

**JEPPESEN AIRWAY MANUAL VERSUS EU-OPS 1 REQUIREMENTS**

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The following table helps to identify the sections of the Jeppesen Airway Manual which comply with EU-OPS 1.

For further details, please refer to EU-OPS, Subpart P, Appendix 1 to OPS 1.1045 Part C, Route and Aerodrome Instructions and Information.

EU-OPS (Appendix 1 to OPS 1.1045 Part C)	Jeppesen Airway Manual
a) Minimum flight level/Minimum flight altitude	a. Enroute-, Area-, SID/STAR charts. b. INTRODUCTION section, Enroute Chart Legend.
b) Operating minima for departure-, destination- and alternate aerodromes	a. Approach-, Airport charts b. 10-9S pages (EU-OPS Minimums) c. ATC section "EU-OPS Aerodrome Operating Minimums (AOM)"
c) Communication facilities and navigation aids	a. RADIO AIDS section b. Approach-, Airport charts c. SID/STAR charts d. Enroute charts
d) Runway data and aerodrome facilities	a. AIRPORT DIRECTORY section b. Airport charts
e) Approach, missed approach and departure procedures including noise abatement procedures	a. Approach charts b. SIDs & STARs c. Noise pages d. ATC section 1. Noise Abatement Procedures 2. State pages
f) COM-failure procedures	a. EMERGENCY section b. ATC section, Emergency and Communications Failure Procedures
g) Search and rescue facilities in the area over which the aeroplane is to be flown	a. EMERGENCY section, Search and Rescue b. ATC section c. AIRPORT DIRECTORY
h) A description of the aeronautical charts that must be carried on board in relation to the type of flight and the route to be flown, including the method to check their validity.	a. INTRODUCTION section, Chart Legend
i) Availability of aeronautical info and MET services	a. METEOROLOGY section b. Enroute charts c. AIRPORT DIRECTORY
j) Enroute COM/NAV procedures	a. ATC section, State pages b. ENROUTE section c. Enroute charts
k) Aerodrome categorization for flight crew competence qualification	This is not part of the Standard Airway Manual as it is airline specific. However it can be part of a Tailored Manual. Special Jeppesen service is the Airport Familiarization/Qualification program
l) Special aerodrome limitations (performance limitations and operating procedures)	Cannot be part of the Standard Airway Manual, as it is aircraft/performance specific. However, Jeppesen is providing its OpsData Service for these purposes

Jeppesen CHART CHANGE NOTICES provide flight crews with temporary and permanent changes between revision of charts. They are issued for each Airway Manual coverage with every revision.

Jeppesen NAVDATA CHANGE NOTICES are issued for each Navigation Data Base geographic area. They provide flight crews with temporary changes affecting

their FMCS or Navigation Computer Systems. They also provide permanent changes effective between the 28 day AIRAC cycle.

Both services do not replace AIS NOTAM Services in any manner.

## JEPPESEN AIRWAY MANUAL VERSUS EU-OPS 1 REQUIREMENTS

### REVISION SERVICE

Aeronautical Chart Services are available either as the Standard Airway Manual Service or the customer defined Tailored Route Manual Service.

Depending on geographical coverage, customer defined requirements or other reasons both types of Aeronautical Chart Services may be set up for weekly, bi-weekly or four-weekly revisions to be kept current. Bi-weekly and four-weekly revisions may be supplemented by weekly revisions if it is required to get important changes as soon as possible to our customers. Each revision is accompanied by a revision letter which indicates the necessary actions to keep the Chart Service current. The Record of Revisions page in front of the Manual needs to be signed after the completion of each revision. A consecutive revision numbering assures that the customer can see that all published revisions for this particular Chart Service are received. The first revision letter in a calendar year also indicates which was the last revision for this Chart Service of the past year.

An ICAO developed AIRAC (Aeronautical Information Regulation and Control) system (Annex 15, Chapter 6-1 and Doc 8126, Chapter 2-6) assures that all significant changes are made available prior the effective date. Governing authorities are required to make defined significant changes effective only on certain Thursdays in intervals of 28 days, the so-called AIRAC dates. Furthermore are the governing authorities required to publish any changes under the AIRAC system with defined lead times allowing the commercial aeronautical chart providers to update and distribute their products in advance of the effective date.

Not all Aeronautical Chart Services must get regular updates as this also depends if there are charts to be revised per the Jeppesen revision criteria which have been developed over decades in cooperation with our customers.

Whenever charts cannot be revised, e.g. information not received early enough or clarifications to the governing authorities must be resolved prior publication, respective information is distributed by the means of Chart Change Notices which are also available on-line to all customers via our website.

