MEXICO

BOTTOM MARGIN

City and state: FARMINGTON, NEW MEXICO

Procedure version: Amdt 7D 10FEB11

Airport coordinates: 36°44'N-108°14'W

Procedure name: ILS or LOC RWY 25

LEARN MORE

The city, state, airport name, and procedure name are identified in several ways in the top and bottom margins.

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.

Example:

An approach labeled VOR/DME Rwy 26 requires the aircraft to have operative DME receivers and the ground DME equipment must be operational.

NOTE: The side margin information for the approach plates are the same as they are for the SIDs and STARs.

References:

- Aeronautical Chart User’s Guide, Section 3
- FAA-H-8083-15, Chap. 8
- AIM Chap. 5



IAP Charts

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Approach Name

The name of the approach, as published, is used to identify the approach, even though a component of the approach is inoperative.

Examples: "Cleared ILS Runway 9, glide slope unusable"

Letters from the end of the alphabet, appearing in the approach name, denote approaches to the same runway using the same approach aid.

Examples: RNAV (GPS) Z Runway 4 or RNAV (GPS) Y Runway 4

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

Examples: VOR-A, GPS-B

JO 7110.65, Chap. 4



The screenshot shows the 'IAP Charts' interface with a 'Pilot Briefing Information' section. The data is organized into three horizontal rows of boxes. Callouts point to specific elements: 'Localizer information' (111.9), 'Approach course' (256°), 'Available landing distance' (6277), 'Runway environment elevations' (5506), 'Notes and limitations' (5506), and 'Full text description of missed approach' (MISSED APPROACH: Climb to 6100 then climbing right turn to 9000 via heading 321° and RSK R-280 to FLUME INT and hold.). A yellow oval highlights the bottom row of frequencies, with a callout stating 'Frequencies listed in normal order of use'. A 'LEARN MORE' button is at the bottom.

LOC/DME I-FMN 111.9 Chan 56	APP CRS 256°	Rwy Ida 6277 TDZE 5506 Apt Elev 5506	MISSED APPROACH: Climb to 6100 then climbing right turn to 9000 via heading 321° and RSK R-280 to FLUME INT and hold.	
ATIS 127.15	DENVER CENTER 118.575 348.7	FARMINGTON TOWER* 118.9 (CTAF) 257.8	GND CON 121.7	UNICOM 122.95

Consists of three horizontal rows of boxes that contain information specific to the approach procedure on the chart.

Provides a quick reference of vital approach data for the pilot.

Top row contains primary navigation information:

- Primary navigation aid and frequency
- Final approach course information
- Available landing distance
- Touchdown zone and airport elevations

Middle row contains:

- Procedure notes and limitations
- Icons indicating any nonstandard alternate and/or takeoff minimums
- Full text description of the missed approach procedure

Bottom row lists pertinent frequencies in the order of their anticipated use:

- If a Tower is located at the airport, that frequency box is bolded.

