

**EXPLANATION OF
COMMON AIRPORT OPERATING MINIMUM SPECIFICATIONS
(ECOMS)**

FOREWORD

The Explanation of Common Airport Operating Minimum Specifications is based primarily on U.S. FAA Regulations which are not only applied by U.S. air carriers but also by airlines of many nations. Take-off minima for operators not applying U.S. FAA Regulations are based on Joint Aviation Regulations Operations (JAR OPS).

These rules are also well accepted and recognized by aviation authorities all over the world.

This paper shall provide the airlines and aviation authorities with the basic rules which are applied by Jeppesen in determination of airport operating minima as they are charted on Jeppesen Approach and Airport Charts.

Interested parties are invited to request further details as well as subsequent amendments to this paper through

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GENERAL INFORMATION

The following documents form the basis of the common minimum specifications explained hereunder:

- a) ICAO Document 8168.
- b) Joint Aviation Regulations Operations (JAR OPS-1 Subpart E) for Take-off minima.
- c) Respective Government Aeronautical Information Publications.
- d) FAA Handbook 8260.3B, TERPS, Chapter 3.
- e) FAA Operations Specifications for Air Carriers, Part C.

To determine landing minima (straight-in or circling) for a particular approach procedure the following information must be available:

- **Official Obstacle Clearance Altitude (Height)/OCA(H), or**
- **Official Obstruction Clearance Limit (OCL), or**
- **State Minimum or descent limits as established by the governing authority.**

Actual charted landing minimum will not be lower than any of the limits stated above. If none of the above information is available for a particular procedure, Jeppesen cannot chart any minimum.

Dimensional units as applied by the country of jurisdiction are reflected on Jeppesen charts for the minima, except DA(H) or MDA(H) which are in feet.

Landing minima consist of a descent limit (Decision Altitude/Height or Minimum Descent Altitude/Height) and a meteorological visibility (VIS) and/or RVR. Where a vertical visibility (ceiling) is required this will be indicated on the approach chart. Visibility minima which appear in units and fractions are statute or nautical miles, according to national standard. Metric visibilities are suffixed "m". RVR is given in hundreds of feet (unlabeled) or in units of meters suffixed "m".

Definitions

Ceiling/Vertical Visibility is the height of the base of the lowest layer of clouds covering more than half the sky or, in case of fog, mist, blowing snow and similar phenomena, the vertical distance at which an object like a meteorological balloon ceases to be visible.

Decision Altitude (Height)/DA(H) is shown in feet, and is a specified altitude and height in the precision approach at which a missed approach must be initiated if the required visual reference to continue the approach has not been established.

NOTE: DA is referenced to MSL and DH is referenced to the threshold elevation or TDZE, as specified by the State.

Final Approach Fix (FAF) is the fix from which the final approach (IFR) to an airport is executed and which identifies the beginning of the final approach segment. It is designated in the profile view of Jeppesen approach charts by the Maltese Cross symbol for non-precision approaches, if so specified by the State source.

Height Above Airport (HAA) is the height which, when added to the airport elevation, will give DA or MDA above MSL in context with this explanation.

Height Above Touchdown Zone or Runway Threshold (HAT) is the height which, when added to the TDZE, or threshold, or runway end elevation will give DA or MDA above MSL for straight-in approaches.

HIALS (for application of Table II & III), at least 720m (2400') of high intensity approach lights of any configuration with a roll guidance (including Precision Approach Light System), which is more advantageous than Short MIALS or Short HIALS.

FAA equivalents: ALSF-I, SSALR or MALSR.

Minimum Descent Altitude (Height) / MDA(H) is shown in feet above MSL and in parentheses as height above TDZE, or threshold, or runway end, or airport elevation, as specified by the country of jurisdiction for straight-in approaches, and above airport elevation for circling approaches.

NOTE: MDA(H) is the lowest altitude (height) in the non-precision approach to which an aircraft can descend IFR. Level flight at the MDA(H) is possible to the missed approach point (MAP), or the point where the descent-to-land begins, whichever is earlier. Descent below MDA(H) shall not be made until the Required Visual Reference is established.

ODALS (for application of Table III) is an Omnidirectional Approach Light System of 7 strobe lights, 5 of which are on the extended runway centerline at 300 ft intervals and one strobe-light located at both sides of the landing threshold.