### CHECKLISTS

Checklists are issued at regular intervals to enable all Manual Service holders to check the up-to-date status and the completeness on the material subscribed to. Anytime, an updated copy of the checklist can be requested. Furthermore are on-line and off-line electronic Chart Services available which can be used to check the paper based Chart Service currency against.

**APPROACH CHART LEGEND — EU-OPS 1 AERODROME OPERATING MINIMUMS (AOM)**

Publication of minimums does not constitute authority for their use by all operators. Each individual operator must obtain appropriate approval for their use.

**GENERAL**

Beginning in November 2008 Jeppesen will replace the current JAR-OPS 1 minimums with the new minimums introduced by the 2nd amendment to EU-OPS 1.

The "Standard" label in the upper left corner of the minimums box indicates that the minimums are based on EU-OPS 1 (Subpart E - Appendix 1 new to OPS 1.430). The "JAR-OPS" label in the upper left corner of the minimums box indicates that the minimums are based on JAR-OPS 1 or EU-OPS 1 (Subpart E - Appendix 1 old to OPS 1.430). For a detailed excerpt of EU-OPS 1 minimums refer to Air Traffic Control (ATC) Series 600 pages.

Jeppesen charted minimums are not below any State-provided minimums. Higher existing minimums for FAR 121 operators and those applying U.S. Oper-

ations Specifications are footnoted. RVR/CMV/VIS values are shown in measuring units as reported by the governing agency.

AOM for take-off and landing are either shown on Jeppesen instrument approach or aerodrome charts or on a separate minimums listing. Landing minimums will be shown as RVR, but values above 2000m will be designated as Converted Meteorological Visibility, prefixed "CMV". Take-off minimums are shown without prefix because they are either RVR or VIS. Circling minimums are always visibilities which is indicated in the circling minimums box. For the separate minimums listings RVR, CMV and VIS are abbreviated as R, C and V. The following table is used to convert a reported VIS into RVR/CMV.

**CONVERSION OF REPORTED MET VIS TO RVR/CMV**

Lighting elements in operation	RVR/CMV = Reported MET VIS x	
	Day	Night
HIALS and HIRL	1.5	2.0
Any type of lighting installation other than above	1.0	1.5
No lighting	1.0	Not Applicable

NOTE: Most of the samples focus only on the relevant information of the related paragraph. Other sections within the samples are intentionally left blank.

**TAKE-OFF MINIMUMS**

The application of these minimums may be limited by the obstacle environment in the take-off and departure area. The RVR/VIS minimums are determined to ensure the visual guidance of the take-off run phase. The subsequent clearance of obstacles is the responsibility of the operator. Low visibility take-off with RVR/VIS below 400m requires the ver-

ification that Low Visibility Procedures (LVP) have been established and are in force. RVR/VIS for the initial part of take-off run can be replaced by pilot assessment. The multiple RVR requirement means, that the required RVR value must be achieved for all of the relevant RVR reporting points, except for the initial part, which can be determined by pilot assessment. Approved operators may reduce their take-off minimums to 125m (aircraft categories A, B, C), 150m (category D) or to 75m (all categories) with an approved lateral guidance system.

**Sample of Take-off Minimums**

Standard	TAKE-OFF 1					
	All Rwy's					
2	LVP must be in Force					NIL (DAY only)
	Approved Operators HIRL, CL & mult. RVR req	RL, CL & mult. RVR req	RL & CL	RCLM (DAY only) or RL	RCLM (DAY only) or RL	
A						
B	125m	150m	200m	250m	400m	500m
C						
D	150m	200m	250m	300m		
1 Operators applying U.S. Ops Specs: CL required below 300m; approved guidance system required below 150m.						
2 With approved guidance system: ABCD 75m.						

**CIRCLING MINIMUMS**

Circling minimums will only be charted if a circling OCA(H) or MDA(H) is provided by the procedure source. Otherwise, the circling box will be removed. If circling is not authorized by the procedure source, it will be noted in the notes box of the Briefing Strip header. Where straight-in minimums are higher than

circling minimums (DH/MDH or RVR/VIS), the circling MDH or visibility will be raised to match the straight-in minimums.

**APPROACH CHART LEGEND — EU-OPS 1 AERODROME OPERATING MINIMUMS (AOM)**
**NON-PRECISION APPROACH MINIMUMS AND CHART PROFILE VIEW**

According to the EU-OPS requirements, all non-precision approaches shall be flown using the continuous descent final approach (CDFA) technique with decision altitude (height), and the missed approach shall be executed when reaching the DA(H) or the missed approach point (MAP), whichever occurs first.