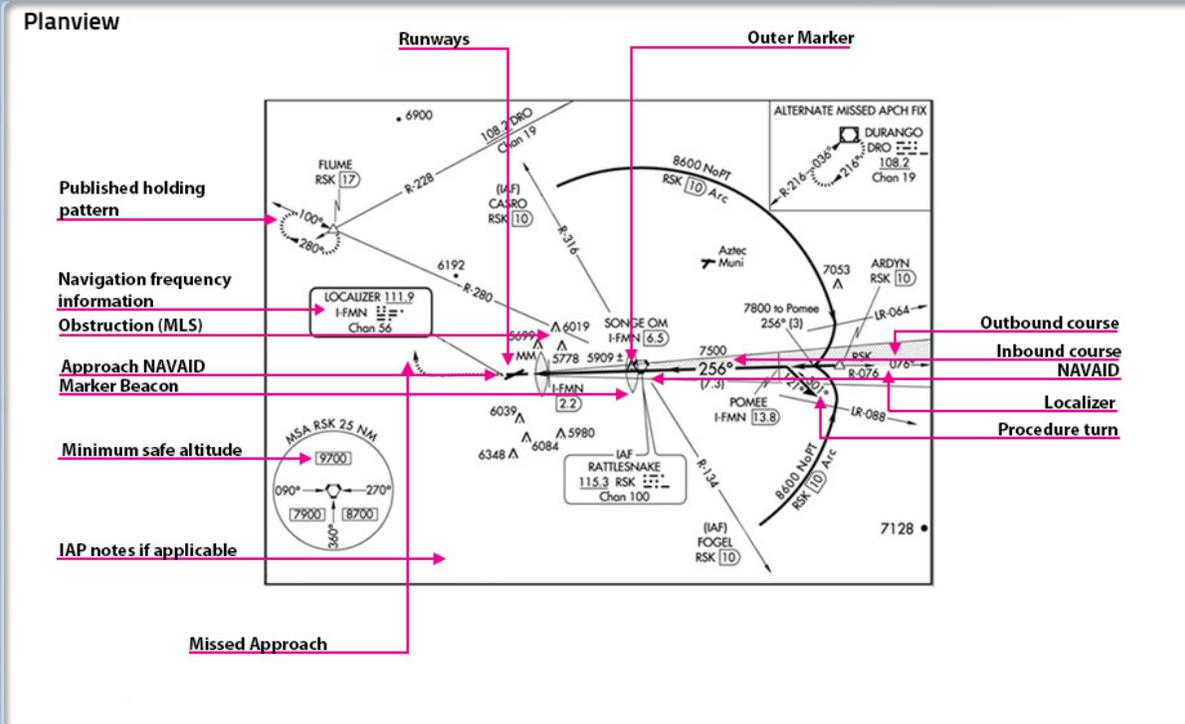
Reference: Aeronautical Chart User’s Guide, Section 3



IAP Charts

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LEARN MORE

The Planview is a bird's-eye view of the entire IAP. The symbology is located in the legend, Section G. All items depicted are to scale unless one of the following charting devices are utilized:

- Concentric rings
- Scale breaks
- Inset boxes

The Planview depicts the following items:

- Distance circle:
 - Usually 10-NM radius centered on the FAF
 - Intended only to provide a sense of distance and scale
 - Not depicted on all SIAP charts
- Minimum Safe Altitudes (MSAs) or Terminal Arrival Areas (TAAs)
- Geographical landmarks (such as rivers and lakes)
- Obstructions (height always given in MSL)

References:

- FAA-H-8083-15, Chap 8
- AIM Chap. 5, Glossary



IAP Charts

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Planview

- NAVAIDs
- Transition routes (may include a DME arc)
 - Altitude
 - Mileage information
- Approach NAVAID
- Navigation frequency information
- Localizer course
- Outbound course
- Procedure turn

NOTE: A procedure turn is a maneuver prescribed when it is necessary to reverse direction to establish an aircraft on the intermediate approach segment or final approach course.

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

FAA-H-8083-15, Chap. 8; AIM, Chap. 5, Glossary



IAP Charts

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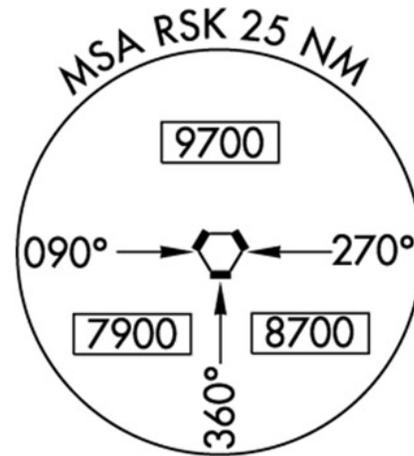
NEXT

Minimum Altitudes for Use in an Emergency

Minimum Safe Altitude (MSA):

- An emergency altitude to be used within 25 NM of the NAVAID upon which the approach is predicated
- Ensures 1,000 feet of obstruction clearance, but does not ensure NAVAID frequency reception

