

INOP COMPONENTS

INOPERATIVE COMPONENTS OR VISUAL AIDS TABLE

Landing minimums published on instrument approach procedures charts are based upon full operation of all components and visual aids associated with the particular instrument 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 glide slope inoperative minimums are published on instrument approach charts as localizer minimums. This table may be amended by notes on the approach chart. Such notes apply only to the particular approach category(ies) as stated. See Flight Information Handbook for description of components indicated below.

(1) ILS, MLS, and PAR

Inoperative Component or Aid	Approach Category	Increase Visibility
ALSF 1 & 2, MALSR, & SSALR	ABCD	¼ mile

(2) ILS with visibility minimum of 1,800 RVR

ALSF 1 & 2, MALSR, & SSALR TDZI RCLS RVR	ABCD	To 4000 RVR
	ABCD	To 2400 RVR
	ABCD	To ½ mile

(3) VOR, VOR/DME, VORTAC, VOR (TAC), VOR/DME (TAC), LOC, LOC/DME, LDA, LDA/DME, SDF, SDF/DME, RNAV, and ASR

Inoperative Visual Aid	Approach Category	Increase Visibility
ALSF 1 & 2, MALSR, & SSALR MALSR, SSALS, ODALS	ABCD	½ mile
	ABC	¼ mile

(4) NDB

ALSF 1 & 2, MALSR & SSALR MALSR, SSALS, ODALS	C	½ mile
	ABD	¼ mile
	ABC	¼ mile

METAR CONVERSION CHART

CEILING

RUNWAY VISIBILITY

PUBLISHED MINIMA FEET	REQUIRED EQUIVALENT METERS	RVR VALUES PUBLISHED IN HUNDREDS OF FEET	STATUTE MILE EQUIVALENT	NAUTICAL MILE EQUIVALENT	METERS EQUIVALENT	KILOMETERS EQUIVALENT
100	30	12	1/4 (Helicopter Only)	2/10	370	.4
200	60	16	1/4	2/10	490	.5
300	90	20	3/8	3/10	610	.6
400	120	24	1/2	4/10	730	.7
500	150	32	5/8	6/10	970	1.0
600	180	40	3/4	7/10	1220	1.2
700	210	45	7/8	8/10	1370	1.4
800	240	50	1	9/10	1520	1.5
900	270	60	1-1/4	1-1/10	1830	1.8
1000	300					
1100	330					
1200	360					
1300	390					
1400	420					
1500	450					

PREVAILING VISIBILITY

STATUTE MILES	NAUTICAL MILES	METERS	KILOMETERS	STATUTE MILES	NAUTICAL MILES	METERS	KILOMETERS
1/8	1/10	200	.2	1-3/4	1-5/10	2800	2.8
1/4	2/10	400	.4	1-7/8	1-6/10	3000	3.0
3/8	3/10	600	.6	2	1-7/10	3200	3.2
	4/10	700	.7		1-8/10	3400	3.4
1/2		800	.8	2-1/4	1-9/10	3600	3.6
	5/10	900	.9		2	3700	3.7
5/8		1000	1.0		2-1/10	3900	3.9
	6/10	1100	1.1	2-1/2	2-2/10	4000	4.0
3/4		1200	1.2	2-5/8		4200	4.2
	7/10	1300	1.3		2-3/10	4300	4.3
7/8		1400	1.4	2-3/4		4400	4.4
	8/10	1500	1.5		2-4/10	4500	4.5
1		1600	1.6	2-7/8		4600	4.6
	9/10	1700	1.7		2-5/10	4700	4.7
1-1/8	1	1800	1.8	3	2-6/10	4800	4.8
1-1/4	1-1/10	2000	2.0		2-7/10	5000	5.0
1-3/8	1-2/10	2200	2.2		2-8/10	5200	5.2
1-1/2	1-3/10	2400	2.4		2-9/10	5400	5.4
1-5/8	1-4/10	2600	2.6		3	6000	6.0