The lateral part of the missed approach procedure must be flown via the MAP unless stated otherwise in the procedure. Normally only CDFA minimums are shown. These are identified by the use of a DA(H). Jeppesen does **not** include an add-on when publishing a DA(H) for a CDFA non-precision approach. Non-CDFA minimums are shown in exceptional cases and identified by an MDA(H).

**Sample of Non-precision Minimums (CDFA)**

Standard		STRAIGHT-IN LANDING RWY 07	
		DA(H) <b>680'</b> (429')	
		ALS out	
A	RVR 1500m	RVR 1500m	
B			
C	RVR 1600m	RVR 2000m	
D			

**Sample of Non-precision Minimums (CDFA + non-CDFA)**

Standard		STRAIGHT-IN LANDING RWY 07			
		DA(H) <b>680'</b> (429')		MDA(H) <b>680'</b> (429')	
		ALS out		ALS out	
A	RVR 1500m	RVR 1500m	RVR 1800m	CMV 2200m	
B					
C	RVR 1600m	RVR 2000m	RVR 2000m	CMV 2400m	
D					

The profile depiction will be modified to show the continuous descent on final approach. Source-published minimum altitudes will be shown as segment minimum altitudes in the profile (grey shaded box). These minimum altitudes are typically provided for obstacle clearance and must not be violated to remain clear of obstacles or terrain.

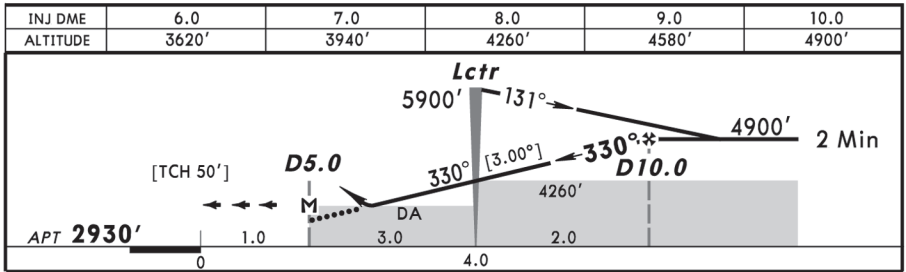
If not published by the procedure source, a table depicting DME vs altitude, distance vs altitude, or timing vs altitude will be calculated by Jeppesen and shown above the profile view. The timing table includes the descent angle, the FAF and the altitude at the FAF. Altitudes are calculated for 20, 40, 60, 80 and 100s from FAF and are based on speeds of 90, 120, 140, 160 and 180kt. Only altitudes above the decision altitude are provided.

**Sample of timing vs altitude table**

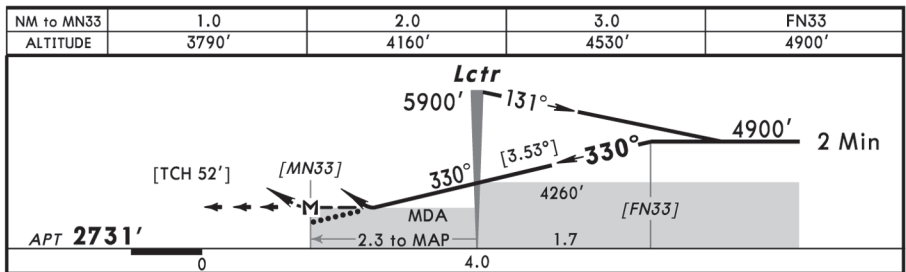
LG Lctr: 5000'						
3.60°	20s	40s	60s	80s	100s	
90 kt	<b>4810'</b>	<b>4620'</b>	<b>4430'</b>	<b>4240'</b>	<b>4050'</b>	
120 kt	<b>4750'</b>	<b>4490'</b>	<b>4240'</b>	<b>3980'</b>	<b>3730'</b>	
140 kt	<b>4710'</b>	<b>4410'</b>	<b>4110'</b>	<b>3820'</b>	<b>3520'</b>	
160 kt	<b>4660'</b>	<b>4320'</b>	<b>3980'</b>	<b>3650'</b>		
180 kt	<b>4620'</b>	<b>4240'</b>	<b>3860'</b>			

Where CDFA minimums are shown, the profile will be modified to depict the continuous descent. The missed approach pull-up arrow is shown at the point where the decision height is reached. There is no level segment depicted prior to the MAP, and the MAP is shown as published by the procedure source.

