

Area of Operation **VIII** - Task **E**

Landing from a Straight-in Approach

Content

1. Introduction
2. Visibility Requirements
3. Transition to Visual Flight



Key References:

- Instrument Flying Handbook
- Instrument Procedures Handbook
- AIM

1. Introduction

- **What:** Transition from an instrument approach to a visual approach for landing
- **Why:** There are small but important differences when landing from an instrument approach, particularly when transitioning from instruments to visual, versus the normal VFR landing out of a pattern
- **Before we start... a note about Visibility**
 - Must have the minimum visibility required on the IAP to land
 - Pilot is responsible for assessing/determining if visibility is sufficient
 - ✓ *Even if the reported visibility is above minimums, the pilot must go Missed if actual/assessed visibility is below*
 - Visibility reported by ATC:
 - ✓ Prevailing Visibility (miles)
Greatest horizontal visibility in a half-horizon
 - ✓ Runway Visual Range (RVR, feet)
Horizontal distance from the approach end of the runway



2. Visibility Requirements

- Published minimums are based on the operation of all associated components & visual aids
- Higher minimums are required with inoperative equipment (TPP)
- Conversion from RVR to Miles also available in the TPP

INOP COMPONENTS 19339

INOPERATIVE COMPONENTS OR VISUAL AIDS TABLE (For Civil Use Only)	
Straight-in and Sidestep landing minimums published on instrument approach procedure charts are based on full operation of all components and visual aids (see exception below for ALSF 1 & 2) associated with the particular approach chart being used. Higher minimums are required with inoperative components or visual aids as indicated below. If more than one component is inoperative, each minimum is raised to the highest minimum required by any single component that is inoperative. ILS glideslope inoperative minimums are published on the instrument approach charts as localizer minimums. This table applies to approach categories A thru D and is to be used unless amended by notes on the approach chart. Such notes apply only to the particular approach category(ies) as stated. Category E (inoperative notes will be specified when published on civil charts). The inoperative table does not apply to Circling minimums. See legend page for description of components indicated below.	
Full Operation Exception: For ALSF 1 & 2 operated as SSALR, or when the sequenced flashing lights are inoperative, there is no effect on visibility for ILS lines of minima.	
(1) ILS, PAR, LPV, GLS minima	
Inoperative Component or Visual Aid	Increase Visibility
All ALS types (except ODALS)	¼ mile
(2) ILS, LPV, GLS with visibility minima of RVR 1800†/2000*/2200*	
Inoperative Component or Visual Aid	Increase Visibility
ALSF 1 & 2, MALSR, SSALR	To RVR 4000†
TDZL or RCLS	To RVR 4500*
RVR	To ½ mile
#For ILS, LPV, GLS procedures with a 200 foot HAT, RVR 1800 authorized with use of FD or AP or HUD to DA.	
(3) All Approach Types and all lines of minima other than (1) & (2) above	
Inoperative Component or Visual Aid	Increase Visibility
ALSF 1 & 2, MALSR, SSALR	½ mile
MALSF, MALS, SSALF, SSALS, SALSF, SALS	¼ mile
(4) Sidestep minima (CAT C-D)	
Inoperative Component or Visual Aid to Sidestep Runway	Increase Visibility
ALSF 1 & 2, MALSR, SSALR	½ mile
(5) All Approach Types, All lines of minima	
Inoperative Component or Visual Aid	Increase Visibility
ODALS (CAT A-B)	¼ mile
ODALS (CAT C-D)	½ mile


NW-1, 31 OCT 2024 to 26 DEC 2024

TERMS/LANDING MINIMA DATA 19339

CIRCLING APPROACH OBSTACLE PROTECTED AIRSPACE


The circling MDA provides vertical obstacle clearance during a circle-to-land maneuver. The circling MDA protected area extends from the threshold of each runway authorized for landing following a circle-to-land maneuver for a distance as shown in the tables below. The resultant arcs are then connected tangentially to define the protected area.

STANDARD CIRCLING APPROACH MANEUVERING RADIUS

Circling approach protected areas developed prior to late 2012 used the radius distances shown in the following table, expressed in nautical miles (NM), dependent on aircraft approach category. The approaches using standard circling approach areas can be identified by the absence of the  symbol on the circling line of minima.

Circling MDA in feet MSL	Approach Category and Circling Radius (NM)				
	CAT A	CAT B	CAT C	CAT D	CAT E
All Altitudes	1.3	1.5	1.7	2.3	4.5

EXPANDED CIRCLING APPROACH MANEUVERING AIRSPACE RADIUS

Circling approach protected areas developed after late 2012 use the radius distance shown in the following table, expressed in nautical miles (NM), dependent on aircraft approach category, and the altitude of the circling MDA, which accounts for true airspeed increase with altitude. The approaches using expanded circling approach areas can be identified by the presence of the  symbol on the circling line of minima.