IFR LANDING MINIMA

Landing minima are established for six aircraft approach categories (ABCDE and COPTER). Categories C, D, and E are published in the High Terminal unless otherwise requested. MDA, DH/DA, HAA and HAT are always shown in feet. The standard format for the portrayal of landing minima is as follows:

INSTRUMENT APPROACH MINIMA

HIGH ALTITUDE

	Decision Height (DH) MSL Decision Altitude (DA) MSL								
	Aircraft Category							Height of DH (using QFE) above touchdown zone (HAT)	Ceiling in feet & Prevailing Visibility in SM
Precision Straight-in to Runway 27	CATEGORY	C		D		E			
	S-ILS 27		362/24	200	(200-½)				
	S-LOC 27		440/40	278	(300-¾)				
Non-Precision (Localizer) Straight-in to Runway 27	CIRCLING	620-1¾ 450 (500-1¾)		720-2	550 (600-2¼)				
	S-PAR 27		262/16	100	(100-¼)	GS 2.5°			
	Precision Approach Radar Straight-in to Runway 27	Minimum Descent Altitude (MDA)	Height of MDA (using QFE) above touchdown zone (HAT)	Height of MDA (using QFE) above airport (HAA)	Glide Slope Angle				

	Decision Height (DH) MSL Decision Altitude (DA) MSL								
	Aircraft Category							Height of DH (using QFE) above touchdown zone (HAT)	**Ceiling in feet & Prevailing Visibility in meters
Precision Straight-in to Runway 27	CATEGORY	C		D		E			
	S-ILS 27		362/730m	200	(200-800m)				
	S-LOC 27		440/1220m	278	(300-1200m)				
Non-Precision (Localizer) Straight-in to Runway 27	CIRCLING	620-2800m 450 (500-2800m)		720-3700m	550 (600-3700m)				
	S-PAR 27		262/490m	100	(100-400m)	GS 2.5°			
	Precision Approach Radar Straight-in to Runway 27	Minimum Descent Altitude (MDA)	Height of MDA (using QFE) above touchdown zone (HAT)	Height of MDA (using QFE) above airport (HAA)	Glide Slope Angle				

*Slash (/) denotes RVR Values and a dash (-) denotes Prevailing Visibility.

**At some locations, the ceiling/visibility may be published in meters as follows: (60m-800m).

IFR LANDING MINIMA

Landing minima are established for six aircraft approach categories (ABCDE and COPTER). In the absence of COPTER MINIMA, Helicopters may use the CAT A minimums of other procedures. MDA, DH/DA, HAA and HAT are always shown in feet. The standard format for portrayal of landing minima is as follows:

INSTRUMENT APPROACH MINIMA LOW ALTITUDE

	Decision Height (DH) MSL Decision Altitude (DA) MSL	Aircraft Category	*Prevailing Visibility/ RVR (RVR in 100s of feet)	Height of DH (using QFE) above touchdown zone (HAT)	Ceiling in feet & Prevailing Visibility in SM	
Precision Straight-in to Runway 27		CATEGORY	A	B	C	D
		S-ILS 27	362/24	200	(200-½)	
		S-LOC 27	440/24 278 (300-½)	440/40 278 (300-¾)		
Non-Precision (Localizer) Straight-in to Runway 27		CIRCLING	520-1 350 (400-1)	620-1¼ 450 (500-1¼)	620-1¾ 450 (500-1¾)	720-2¼ 550 (600-2¼)
Precision Approach Radar Straight-in to Runway 27		S-PAR 27	262/16	100 (100-¼)	GS 2.5°	
	Minimum Descent Altitude (MDA)		Height of MDA (using QFE) above touchdown zone (HAT)	Height of MDA (using QFE) above airport (HAA)	Glide Slope Angle	