APPROACH CHART LEGEND — EU-OPS 1 AERODROME OPERATING MINIMUMS (AOM)



In exceptional cases it may be necessary to include CDFA and non-CDFA minimums. Where this occurs, a level segment is shown prior to the missed approach point and the pull-up arrow is shown at the MAP.



**CAT I PRECISION AND APV APPROACH MINIMUMS**

An RVR of less than 750m may be used under the conditions a. to d. shown below (Full column). Otherwise the RVR is limited to 750m or above (Limited column).

- a. CAT I operations to runways with FALS and TDZ and CL and with decision height of 200ft **or**
- b. CAT I operations to runways with FALS but without TDZ and/or CL when using an approved HUDLS or an equivalent approved system **or**
- c. CAT I operations to runways with FALS but without TDZ and/or CL when conducting a coupled or flight-director-flown approach to a decision height not less than 200ft **or**
- d. APV to runways with FALS and TDZ and CL when using an approved HUD, but not below RVR 600m.

**APPROACH CHART LEGEND — EU-OPS 1 AERODROME OPERATING MINIMUMS (AOM)**
**Sample of CAT I Minimums (FALS + CL)**

Standard		STRAIGHT-IN LANDING RWY 26			
		ILS			
		DA(H) AB: <b>1258'</b> (200') C: <b>1318'</b> (260')			
		D: <b>1388'</b> (330')			
		FULL	Limited	ALS out	
A	RVR 550m	RVR 750m	RVR 1200m		
B	RVR 600m				
C	RVR 800m				
D	RVR 800m	RVR 800m	RVR 1500m		

**Sample of CAT I Minimums (IALS)**

Standard		STRAIGHT-IN LANDING RWY 26			
		ILS			
		DA(H) AB: <b>1258'</b> (200') C: <b>1318'</b> (260')			
		D: <b>1388'</b> (330')			
		FULL/Limited	ALS out		
A	RVR 750m	RVR 1200m			
B	RVR 800m	RVR 1300m			
C	RVR 1100m	RVR 1500m			

**Sample of APV Minimums (FALS + TDZ + CL)**

Standard		STRAIGHT-IN LANDING RWY 26			
		LNAV/VNAV			
		DA(H) <b>1308'</b> (250')			
		ALS out			
A					
B					
C	RVR 750m <b>1</b>	RVR 1300m			
D					

**1** With TDZ, CL and HUD: RVR 600m

**LOWER THAN STANDARD CAT I MINIMUMS**

Operators must be approved by their authority to conduct lower than standard CAT I operations. For approved operators, tailored charts will be created on customer request.

**CAT II PRECISION APPROACH MINIMUMS**

Minimums are applicable to EU-OPS approved operators as well as to FAR 121 operators and those applying U.S. Operations Specifications (OpsSpecs). Higher existing minimums in accordance with U.S. OpsSpecs are footnoted.

The minimum RVR is 300m. But for category D it is required to conduct an autoland. Otherwise, the minimum RVR is 350m; however, this value is not charted on standard Jeppesen charts.

APPROACH CHART LEGEND — EU-OPS 1 AERODROME OPERATING MINIMUMS (AOM)

Sample of CAT II Minimums

<b>Standard</b>		STRAIGHT-IN LANDING RWY 04 CAT II ILS	
ABCD <b>RA 141'</b> DA(H) <b>855'(100')</b>	LACFT <b>RA 184'</b> DA(H) <b>877'(122')</b>		
RVR <b>300m</b> <b>I</b>	RVR <b>400m</b>		
<b>I</b> Operators applying U.S. Ops Specs: Autoland or HGS required below RVR 350m.			

**OTHER THAN STANDARD CAT II PRECISION APPROACH MINIMUMS**

These minimums will only be published if the procedure is approved for their use by the aerodrome's Civil Aviation Authority. Charting is similar to standard CAT

II minimums but includes columns for conditions with and without lights. An RVR of 400m or below can only be used if CL are available. Where the higher value of 450m is shown in the box, the lower value, which requires CL, is added as footnote.