Circling MDA in feet MSL	Approach Category and Circling Radius (NM)				
	CAT A	CAT B	CAT C	CAT D	CAT E
1000 or less	1.3	1.7	2.7	3.6	4.5
1001-3000	1.3	1.8	2.8	3.7	4.6
3001-5000	1.3	1.8	2.9	3.8	4.8
5001-7000	1.3	1.9	3.0	4.0	5.0
7001-9000	1.4	2.0	3.2	4.2	5.3
9001 and above	1.4	2.1	3.3	4.4	5.5

Comparable Values of RVR and Visibility

The following table shall be used for converting RVR to ground or flight visibility. For converting RVR values that fall between listed values, use the next higher RVR value; do not interpolate. For example, when converting 4800 RVR, use 5000 RVR with the resultant visibility of 1 mile.

RVR (feet)	Visibility (SM)	RVR (feet)	Visibility (SM)	RVR (feet)	Visibility (SM)	RVR (feet)	Visibility (SM)
1600	¼	2400	½	3500	¾	5500	1
1800	½	2600	½	4000	¾	6000	1½
2000	½	3000	¾	4500	¾		
2200	½	3200	¾	5000	1		

RADAR MINIMA

	RWY	GP/TCH/RPI	CAT	DA/ MDA-VIS	HAT HAA	CEIL-VIS	CAT	DA/ MDA-VIS	HAT HAA	CEIL-VIS
PAR	10	2.5°/42/1000	ABCD	195/16	100	(100-¼)				
	28	2.5°/48/1068	ABCD	187/16	100	(100-¼)				Visibility (RVR 100's of feet)
ASR	10		ABC	560/40	463	(500-¾)	DE	560/50	463	(500-1)
	28		AB	600/50	513	(600-1)	CDE	600/60	513	(600-1½)
CIR	10		AB	560-1¼	463	(500-1¼)	CDE	560-1½	463	(500-1½)
	28		AB	600-1¼	503	(600-1¼)	CDE	600-1½	503	(600-1½)

Visibility in Statute Miles

Radar Minima:

- Minima shown are the lowest permitted by established criteria. Pilots should consult applicable directives for their category of aircraft.
- The circling MDA and weather minima to be used are those for the runway to which the final approach is flown; not the landing runway. In the above RADAR MINIMA example, a category C aircraft flying a radar approach to runway 10, circling to land on runway 28, must use an MDA of 560 feet with weather minima of 500-1½.

NOTE: Military RADAR MINIMA may be shown with communications symbology that indicates emergency frequency monitoring capability by the radar facility as follows: (E) VHF and UHF emergency frequencies monitored

(V) VHF emergency frequency (121.5) monitored

(U) UHF emergency frequency (243.0) monitored

Additionally, unmonitored frequencies which are available on request from the controlling agency may be annotated with an "x".

▲ Alternate Minima not standard. Civil users refer to tabulation. USA/USN/USAF pilots refer to appropriate regulations.

▲ NA Alternate minima are Not Authorized due to unmonitored facility or absence of weather reporting service.

▼ Airport is published in the Takeoff Minimums, (Obstacle) Departure Procedures, and Diverse Vector Area (Radar Vectors) tabulation.

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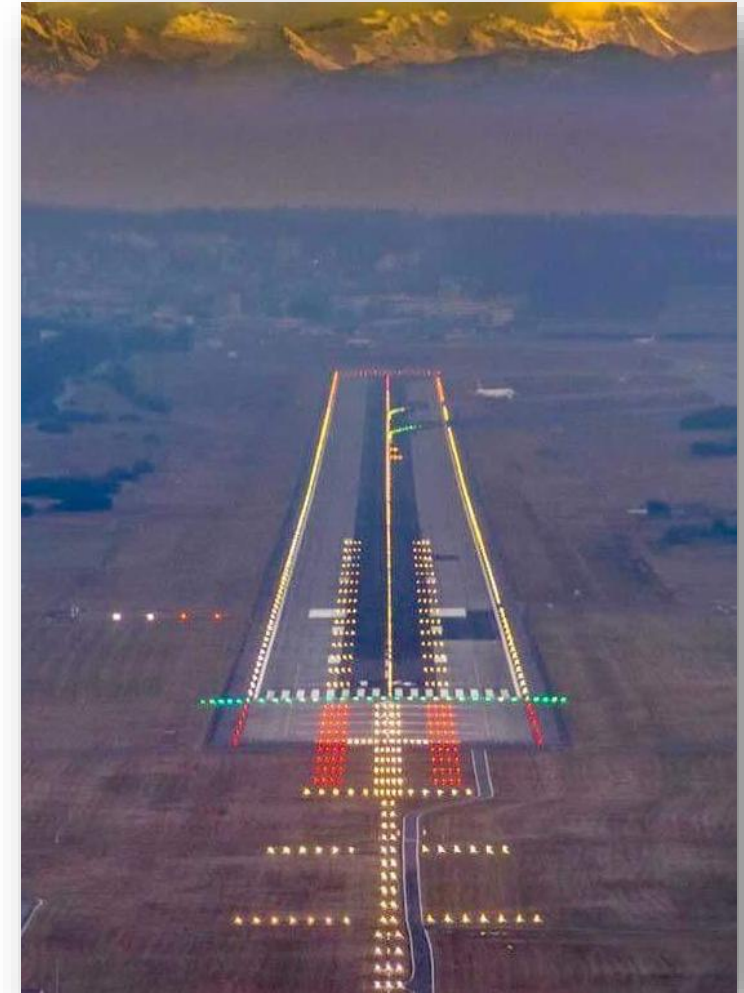
TERMS/LANDING MINIMA DATA 19339