	Decision Height (DH) MSL Decision Altitude (DA) MSL					
		Aircraft Category		*Prevailing Visibility/ RVR (RVR in meters)	Height of DH (using QFE) above touchdown zone (HAT)	**Ceiling in feet & Prevailing Visibility in meters
Precision Straight-in to Runway 27		CATEGORY	A	B	C	D
		S-ILS 27	362/730m	200	(200-800m)	
		S-LOC 27	440/730m 278 (300-800m)	440/1220m 278 (300-1200m)		
Non-Precision (Localizer) Straight-in to Runway 27		CIRCLING	520-1800m 350 (400-1800m)	620-1800m 450 (500-1800m)	620-2800m 450 (500-2800m)	720-3700m 550 (600-3700m)
Precision Approach Radar Straight-in to Runway 27		S-PAR 27	262/490m	100 (100-400m)	GS 2.5°	
	Minimum Descent Altitude (MDA)		Height of DH (using QFE) above touchdown zone (HAT)	Height of MDA (using QFE) above airport (HAA)	Glide Slope Angle	

COPTER MINIMA ONLY

No circling minimums are provided			**Ceiling in feet & Prevailing Visibility in meters
Prevailing Visibility in meters	CATEGORY	COPTER	
	H-176°	680-900m 363 (400-900m)	
Copter Approach Direction		Height Above Landing Area (HAL)	

*Slash (/) denotes RVR Values and a dash (-) denotes Prevailing Visibility.

**At some locations, the ceiling/visibility may be published in meters as follows: (60m-800m).

MINIMA DATA

▲ Alternate Minimums not standard. USA/USAF/USN pilots refer to appropriate regulations.

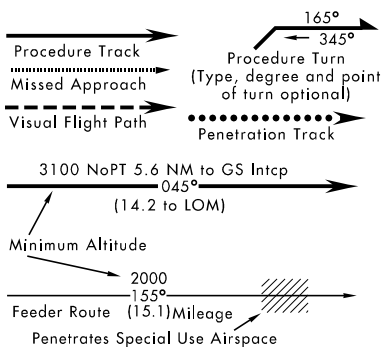
▼ Take-off Minimums not standard and/or Departure Procedures are published. Refer to tabulation.

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

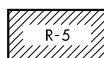
LEGEND INSTRUMENT APPROACH PROCEDURES (CHARTS)

PLANVIEW SYMBOLS

TERMINAL ROUTES



SPECIAL USE AIRSPACE



R-Restricted W-Warning
P-Prohibited A-Alert
D-Danger

RADIO AIDS TO NAVIGATION

110.1 Underline indicates No Voice transmitted on this frequency



LOM (Compass Locator at Outer Marker)



Marker Beacon



MAP WPT

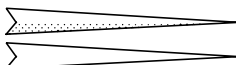


FLYOVER WAYPOINT

Waypoint Data

PRAYS
N38°58.30' W89°51.50'
121.7 CAP 187.1°/56.2
590

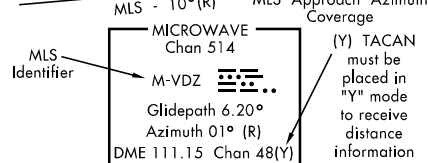
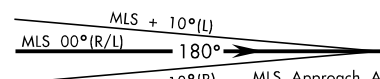
Waypoint Name
Coordinates,
Frequency, Identifier, Radial/Distance
(Facility to Waypoint)
Reference Facility Elevation



Localizer (LOC/LDA) Course



SDF Course



LOC/DME

LOC/LDA/SDF/MLS Transmitter
(shown when installation is offset from its normal position off the end of the runway)

Primary Nav Aid with INS data

LIMA
114.5 LIM
Chan 92
S12°00.80'
W77°07.00'

Secondary Nav Aid

LMM
LIMA
248 NT

MISCELLANEOUS

VOR Changeover Point

Rwy End Coordinates

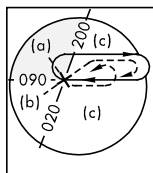
Helicopter Alighting Area

RWY 15 S12°00.52'
W77°06.91'

Distance Not to Scale

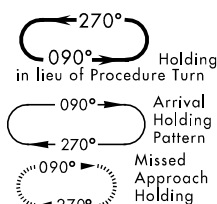
International Boundary

ENTRY DIAGRAM



(a) Parallel procedure
(b) Teardrop procedure
(c) Direct-entry procedure

HOLDING PATTERNS



Limits will only be specified when they deviate from the standard. DME fixes may be shown.