FAA-H-8083-15, Chap. 8 AIM, Chap. 5, Glossary





IAP Charts

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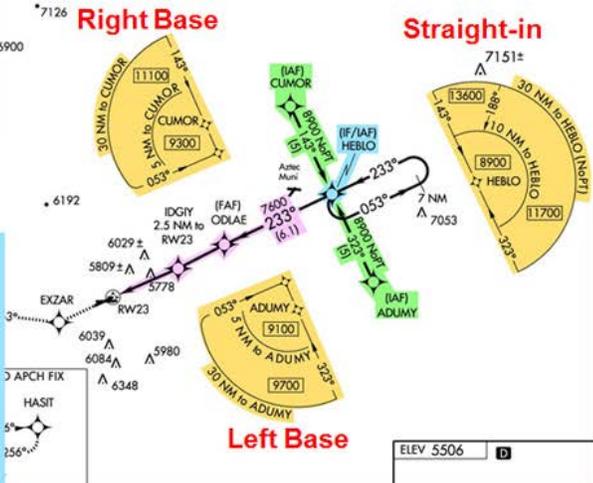
Terminal Arrival Area (TAA)

FARMINGTON, NEW MEXICO		AL-493 (FAA)	
WAAS CH 70714 W23A	APP CRS 233°	Rwy Idg TDZE 6375 5504 5506	RNAV (C) FARMINGTON/FOUR CO
For uncompensated Baro-VNAV systems, LNAV/VNAV NA below -26°C (-14°F) or above 38°C (100°F). Circling NA. Cat D southeast of Rwy 5 and 25. WE/DME RNP-0.3 NA. Visibility reduction by helicopters NA.			MISSED APPROACH. Climb and via track 263° to HASI
DTIS 7-15	DENVER CENTER 118.575 348.7	FARMINGTON TOWER* 118.9 (CTAF) 257.8	GND CON 121.7
		UNICOM 122.95	

TAA's do not describe specific routes of flight, but rather describe a volume of airspace within which an aircraft proceeds inbound from the 30 NM arc boundary toward an appropriate IAF.

The Basic T design ideally aligns the procedure with runway centerline, with the MAP located at the threshold, the FAF 5 NM from the threshold, and the intermediate fix (IF) 5 NM from the FAF.

Normally, the IF also is designated an IAF for straight-in (NoPT) procedures. If a straight-in procedure cannot be used due to terrain or airspace considerations, the IF will not be designated an IAF. If circumstances require a course reversal, a holding pattern is established at the IF/IAF.



The Basic T usually incorporates 2 IAFs located 3 to 6 NM on either side of the final IF/IAF, approximately 90° to the final approach course. The leg length or angle of the turn to the intermediate segment may be modified when required by obstructions or airspace.

LEARN MORE

Terminal Arrival Area (TAA):

- For use by aircraft equipped with advanced navigation such as a Flight Management System or Global Positioning System
- Found on some RNAV approach charts
- Replaces the MSA and provides minimum altitudes with standard obstacle clearance depending upon the direction from which the aircraft is arriving
- Based on a 30-mile radius of the Initial Approach Fix (IAF)

References:

- FAA-H-8083-15, Chap. 8
- AIM, Chap. 5, Glossary



IAP Charts

AIR TRAFFIC BASICS | Lesson 20: Approaches

ALL LESSONS FRAME: 26

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Airport Diagram

Airport elevation →

Touchdown zone elevation →

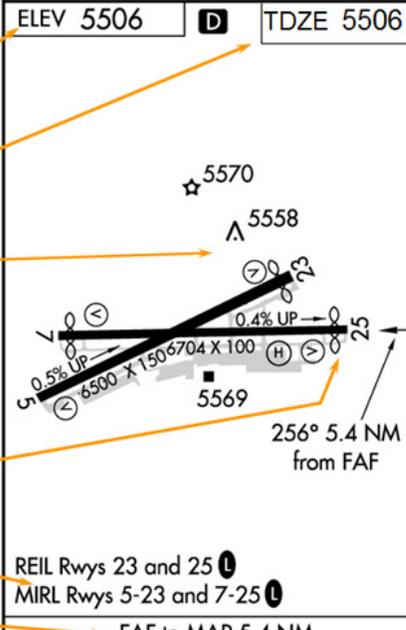
Obstructions →

Displaced threshold →

Runway lighting aids available →

FAF distance →

Time/speed table →

ELEV 5506	D		TDZE 5506
			
REIL Rwy 23 and 25 (L) MIRL Rwy 5-23 and 7-25 (L)			
FAF to MAP 5.4 NM			
Knots	60	90	120
Min:Sec	5:24	3:36	2:42
	150	180	1:48