Required Visual Reference

When conducting an instrument approach procedure, the pilot shall not operate an aircraft below the prescribed MDA(H) or continue an approach below the DA(H), unless the aircraft is in a position from which a normal approach to the runway of intended landing can be made and at least one of the following visual references is clearly visible to the pilot:

- a) Runway, runway markings, or runway lights.
- b) Approach lights.
- c) Threshold, threshold markings, or threshold lights.
- d) Touchdown zone, touchdown zone markings, or touchdown zone lights.
- e) Visual glide path indicator (such as VASI, PAPI).
- f) Any other feature which clearly identifies the landing surface.

Short MIALS or Short HIALS (for application of Table III). 420m - 720m (1400' - 2400') of medium or high intensity approach lights of any configuration with some roll guidance. FAA equivalents: SALS or MALS.

DETERMINATION OF MINIMA

(The data presented below have been extracted from the publications listed above. These documents will be binding in case of differences between this paper and the referenced publications).

A. Aircraft Categories

Aircraft approach category means a grouping of aircraft based on a speed $1.3 * V_{SO}$ (at maximum certificated landing weight). V_{SO} is the value as established for the aircraft by the certifying authority of the State of registry.

* V_{SO} means the stalling speed in the landing configuration.

For circling approaches the maximum speeds are listed with the Circling Minima tables on page 9.

The listed samples of aircraft types are taken from an ICAO/FAA listing. However, differences may exist for an individual model of an aircraft type. The V_{SO} specified in the Aircraft Operating Manual is binding to classify the aircraft for the proper category.

Aircraft Category A:

Speed less than 91 KT IAS..

e.g. CASA C-212
DC-3
DHC-6, -
7
All Helicopters

Aircraft Category B:

Speed 91 KT or more but less than 121 KT IAS.

e.g. Cessna Citation I, II, III
Convair 340,
580
DC-4, -6, -7
F-27, F-28-
1000, -2000, -6000
HS-146, -748
IL-18, -76

Aircraft Category C:

Speed 121 KT or more but less than 141 KT IAS.

e.g. Airbus A-300, -310
Boeing 727, 737, 707-320, 747 SP, 757,
767
BAC 1-11-400
Caravelle
DC-9
DC-8 (all versions, except -61, -63), DC-
10-10
F-28-3000, -4000
HS-125
L-1011-200

Aircraft Category D:

Speed 141 KT or more but less than 166 KT IAS.

e.g. Boeing 707-200, 747
DC-8-61/63, DC-10-30/40
HS-121 (Trident 3)
IS-62, -86
L-1011-500
TU-134-154

B. Visual Aids at Airports

- a) Visual aids are designed to increase the conspicuity of the runway to provide visual reference in the final stages of approach and landing.

Approach lighting, runway lighting, touch-down zone lighting, and runway marking should be in accordance with ICAO Annex 14.

- b) Approach lighting systems to be classified in accordance with the DEFINITIONS above. Runway lighting is required.

Runway centerline lighting, **and** touch-down zone lighting is required for reduced RVR for CAT I precision approaches.

C. Straight-In Landing

For a straight-in landing the angle between final approach track and runway centerline should not exceed 30°. If the final approach track does not intercept the runway centerline, then the track should lie within 500 ft (150m), laterally of the runway centerline at a point 3000 ft (900m) outward from the runway threshold.

If straight-in alignment criteria is not met, only circling minima should be established.

D. Descent Limits

- a) PRECISION APPROACHES (Approaches with an electronic glide slope). Decision Altitude (Height)/DA(H) is the descent limit for Precision Approaches. DA(H) will be at or above the OCA(H)/OCL or descent limit published by the country of jurisdiction. Decision Height will not be lower than shown in Table III, except for ILS CAT II or CAT III.
- b) NON-PRECISION APPROACHES (Approaches without an electronic glide slope). Minimum Descent Altitude (Height)/MDA(H) is the descent limit for Non-Precision Approaches. MDA(H) will be at or above the OCA(H)/OCL, or descent limit published by the country of jurisdiction. Unless prohibited by the country of jurisdiction the MDA will be rounded to the next higher 10 ft MSL increment, unless the MDA figure is already a multiple of 10 ft. Minimum Descent Height will not be lower than shown in Table III and IV.