REPORTING POINT/FIXES

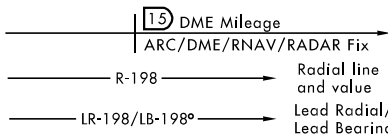
Reporting Point

Computer Navigation Fix (CNF)
x (Name) (No ATC Function)

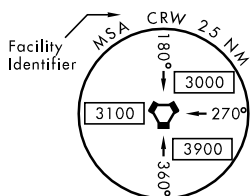
▲ Name (Compulsory)

△ Name (Non-Compulsory)

✕ Fix or Intersection



MINIMUM SAFE ALTITUDE (MSA)



(Arrows on distance circle identify sectors)

OBSTACLES

• Spot Elevation

• Highest Spot Elevation

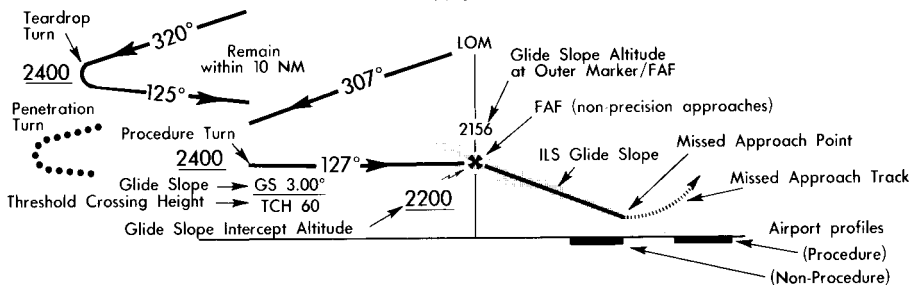
▲ Obstacle

▲ Group of Obstacles

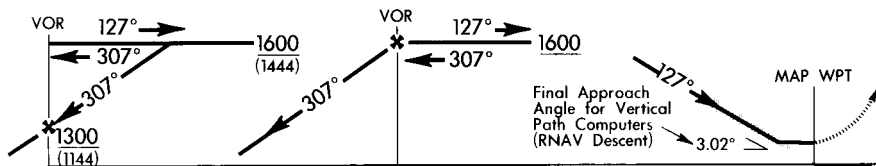
▲ Highest Obstacle

± Doubtful Accuracy

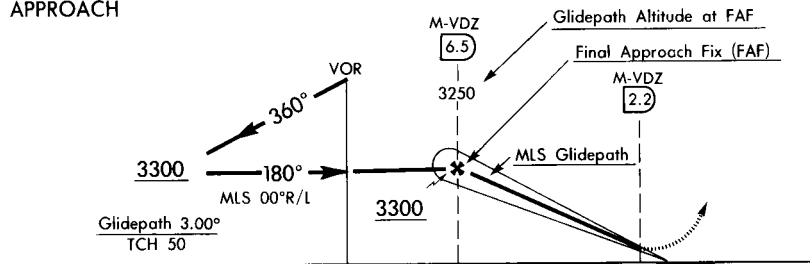
PROFILE



DESCENT FROM HOLDING PATTERN



MLS APPROACH



FACILITIES/FIXES

Z
FM
NDB (RBn)
VOR
VORTAC
TACAN
WPT

FIX
INT

ALTITUDES

(3669) 5500 2300 4800 2200

QFE Height Mandatory Altitude Minimum Altitude Maximum Altitude Recommended Altitude

Altitudes precede fix or are arrowed to show where they apply.
Height within parentheses is MSL altitude minus airport/touchdown zone elevation.
The QFE altitude will not have an altitude restriction shown, but the altitude restriction associated with the QNH altitude will also apply to the QFE altitude.