NW-1, 31 OCT 2024 to 26 DEC 2024

INOP COMPONENTS 19339

3. Transition to Visual Flight

- **Acquire a Visual Reference**
 - Approaching DA/MDA, **split attention** between inside & outside
- **Visual References**
 - ALS: May continue to 100' above TDZE
 - Threshold (Markings, Lights)
 - Touchdown Zone (Markings, Lights)
 - Runway (Markings, Lights)
 - REIL, VASI
- **Use the VASI or PAPI to smoothly transition to visual flight**
 - If none, establish a normal landing site picture
- **Continue to use Visual + Instrument Indications**
- **Note factors that may affect landing**
 - Sloped runway, lighting, haze, rain, etc



3. Transition to Visual Flight

- **Maintain a Stable Approach**

- Simplifies the transition to visual flight
- Identify and use the Visual Descent Point (VDP)
- Set approach gates: if certain criteria not met → go around

- **Use Checklist**

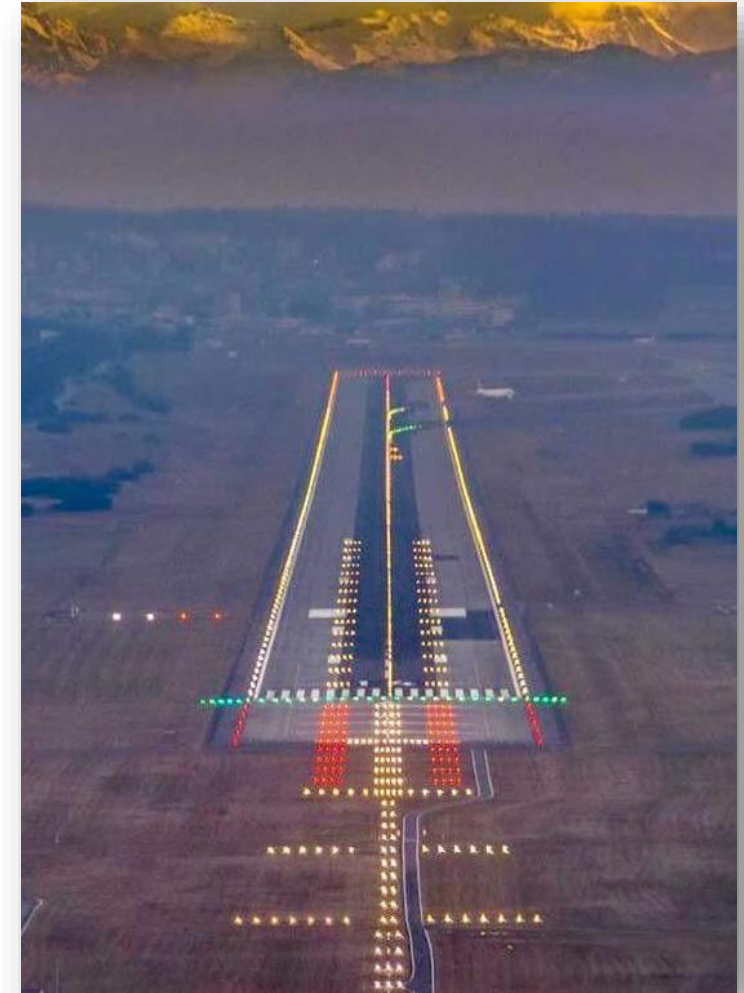
- Once visual and stable, **verify/recheck checklist is complete**
- Maintain a normal approach speed

- **Attention to ATC advisories**

- NOTAMs, Windshear, Wake Turbulence, Runway Conditions, Birds, etc
- Adjust and make decisions as required

- **Attention to Traffic and Obstacles**

- Once in VMC → **See and avoid**
- Particularly in non-towered fields, be mindful of traffic in the pattern, and/or aircraft departing towards you



Questions?