E. Visibility

- a) The minimum standard visibility required to establish visual reference in time to descend safely from the DA(H) or MDA(H) and maneuver to the runway or airport, varies with the aircraft category, the height of the DA(H) or MDA(H), and the accuracy of the navigation system. Tables Ia and Ib relate Height Above Touchdown (HAT) or Height Above Airport (HAA) and distance from facility, to the visibility requirement without approach lights. The higher requirement of the two tables being charted. Table II determines the visibility reduction possible to take advantage of approach lights. **Tables Ia, Ib and II are applied only when visibility minima are not published by the governing authority. If visibility minimum is published by the governing authority, the higher visibility of Table III for straight-in, or Table IV for circling and state minimum is charted.**
- b) Lowest standard visibility or RVR without approach lights is:
¾ statute mile or RVR/VIS 1200m for Precision Approach.
1 statute mile or RVR 1500/VIS 1600m for Non-Precision Approach.

Table Ia
The Effect of HAT or HAA on Visibility Minimum without Approach Lighting
(Visibility in statute miles and meters)

HAT or HAA in ft	250-740	741-880	881-950	951 or above
CAT A	1 1600m		1¼ 2000m	
CAT B	1 1600m		1¼ 2000m	1½ 2400m

HAT or HAA in ft	250-400	401-500	501-600	601-670	671-740	741-810	811-880	881-950	951 or above
CAT C	1 1600m	1¼ 2000m	1½ 2400m	1¾ 2800m	2 3200m	2¼ 3600m	2½ 4000m	2¾ 4400m	3 4800m

HAT or HAA in ft	250-341	342-426	427-511	512-600	601-670	671-740	741-810	811-880	881 or above
CAT D	1 1600m	1¼ 2000m	1½ 2400m	1¾ 2800m	2 3200m	2¼ 3600m	2½ 4000m	2¾ 4400m	3 4800m

NOTE: If the Missed approach Point (MAP) is more than 2 SM from the runway, the required visibility shall be at least 2 SM/3200m but not less than the visibility specified above.

Table Ib
The Effect of Facility Distance on Visibility Minimum (Visibility in statute miles and meters)

VOR, TACAN, LOCALIZER, LDA, SDF, ASR, NDB, DF without Approach Lighting					
DIST. NM	0-10	Over 10-15	Over 15-20	Over 20-25	Over 25-30
CAT A	1 1600m	1 1600m	1 1600m	1 1600m	1 1600m
CAT B	1 1600m	1 1600m	1 1600m	1¼ 2000m	1¼ 2000m
CAT C	1 1600m	1 1600m	1¼ 2000m	1½ 2400m	1½ 2400m
CAT D	1 1600m	1¼ 2000m	1½ 2400m	1¾ 2800m	2 3200m

NOTE: NDB and DF approaches not authorized over 15 NM.
ASR approaches not authorized over 20 NM.
For ASR, NDB and DF distances over 10 NM apply the 25-30 NM column.

c) Visibilities in tables Ia) and Ib) above may be reduced by giving credit for approach light systems as follows:

Table II

When visibility without approach lights obtained from Table Ia and Ib is 1 statute mile or 1600m		higher than 1 statute mile or 1600m	
Visibility reduction permitted down to values shown in Table III	ACFT	VISIBILITY REDUCTION permitted for 720m (2400') HIALS	
		ALL Approaches (except NDB, DF)	NDB & DF Approaches
	A	by ½ SM or 800m	
	B	to not less than ¾ SM or 1200m	
C			
D	by ½ SM or 800m to not less than 1 SM or 1600m ❶	by ¼ SM or 400m to not less than 1 SM or 1600m	

❶ to not less than ¾ SM or 1200m for LOC (LLZ) + FAF (ILS with GS inop).

- d) The following tables represent the lowest minima for CAT I Precision and Non-Precision approaches charted on Jeppesen approach charts.