LEARN MORE

The Airport Diagram 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 on the Airport Diagram:

- Airport elevation
- Obstructions in MSL
- Touchdown zone elevation
- Displaced threshold
- Runway lighting aids available
- Distance from FAF to MAP
- Table showing time/speed from FAF to MAP

Reference: FAA-H-8083-15, Chap. 8



IAP Charts

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Missed Approach Icons

Provides a visual depiction of the instructions for conducting the missed approach procedure:

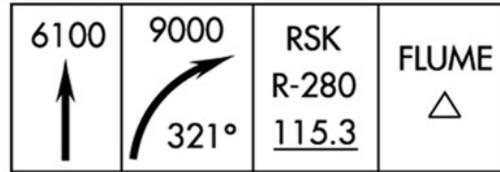
- Icons shown are in addition to the full text found in the pilot briefing information section.

Gives the pilot a quick reference of critical data

Provides 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

Aeronautical Chart User's Guide, Section 3



Climb straight ahead to 6100

Followed by a climbing right turn to 9000 via heading 321°

Then RSK R-280

Then FLUME INT



IAP Charts

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Terms

The Decision Altitude (DA) is the altitude at which a decision must be made during a precision approach to either continue the approach or execute a missed approach.

The Minimum Descent Altitude (MDA) is the lowest altitude to which descent is authorized on final approach where no electronic glide slope is provided (nonprecision approach).

NOTE: The pilot MUST have either the approach lights or the runway environment in sight before descending below a DA or an MDA.

AIM, Glossary; FAA-H-8083-15, Glossary





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Profile Views

The Profile View 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.

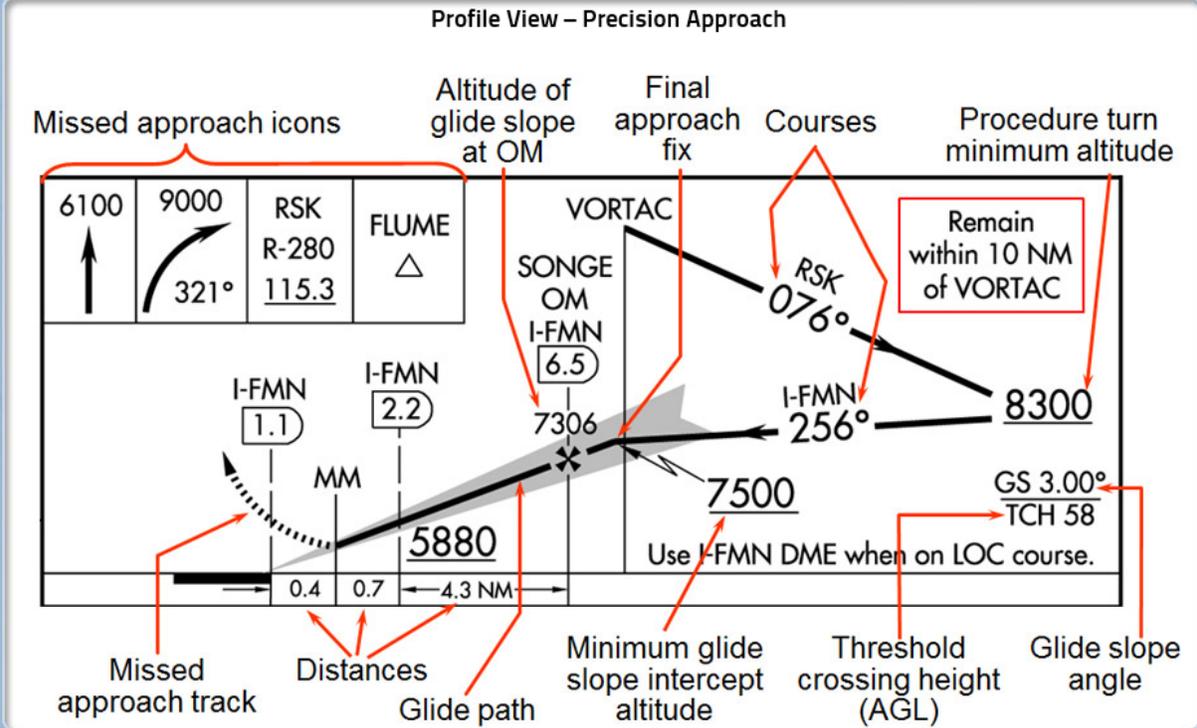




IAP Charts

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LEARN MORE

The Profile View of a Precision Approach contain the following items:

- Courses of the IAP to be flown
- Maximum distance of procedure turn
- Minimum altitudes
 - Procedure turn altitude
 - Glide slope intercept altitude

Reference: FAA-H-8083-15, Chap. 8



IAP Charts

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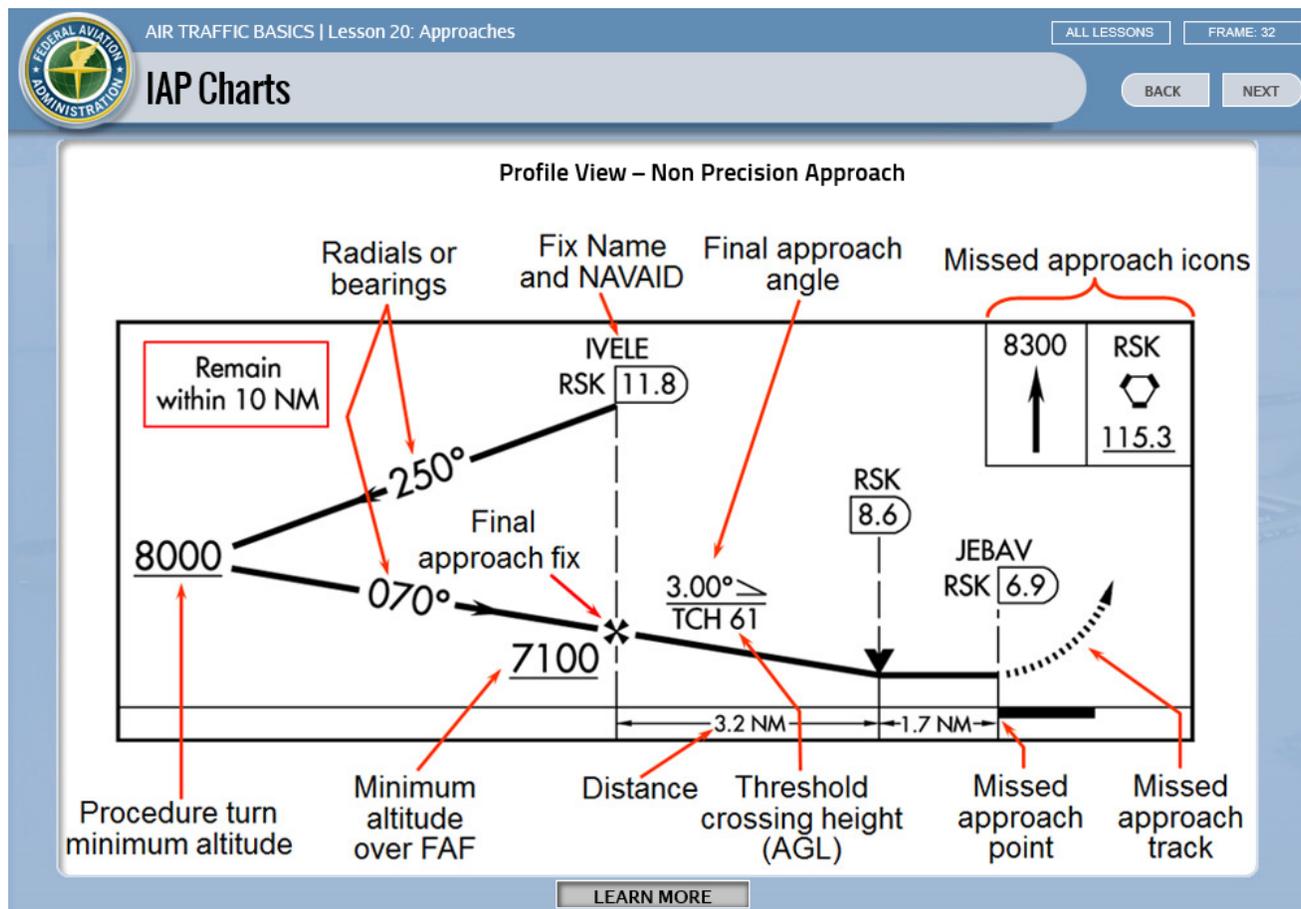
NEXT