* Final Approach Fix (FAF) (for non-precision approaches)

V Visual Descent Point (VDP)

(2.5) DME Mileage

Visual Flight Path

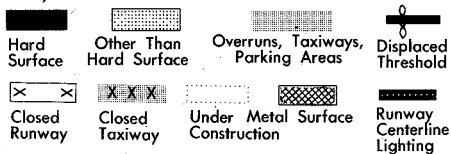
2400

Approximate point where glideslope/path is intercepted at published intercept altitude. Point where glideslope/path is intercepted is the precision FAF. GS intercept altitude may be a minimum, recommended, or mandatory altitude.

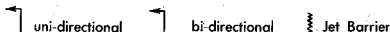
For non-precision approaches, the minimum altitude to be maintained until crossing the fix following GS intercept point is the published intercept altitude, altitude published at that fix, or ATC assigned altitude.

AIRPORT DIAGRAM/AIRPORT SKETCH

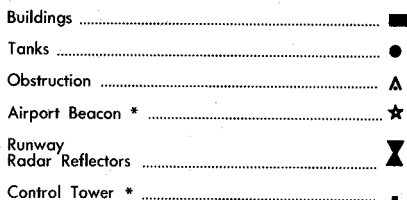
Runways



ARRESTING GEAR: Specific arresting gear systems; e.g., BAK-12, MA-1A etc., shown on airport diagrams, not applicable to Civil Pilots. Military Pilots Refer to Appropriate DOD Publications.



REFERENCE FEATURES



* When Control Tower and Rotating Beacon are co-located, Beacon symbol will be used and further identified as TWR.

"Runway length depicted is the physical length of the runway (end-to-end), including displaced thresholds if any) but excluding areas designated as overruns or stopways. Where a displaced threshold is shown and/or part of the runway is otherwise not available for landing, an annotation is added to indicate the landing length of the runway; e.g., RWY 13 ldg 5000'."

Runway Weight Bearing Capacity is shown as a codified expression. Refer to the appropriate Supplement/Directory for applicable codes.

Helicopter Alighting Areas
Negative Symbols used to identify Copter Procedures landing point

Runway TDZ elevation TDZE 123
Total Runway Gradient 0.8% UP →
(shown when runway gradient exceeds 0.3%)

U.S. Navy Optical Landing System (OLS) "OLS" location is shown because of its height of approximately 7 feet and proximity to edge of runway may create an obstruction for some types of aircraft.

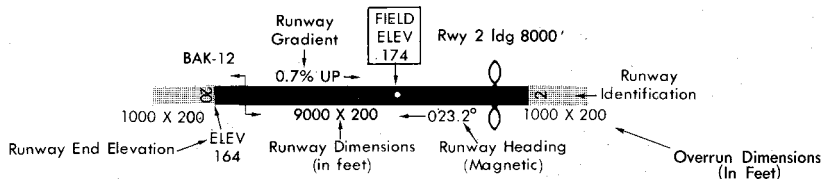
Approach light symbols are shown in the Flight Information Handbook.

Airport diagram scales are variable.

True/magnetic North orientation may vary from diagram to diagram.

Coordinate values are shown in 1 or ½ minute increments. They are further broken down into 6 second ticks, within each 1 minute increment.

Positional accuracy within ±600 feet unless otherwise noted on the chart.

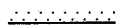


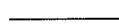
SCOPE

Airport diagrams are specifically designed to assist in the movement of ground traffic at locations with complex runway/taxiway configurations and provide information for updating Computer based Navigation Systems (i.e., INS, GPS) aboard aircraft. Airport diagrams are not intended to be used for approach and landing or departure operations. Requisition for the creation of airport diagrams must meet the above criteria and will be approved by the FAA or DOD on a case-by-case basis.