STANDARD STRAIGHT-IN MINIMA

Table IIIa

PRECISION APPROACH

1	APPROACH FACILITIES		ILS ①, MLS or PAR		ILS with offset LOC (LLZ) max 3°	
2	Lowest HAT		DH 200'		DH 250'	
3	Available LIGHTING SYSTEMS	AIRCRAFT CATEGORY	RVR	MET. VISIBILITY	RVR	MET. VISIBILITY
4	② 720m HIALS with TDZ + CL (900m if GS angle below 2.75°)	ALL	1800'	½	2400'	½
5			550m	800m	720m	800m
6	③ 720m HIALS (900m if GS angle below 2.75°)	ALL	2400'	½	2400'	½
7			720m	800m	720m	800m
8	No Approach Lights	ALL	4000' 1200m	¾ 1200m	4000' 1200m	¾ 1200m
9	① Full ILS normally includes LOC (LLZ), GS and OM (or radio fix or GS interception alt. fix)					

- NOTE 1:**
- It is the operators responsibility to increase DA(H) and RVR/VIS, respectively, for approaches with one-engine inoperative.
 - It is the responsibility of the pilots to increase the DA(H) for expected down-drafts or severe turbulence as well as to discontinue an approach in severe conditions.
 - For high DH/HAT (above 250') the required minimum VIS - without approach light system - is the distance to the runway from the point where the DA(H) is reached on the nominal glide slope, when no State minima are published.
 - If large aircraft, with vertical distance between glide slope antenna and bottom of main wheels in excess of 19 ft, operate into a runway with ILS TCH of less than 50 ft, they are subject to risk of touching down short of the runway. Therefore, operators are required, either to increase the DA(H) with the required visual reference, or to train pilots on suitable procedure in order to remain slightly above the nominal glide slope after passing through the DH of 200 ft.
- NOTE 2:**
- Lights or lighting systems not mentioned above will give no credit for visibility reduction.
 - Conversion of Approach Lighting length:
 - 900m = 2900 ft.
 - 720m = 2400 ft.
 - 420m = 1400 ft.
 - FAA lighting systems equivalents:
- NOTE 3:** The Mid RVR and Rollout RVR reports (if available) provide advisory information to pilots. The Mid RVR report may be substituted for the TDZ RVR report if the TDZ RVR report is not available.

Table IIIb

NON-PRECISION APPROACH

The table applies for MDH for which the visibility is not more than 1600m per Table Ia.

10	APPROACH FACILITIES		LOC (LLZ) + FAF (ILS with GS inop)		LOC (LLZ), VOR, ASR, PAR azimuth only		NDB, DF	
11	Lowest HAT or HAA	with FAF	MDH 250'		MDH 250'		MDH 300'	
12		without FAF	Not Applicable		MDH 300'		MDH 350'	
13	Available LIGHTING SYSTEMS	AIRCRAFT CATEGORY	RVR	MET. VISIBILITY	RVR	MET. VISIBILITY	RVR	MET. VISIBILITY
14	① 720m HIALS	A B C	2400' 720m	½ 800m	2400' 720m	½ 800m	4000' 1200m	¾ 1200m
15		D	4000' 1200m	¾ 1200m	5000' 1500m	1 1600m	5000' 1500m	1 1600m
16	② 420m-720m Short MIALS or HIALS or ODALS	A B C	4000' 1200m	¾ 1200m	4000' 1200m	¾ 1200m	4000' 1200m	¾ 1200m
17		D	5000' 1500m	1 1600m	5000' 1500m	1 1600m	5000' 1500m	1 1600m
18	No Approach Lights	ALL						

NOTE 1: a) Lights or lighting systems not mentioned above will give no credit for visibility reduction. LOC (LLZ) stands also for KRM.

b) Conversion of Approach Lighting length: 900m = 2900 ft.
720m = 2400 ft.
420m = 1400 ft.

c) FAA lighting systems equivalents:
① ALSF-I, or ALSF-2, or SSALR, or MALSR.
② SALS, or MALS, or ODALS.

NOTE 2: The Mid RVR and Rollout RVR reports (if available) provide advisory information to pilots. The Mid RVR report may be substituted for the TDZ RVR report if the TDZ RVR report is not available.