Profile View – Precision Approach

- Altitude of the glide slope at the LOM
- Final Approach Fix (FAF)
 - Depicted by a Lightning Bolt () when flown as a full ILS approach with glide slope
 - Depicted by a Maltese Cross () when flown as a localizer approach (when the glide slope is inoperative)
- Glide slope descent angle in degrees
- Threshold Crossing Height (TCH) in feet AGL
- Glide path
- Distance from:
 - Runway threshold to the middle marker
 - Middle marker to locator outer marker
- Middle marker
- Missed approach information
 - Missed approach icons
 - Missed approach track shown as a dashed line.
 - Missed Approach Point (MAP) for an ILS approach is at the Decision Altitude (DA)

FAA-H-8083-15, Chap. 8





The Profile View of a Nonprecision Approach contain the following items:

- NAVAID used to conduct the approach
- Radials or bearings of the IAP to be flown
- Maximum distance of procedure turn from the NAVAID
- Minimum altitudes
 - Procedure turn altitude
 - Minimum altitude over FAF
- Final Approach Fix (FAF)
 - Depicted by a Maltese Cross (☒)



IAP Charts

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View – Non Precision Approach

- Final approach angle in degrees (used for programming vertical navigation guidance into onboard flight computers)
- Threshold crossing height (TCH) in feet AGL
- Distance from runway threshold to the FAF
- Missed approach information:
 - Missed Approach Point (MAP) is timed from the FAF using the Time/Speed Table in the Airport Diagram.
 - Missed approach icons
 - Missed approach track shown as a dashed line

FAA-H-8083-15, Chap. 8; AIM, Glossary





IAP Charts

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Minimums Section

The Minimums Section describes:

- The lowest altitude the approaching aircraft may descend to 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.
 - Runway Visual Range (RVR) is an instrumentally derived measurement of horizontal visibility down the runway (from the approach end) in hundreds of feet.

RVR	Visibility (statute miles)
1600 feet	¼ mile
2400 feet	½ mile
3200 feet	5/8 mile
4000 feet	¾ mile
4500 feet	7/8 mile
5000 feet	1 mile
6000 feet	1 ¼ miles

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.

- Controllers are not responsible for determining whether landing minimums do or do not exist.

FAA-H-8083-15, Chap. 8 & 10



IAP Charts

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Minimums Section Contents

CATEGORY	A	B	C	D
S-ILS 25	5706- ³ / ₄ 200 (200- ³ / ₄)			
S-LOC 25	5880-1 374 (400-1)			5880-1 ¹ / ₄ 374 (400-1 ¹ / ₄)
CIRCLING	6000-1 494 (500-1)	6120-1 614 (700-1)	6160-1 ³ / ₄ 654 (700-1 ³ / ₄)	6160-2 654 (700-2)
DME MINIMUMS				
S-LOC 25	5780-1 274 (300-1)			
CIRCLING	6000-1 494 (500-1)	6120-1 614 (700-1)	6160-1 ³ / ₄ 654 (700-1 ³ / ₄)	6160-2 654 (700-2)
	Minimum Descent Altitude (MDA)	Height of MDA Above Touchdown zone (HAT)	Height of MDA Above Airport (HAA)	Military minimums

LEARN MORE

The following items are contained in the Minimums Section:

- Aircraft approach categories
 - Determined according to weight and landing speed
- Variations of the approach procedure:
 - Straight-in - to the aligned runway
 - Localizer - when the glide slope component is inoperative
 - ♦ This is a nonprecision approach.
 - Circling - when aircraft must circle to another runway because of wind direction and/or velocity, or runway restrictions