STANDARD TERMINAL ARRIVAL (STAR) CHARTS STANDARD INSTRUMENT DEPARTURE (SID) CHARTS

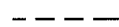
MISCELLANEOUS SYMBOLS

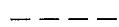
 Air Defense Identification Zone (ADIZ)

 Controlled Airspace, Class A,B,C,D,E

 Flight Information Region

 Buffer Zone Boundary

 International Boundary

 Frequency Sectorization

 Distance Not to Scale

 Procedure Turn

 DME Fix

 Intersection

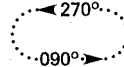
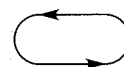
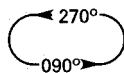
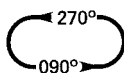
 DME Mileage (When not obvious)

OBSTACLES

- Spot Elevation
- Highest Spot Elevation
- ▲ Obstacle
- ▲ Group of Obstacles
- ▲ Highest Obstacle
- ± Doubtful Accuracy

Footnote ①, ②, etc., defines obstruction controlling Minimum Climb Rate

Holding Patterns

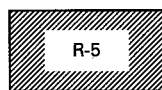


 Changeover Point

 Non-Compulsory Reporting Point

 Compulsory Reporting Point

SPECIAL USE AIRSPACE



R-Restricted
P-Prohibited
W-Warning
A-Alert
D-Danger
TRA-Temporary
Reserved Airspace

ALTITUDES

STAR entry facility/fix identified by name and symbol.

Outer Marker (OM)-continuous dashes

Middle Marker (MM)-alternate dots and dashes

All radials/bearings are magnetic

All mileages are nautical

Runway dimensions are in feet

Elevation in feet MSL

 Take off Minimums not standard and/or Departure Procedures are published.

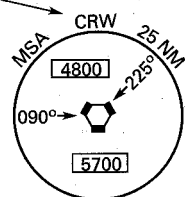
++ Suffix symbol added to UTC (Z) time indicates that during daylight saving time the effective hours will be one hour earlier than shown.

5500	2300	4800	2200
Mandatory Altitude	Minimum Altitude	Maximum Altitude	Recommended Altitude

MINIMUM SAFE ALTITUDE (MSA)

 MSA within 25 NM unless otherwise indicated (Emergency Use Only)

Facility Identifier



Example of flight plan Computer Code.

(MAJOR5.MAJOR)

STANDARD TERMINAL ARRIVAL (STAR) CHARTS STANDARD INSTRUMENT DEPARTURE (SID) CHARTS

RADIO AIDS TO NAVIGATION

 DME (symbol may be used with VOR, NDB, or LOC)
 VOR  TACAN  VORTAC

 WAYPOINT

 LOC  NDB

 LOM (Compass Locator)

 Marker Beacons

 Localizer Course

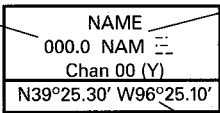
 SDF Course

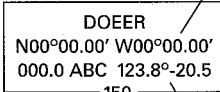
AIRPORTS



 Heliport

 Civil  Joint Civil-Military  Military

Frequency  Identifier
 NAME
 000.0 NAM
 Chan 00 (Y)
 N39°25.30' W96°25.10'
 L-3, H-1
 Enroute Chart Reference
 Geographic Position

Waypoint Data  Coordinates
 DOER
 N00°00.00' W00°00.00'
 000.0 ABC 123.8°-20.5
 150
 Radial/Distance
 Reference Facility Elevation

(T) indicates frequency protection range

Secondary Nav Aid

NAME
 000.0 (T) NAM
 Chan 00 (Y)

Underline indicates no voice transmitted on this frequency

(Y) TACAN must be placed in "Y" mode to receive distance information

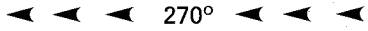
ROUTES

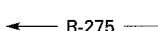
4500 MEA-Minimum Enroute Altitude

4500 MFA-Minimum Flight Altitude

*3500 MOCA- Minimum Obst Clearance Alt

Radar Route
(Headings are approximate)

 270°
 (Profile Descent Only)

 R-275 Radial line and value

 Altitude change at other than Radio Aids

x Mileage Breakdown
 N00°00.00'
 W00°00.00'

(65) Mileage between Radio Aids, Reporting Points and Route Breaks

Low Level Routes

3600

LOW LEVEL ROUTE "BRAVO"

Arrival/Departure
 270°

Transition


Alternate


Lost Communications


 V59 Airway/Route Identification



MCA (Minimum Crossing Altitude)