F. Circling Minima

The lowest circling minima that will be published are as follows:

- a) In conformity with ICAO, outside U.S.A. and Canada:

Table IV a)

AIRCRAFT CATEGORY	Max IAS	MDH (HAA)	VISIBILITY	CIRCLING AREA* Radius from Runway Thresh
A	100 Kt	394 ft	1 statute mile or 1600m	1.7 NM
B	135 Kt	492 ft	1 statute mile or 1600m	2.7 NM
C	180 Kt	591 ft	1½ statute miles or 2400m	4.2 NM
D	205 Kt	689 ft	2¼ statute miles or 3600m	5.3 NM

* in accordance with ICAO Doc 8168 Vol. II. Average aircraft bank angle: 20°.

Circling Minima will not be lower than

- official circling OCA(H)/OCL.
- State minimum or descent limit.
- Visibility required per Table Ia if **no** State minima published, e.g. if MDH of aircraft CAT C is 680 ft, the minimum visibility should be 3200m.

Circle-to-land MDA(H) applies within the circling approach area as designated by the country of jurisdiction, and provides at least the minimum required obstacle clearance within the final approach segment, as well as for the missed approach.

- b) In accordance with the U.S. FAA Standard for Terminal Instrument Procedures (TERPS) in the U.S.A, Canada and those countries which apply TERPS:

Table IV b)

SPEED CATEGORY Max IAS	MDH (HAA)	VISIBILITY	CIRCLING AREA* Radius from Runway Thresh
90 Kt	350 ft	1 statute mile or 1600m	1.3 NM
120 Kt	450 ft	1 statute mile or 1600m	1.5 NM
140 Kt	450 ft	1½ statute miles or 2400m	1.7 NM
165 Kt	550 ft	2 statute miles or 3200m	2.3 NM

* in accordance with TERPS. Average aircraft bank angle: 25°.

Circling Minima will not be lower than State minimum.

G. Ceiling

A ceiling will be charted for straight-in and/or circling if prescribed by the State authority as an additional parameter of airport operating minima.

H. Take-off Minima

a) Take-off minima for "AIR CARRIERS (FAA FAR 121)":

A ceiling is not required for take-off, except if specified by the governing authority. Minima are specified by the number of engines on the aircraft.

Standard minimum for 2 engine aircraft: RVR 5000 ft or RVR **1500m**
 VIS 1 statute mile or VIS **1600m**
 3 or 4 engine aircraft: RVR 2400 ft or RVR **720m**
 VIS ½ statute mile or VIS **800m**

Table VI

Lower-than-Standard Take-off Minima (FAA FAR 121)

AIR-CRAFT	With CL, RCLM and 2 or 3 Transmissometers capable of reading RVR as low as 600' or 150m ①	With CL and 2 Transmissometers not capable of reading RVR lower than 1000' or 300m ②	With HIRL or CL or RCLM or other RWY marking ④
2 or more Eng.	at Touch-down zone		RVR 1600' 500m or VIS ¼ 400m
	③ RVR 600' 175m	RVR 1200' 350m	
	at Mid-point (if available)		
	③ RVR 600' 175m	not required	
	at Roll-out end		
	③ RVR 600' 175m	RVR 1000' 300m	

- ① All three RVR's are controlling. If one (of three) RVR fails, take-off is authorized, provided the remaining two RVR's are at or above minimum, the remaining two are controlling.
- ② Both RVR's are required and controlling. A Mid-RVR maybe substituted for TDZ-RVR or Roll-out RVR report, if one of these reports are not available
- ③ - If RVR is measured in 25m-increments:
RVR of 175m apply at all three RVR measuring positions (see Table VI).
 - If RVR is measured in 30m-increments:
RVR of 180m will apply at TDZ, Mid-point and at Roll-out.
 - If RVR is measured in 50m-increments:
RVR 200m will apply at TDZ and Mid-point, and RVR 150m at Roll-out.
- ④ "Other RWY marking" or runway lighting shall provide pilots with adequate visual reference to continuously identify the take-off surface and maintain directional control throughout the take-off run.

"AIR CARRIER (FAR 121)" minima are charted only,

- for all major international airports,
- if FAA approved take-off minima are requested by a US operator.

The higher of State minimum and FAA minimum will be charted.

H. Take-off Minima (cont'd)

- b) Take-off minima for "AIR CARRIER" are in conformity with JAR OPS-1 Subpart E. These minima are provided for operators **not** applying take-off minima as specified under a) "AIR CARRIER (FAA FAR 121)" above.