Sample of Other Than Standard CAT II Minimums (FALS + CL)

<b>Standard</b>		STRAIGHT-IN LANDING RWY 04 CAT II ILS	
ABCD <b>RA 141'</b> DA(H) <b>855'(100')</b>	LACFT <b>RA 184'</b> DA(H) <b>877'(122')</b>		
	ALS out		ALS out
RVR <b>450m</b> <b>I</b>	RVR <b>700m</b>	RVR <b>450m</b>	RVR <b>700m</b>
<b>I</b> With CL: CAT A, B & C RVR 350m, CAT D RVR 400m			

Sample of Other Than Standard CAT II Minimums (IALS)

<b>Standard</b>		STRAIGHT-IN LANDING RWY 04 CAT II ILS	
ABCD <b>RA 141'</b> DA(H) <b>855'(100')</b>	LACFT <b>RA 184'</b> DA(H) <b>877'(122')</b>		
	ALS out		ALS out
RVR <b>450m</b>	RVR <b>700m</b>	RVR <b>500m</b>	RVR <b>700m</b>

**CAT III PRECISION APPROACH MINIMUMS**

CAT III minimums are only charted on tailored charts or on the Airline Chart series (CAO). The depiction depends on the customer's approved minimums (aircraft category or aircraft type).

**APPROACH CHART LEGEND — EU-OPS 1 AERODROME OPERATING MINIMUMS (AOM)**

Standard		STRAIGHT-IN LANDING RWY 10					LOC (GS out)		CIRCLE-TO-LAND 2	
CAT IIIA	ILS CAT II RA 105'	CAT I			DA(H)		Prohibited South of rwy, when LF(R)-6A active		W/o Local ATS 3	
DH 50'	DA(H) 656'(100')	DA(H) 756'(200')			830'(274')					
		FULL	Limited	ALS out		ALS out	Max Kts	MDA(H) — VIS	MDA(H) — VIS	
C	RVR 200m	RVR 300m 1	RVR 350m	RVR 750m	RVR 1200m	RVR 750m	180	1190' (634') 2400m	1530' (974') 2400m	
D							205	1290' (734') 3600m	1600' (1044') 3600m	

1 Operators applying U.S. Ops Specs: Autoland or HGS required below RVR 350m.  
 2 Circling height based on rwy 10 displ thresh elev of 556'. 3 NIGHT: NOT AUTHORIZED.

**AERODROME MINIMUMS LISTING**

On customer request, the minimums may be made available on a minimums listing page. The listings are indexed as 10-9S, 20-9S, etc. This listing is an interim solution until all affected approach and airport charts are converted to the new minimums.

**EDCM/RLI**

  
 21 SEP 08 **(10-9S)**
**Standard**  
**KAMENZ, EUROPEAN UNION**  
**MAY BE INTL**

STRAIGHT-IN RWY		A	B	C	D
29L	ILS 1	5087'(223') R550m	5087'(223') R550m	5087'(223') R550m	5087'(223') R550m
	ALS out	R1200m	R1200m	R1200m	R1200m
	LOC	NOT APPLICABLE			
	VOR DME 2	5510'(646') R1500m	5510'(646') R1500m	5510'(646') C2300m	5510'(646') C2300m
	ALS out	R1500m	R1500m	C2400m	C2400m
	NDB DME	5510'(646') C2500m	5510'(646') C2500m	5510'(646') C2700m	5510'(646') C2700m
	ALS out	C3200m	C3200m	C3400m	C3400m
29R	VOR DME 2	5810'(948') R1500m	5810'(948') R1500m	5810'(948') C2400m	5810'(948') C2400m
	ALS out	R1500m	R1500m	C2400m	C2400m
	NDB DME	5810'(948') C3800m	5810'(948') C3800m	5810'(948') C4000m	5810'(948') C4000m
	ALS out	C4500m	C4500m	C4700m	C4700m

1 Missed apch climb gradient mim 4.0%

2 Continuous Descent Final Approach

CIRCLE-TO-LAND	100 KT	135 KT	180 KT	205 KT
Not authorized North of airport	5870'(950') 1500m 3	5770'(950') 1600m 3	6380'(1460') 2400m 3	6380'(1460') 3600m 3

3 or higher minimums of preceding straight-in approach

**TAKE-OFF RWY 11L/R, 29L/R**

LVP must be in Force		
	RCLM (DAY only) or RL	NIL (DAY only)
A		
B	250m	500m
C		
D	300m	



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**APPROACH CHART LEGEND — EU-OPS 1 AERODROME OPERATING MINIMUMS (AOM)****DEPICTION OF EU-OPS AOM IN CASE OF EXISTING STATE MINIMUMS**

If State minimums are officially published, the depiction of AOM may differ from the standard depiction where all values are expressed as RVR or CMV.

- a. If RVR/CMV and VIS are charted together, the RVR value is compulsory. If no RVR is reported, the VIS has to be used without conversion.
- b. No prefix is charted if RVR/CMV and VIS is identical. The reported RVR is compulsory. If no RVR is reported, the VIS has to be used without conversion.
- c. If only VIS is charted, the VIS has to be used without conversion.