IAP Charts

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Minimums Section Contents

- Decision Altitude (DA)
 - Used for precision approach only (MSL)
- Visibility
 - May be RVR or statute miles
- Height Above Touchdown Zone (HAT) (DA listed in AGL)
 - Used for straight-in approach only because the landing runway is known and glide slope is operational
- Minimum Descent Altitude (MDA)
 - Used for nonprecision approach
- Height Above Touchdown Zone (HAT) (MDA listed in AGL)
 - Used for Localizer approach because runway is known, but glide slope is inoperative
- Height Above Airport (HAA) (MDA listed in AGL)
 - Used for circling version because runway is not known
 - MDA for the circling version of the approach is the highest of all the minimum altitudes
- Military minimums

FAA-H-8083-15, Chap. 8, JO 7110.65, Glossary





IAP Charts

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RNAV/GPS MINIMUMS

CATEGORY	A	B	C	D
GLS PA DA	NA			
LPV DA	5750-1 252 (300-1)			
LNAV/VNAV DA	5920-1½ 422 (500-1½)			
LNAV MDA	6100-1 602 (600-1)		6100-1¾ 602 (600-1¾)	6160-2 654 (600-2)
CIRCLING	6100-1½ 594 (600-1½)	6120-1½ 614 (700-1½)	6160-1¾ 654 (700-1¾)	6160-2 654 (700-2)

RNAV/GPS Minimums

- Categories:
 - GLS: GBAS (Ground Based Augmentation System) Landing System
 - Requires LAAS. Currently not authorized in the US, shown on some charts
 - LPV: Localizer Performance with Vertical Guidance based on WAAS lateral and vertical guidance
 - Requires specific avionics
 - LNAV/VNAV: Lateral navigation/Vertical navigation
 - Requires specific avionics, not necessarily WAAS capability
 - LNAV: Lateral navigation:
 - Specific avionics required; no vertical guidance provided

FAA-H-8083-15, Chap. 8; JO 7110.65, Glossary

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Other Approaches

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“AIRPORT IN SIGHT.”

Visual Approach Definition

LEARN MORE

- To expedite traffic, ATC may clear IFR aircraft for other approaches in lieu of the previously mentioned IAPs.
- These approaches allow the flight to continue as an IFR flight, while increasing the efficiency of the arrival.
- In this section, we will briefly discuss the ‘other’ types of approaches.

A **Visual Approach** is conducted on an IFR flight plan. It authorizes the pilot to proceed visually and clear of clouds to the airport. The pilot must, at all times, have either the airport or the preceding aircraft in sight. This approach must be authorized and under the control of the appropriate air traffic control facility. Reported weather at the airport must be ceiling at or above 1,000 feet and visibility of 3 miles or greater.

Reference: AIM, Glossary, Chap. 5



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Other Approaches

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"AIRPORT IN SIGHT."

"TRAFFIC IN SIGHT."

LEARN MORE

Visual Approach with Traffic

May be initiated by controller or pilot when:

- Operationally beneficial to pilot or controller

A visual approach is **not** an instrument approach procedure and there is **no** missed approach procedure. An aircraft following another arriving aircraft may be cleared for visual approach.

If the pilot has the preceding aircraft in sight, he/she must maintain a safe landing interval. If the pilot does not see the preceding aircraft, the controller is responsible for ensuring that separation is maintained.

NOTE: *Once the pilot reports the preceding aircraft in sight, they assume responsibility for their own separation as well as wake turbulence avoidance.*

Reference: JO 7110.65, Chap. 7, Glossary



Other Approaches

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Contact Approach Definition

A Contact Approach is an approach wherein an aircraft on an IFR flight plan, having an air traffic control authorization, operating clear of clouds with at least 1 SM 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.

Conditions for issuing a contact approach:

- Must be requested by the pilot (cannot be initiated by ATC)
- Reported ground visibility must be at least 1 SM
- Airport has a standard or special approach procedure
- Pilot assumes responsibility for VFR traffic avoidance and obstruction clearance
 - Pilot may find it necessary to fly a circuitous route to the airport

AIM, Glossary, Chap. 5





Conclusion

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Lesson Summary



This lesson covered:

- Instrument Approach Procedures (IAPs)
- Types of IAPs
- IAP Charts
- Other Approaches