The application of these take-off minima may be limited by the obstacle environment in the take-off and departure area. The minima RVR/VIS are determined to ensure the visual guidance of the aircraft during the take-off run phase. The subsequent obstacle clearance is the responsibility of the operator.

Table VII

AIRCRAFT CATEGORY	RL and CL	RCLM (Day only) or RL	RCLM (Day only) or RL	NIL (Day only)
	LVP must be in force			
A	200m (150m)	250m	400m	500m
B				
C				
D	250m (200m)	300m		

RVR in parenthesis apply only if TDZ RVR is supplemented by RVR reports at mid and/or roll-out end.

- NOTES:**
1. Take-off minima should not be less than the applicable landing minimum, unless a suitable Take-off Alternate Airport is filed with the (Company) Flight Plan, and which can be reached with the critical engine-out.
 2. Low visibility take-off with RVR/VIS below 400m requires:
 - a) the verification that Low Visibility procedures (LVPs) have been established and are in force (all CAT II/III approved aerodromes). The following guidance has been established for aerodromes not approved for CAT II/III operations. Until such time that the concept for LVPs is also established for such aerodromes, the commander must satisfy himself with Air Traffic Services, or the Aerodrome Operator, that for a Low Visibility Take-off only one aircraft at a time is on the maneuvering area, and that vehicle traffic on the maneuvering area is controlled and restricted to the absolute minimum.
 - b) two pilots.
 3. With low visibility take-off, special consideration to be given to - crosswind, - breaking action, - and runway contamination.
 4. Take-off minimum should be selected to ensure sufficient guidance to control the aircraft in case of:
 - discontinued take-off due to adverse circumstances, or
 - continued take-off after failure of the critical engine.
 5. The pilot can determine the TDZ RVR from the Take-off position.
 6. Take-off minima without specific runway centerline marking (day only) should be at least 500m.
 7. Take-off minima described above will be charted unless more restrictive State minima are prescribed.

J. Minima for Filing as Alternate

When U.S. FAA Regulations are binding, the certificate holder is authorized to derive alternate airport weather minima from the following table. In no case shall the certificate holder use an alternate airport weather minimum lower than any applicable minimum derived from this table. In determining alternate airport weather minima, the certificate holder shall not use any airport which is not authorized for use as an Alternate Airport.

APPROACH FACILITY CONFIGURATION	Alternate Airport IFR Weather Minima	
	Ceiling	Visibility
For airports with at least one operational navigational facility providing a straight-in non-precision approach procedure, or straight-in precision approach, or, when applicable, a circling maneuver from an instrument approach procedure.	Add 400 ft to the MDH or DH as applicable.	Add 1 SM or 1600m to the landing minimum.
For airports with at least two operational navigational facilities, each providing a straight-in approach procedure to different , *suitable runways. For an ER-OPS Enroute Alternate Airport these operations specifications apply for separate *suitable runways).	Add 200 ft to the higher DH or MDH of the two approaches used.	Add ½ SM or 800m to the higher authorized landing minimum of the two approaches used.

* in this context a "different" runway is any runway with a different runway number, whereas "separate" runways cannot be opposite ends of the same runway.

K. RVR Substitution for Visibility

Table for conversion of RVR in feet to Meter values and VISIBILITY in Statute/Nautical Miles to Meter values.

Table VIII

PRESCRIBED RVR MINIMUM		METEOROLOGICAL VISIBILITY WHEN RVR NOT AVAILABLE		
RVR Feet	RVR Meters	Statute Miles	Meters	Nautical Miles
500 ft	150m			
600 ft	175m			
700 ft	200m			
1000 ft	300m			
1200 ft	350m			
1600 ft	500m	¼ SM	400m	¼ NM
1800 ft	550m			
2000 ft	600m			
2400 ft	720m	½ SM	800m	½ NM
4000 ft	1200m	¾ SM	1200m	NM
4500 ft	1400m	7/8 SM	1400m	NM
5000 ft	1500m	1 SM	1600m	NM
2100 ft	630m			

cont'd

PRESCRIBED RVR MINIMUM		METEOROLOGICAL VISIBILITY WHEN RVR NOT AVAILABLE		
RVR Feet	RVR Meters	Statute Miles	Meters	Nautical Miles
6000 ft	1800m	1¼ SM	2000m	1 NM
		1½ SM	2400m	1 NM
		1¾ SM	2800m	1½ NM
		2 SM	3200m	1¾ NM
		2¼ SM	3600m	2 NM
		2½ SM	4000m	2 NM
		2¾ SM	4400m	2 NM
		3 SM	4800m	2 NM

Feet-Meters-Mile RVR substitutions are aligned horizontally.

SAMPLE PRESENTATION OF COMMON MINIMA ON APPROACH CHARTS

PROCEDURE SIDE

Ceiling (Vertical Visibility) NOT required.
With RVR and meteorological visibility (VIS).

STRAIGHT-IN LANDING RWY 16L							CIRCLE-TO-LAND		
ILS			LOC (GS out)		NDB		Max Kts	MDA(H)	
DA(H) 214' (200')			MDA(H) 500' (486')		MDA(H) 700' (686')				
	FULL	TDZ or CL out	ALS out	ALS out	ALS out	ALS out			
A				RVR 720m VIS 800m	RVR 1500m VIS 1600m	1200m	RVR 1500m VIS 1600m	100	700' (686') 1600m
B	RVR 550m VIS 800m	RVR 720m VIS 800m	1200m					135	
C				1200m	2000m	2400m	3200m	180	700' (686') 3200m
D				RVR 1500m VIS 1600m	2400m	3200m	3600m	205	

Ceiling (Vertical Visibility) required.
No RVR.
Meteorological visibility (VIS) only.
State restriction require minima higher than standard.

STRAIGHT-IN LANDING RWY 06							CIRCLE-TO-LAND		
ILS			LOC (GS out)		NDB		Max Kts	MDA(H)	CEIL-VIS
DA(H) ABC: 1260' (230') D: 1340' (310')			MDA(H) ABC: 1360' (330') D: 1380' (350')		MDA(H) 700' (686')				
	FULL	ALS out	CEILING-VISIBILITY	ALS out	ALS out	ALS out			
A								100	1940' (893') 275m - 2000m
B			45m - 1200m					135	
C								180	2040' (993') 305m - 4800m
D			60m - 1600m					205	

AIRPORT SIDE

TAKE-OFF							
AIR CARRIER Rwys 07, 08, 25, 26			Rwys 02L, 20R	AIR CARRIER (FAR 121) Rwys 07, 08, 25, 26			Rwys 02L, 20R
With HIRL and CL		HIRL or CL	HIRL		CL & RCLM any RVR out, other two req.	Adequate Vis Ref	Adequate Vis Ref
A	RVR 150m	RVR 250m	RVR 250m	2 Eng	TDZ RVR 175m Mid RVR 175m	RVR 500m VIS 400m	RVR 500m VIS 400m
B	RVR 200m (150m)	RVR 300m (250m)	RVR 300m				
C	RVR 250m (200m)	RVR 400m (300m)	RVR 400m	3 & 4 Eng	Roll out RVR 175m		
D							

Minima for filing as ALTERNATE are shown only if specified by the State.

TAKE-OFF							
AIR CARRIER LVP must be in Force Rwys 07, 08, 25, 26			All Rwys	All Rwys	AIR CARRIER (FAR 121) Rwys 07, 08, 25, 26		Rwys 02L, 20R
RL & CL		RCLM (DAY only) or RL	RCLM (DAY only) or RL		CL & RCLM any RVR out, other two req.	Adequate Vis Ref	Adequate Vis Ref
A	200m (150m)	250m	400m	2 Eng	TDZ RVR 175m Mid RVR 175m	RVR 500m VIS 400m	RVR 500m VIS 400m
B							
C	250m (200m)	300m		3 & 4 Eng	Roll out RVR 175m		
D							

On charts dated 12 NOV 99 or later, minima for "AIR CARRIER" are shown in accordance with JAR OPS-1 Subpart E.

Reference documents for operational requirement are:	
- ICAO Annex 6, Operations of Aircraft	- JAR OPS 1
- ICAO Doc 9365, All-Weather Operations	to be ordered from:
to be ordered from:	Printing & Publication Services Ltd.
Document Sales Unit	Greyville House 37
ICAO	Gratton Road
1000 Sherbrooke Street West	Cheltenham GL50 2BN
Suite 400	England
Montreal, Quebec	
CANADA H3A 2R2	

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