SUBJECT: PC-12 COMPLIANCE TO CAT.OP.MPA.303: LANDING DISTANCE AT TIME OF ARRIVAL

To all Customers, Operators and Service Centers:

Date: Aug 10/21

Effectivity: All PC-12 aircraft.

This Service Letter is issued to inform that from 12th of August 2021 onwards the European Commercial Air Transport (CAT) Operations regulation CAT.OP.MPA.303 becomes effective and requires all manufacturers (Original Equipment Manufacturer (OEM)) to provide performance information for the assessment of the Landing Distance at the Time of Arrival (LDTA), based on CAT.OP.MPA.303.

The ICAO Global Reporting Format (GRF) is a globally-harmonized methodology for runway surface condition assessment resulting in consistent use of the Runway Condition Code (RWYCC) reported to pilots before arrival. The LDTA promulgated by the EASA CAT.OP.MPA.303 can be used globally, enhancing safe approach and landing based on the latest meteorological runway condition.

The PC-12 is classified as a Performance Class B aircraft.

Definition of LDTA:
Landing distance at the time of arrival refers to a landing distance that is achievable during normal operations based on landing performance data and associated procedures determined for the prevailing conditions at the time of landing:

- LDTA is unfactored landing distance.
- LDTA is based on (at least):
  - Operational Airborne Distance
  - Brake action related to Runway Condition Code (RWYCC)
  - Speed increment at the threshold (if any)
  - Correction for Temperature and Slope.

PC-12 Published Data:

- PC-12 Information Leaflet, No 02400, Revision 02 - Mar 09, 2020, PART 2, has performance data generated accordingly to AC-25-32 and gives Operational Runway Condition Assessment Matrix (RCAM), Runway Condition Codes (RCC) and landing distance factors table (Table 22 and Table 23)
- These tables were generated following the AC-25-32 Time of Arrival Landing Performance Assessment (TALPA)
- The landing distance factors presented in the tables are corrected for Temperature and Slope (dedicated columns)
- They present landing distance factors for landing with and without thrust reverse available
- Accordingly, to CAT.OP.MPA.303 Performance Information for the Assessment of the LDTA - Supplementary DATA - (b), the info leaflet developed in accordance with FAA AC25-32 can be used to demonstrate compliance with this requirement.

New CAT.OP.MPA.303 LDTA Regulation:
In order to comply with the CAT.OP.MPA.303 LDTA, and with the Runway Condition Code requirements, the PC-12 operators shall add 15% of margin to the required landing distances published in the Information Leaflet mentioned above (No. 02400, Rev.2 or later), since the landing distance factors included in the Information Leaflet do not take into account the new margin.

Operators that require additional information should contact their authorized Pilatus Service Center, or Pilatus Customer Support on www.pilatus-aircraft.com → contact us

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Attachment: Extract of Rules for Air Operations (Latest Issue to date).

[applicable from 12 August 2021 – Commission Implementing Regulation (EU) 2020/1176]

AMC1 CAT.OP.MPA.301 Approach and landing conditions — helicopters

ED Decision 2021/005/R

IN-FLIGHT DETERMINATION OF THE CONDITION OF THE FATO

The in-flight determination of the final approach and take-off area (FATO) suitability for a safe approach, landing or missed approach should be based on the latest available meteorological or runway condition report, preferably no more than 30 minutes before the expected landing time.

[applicable from 12 August 2021]

CAT.OP.MPA.303 In-flight check of the landing distance at time of arrival – aeroplanes

Regulation (EU) 2019/1387

(a) No approach to land shall be continued unless the landing distance available (LDA) on the intended runway is at least 115 % of the landing distance at the estimated time of landing, determined in accordance with the performance information for the assessment of the landing distance at time of arrival (LDTA) and the approach to land is performed with performance class A aeroplanes that are certified in accordance with either of the following certification specifications, as indicated in the type-certificate:

(1) CS-25 or equivalent;

(2) CS-23 at level 4 with performance level “High speed” or equivalent.

(b) For performance class A aeroplanes other than those referred to in point (a), no approach to land shall be continued, except in either of the following situations:

(1) the LDA on the intended runway is at least 115 % of the landing distance at the estimated time of landing, determined in accordance with the performance information for the assessment of the LDTA;

(2) if performance information for the assessment of the LDTA is not available, the LDA on the intended runway at the estimated time of landing is at least the required landing distance determined in accordance with point CAT.POL.A.230 or point CAT.POL.A.235, as applicable.

(c) For performance class B aeroplanes, no approach to land shall be continued, except in either of the following situations:

(1) the LDA on the intended runway is at least 115 % of the landing distance at the estimated time of landing, determined in accordance with the performance information for the assessment of the LDTA;

(2) if performance information for the assessment of the LDTA is not available, the LDA on the intended runway at the estimated time of landing is at least the required landing distance determined in accordance with point CAT.POL.A.330 or point CAT.POL.A.335, as applicable.

(d) For performance class C aeroplanes, no approach to land shall be continued, except in either of the following situations:

(1) the LDA on the intended runway is at least 115 % of the landing distance at the estimated time of landing, determined in accordance with the performance information for the assessment of the LDTA;

(2) if performance information for the assessment of the LDTA is not available, the LDA on the intended runway at the estimated time of landing is at least the required landing distance determined in accordance with point CAT.POL.A.430 or point CAT.POL.A.435, as applicable.

(e) Performance information for the assessment of the LDTA shall be based on approved data contained in the AFM. When approved data contained in the AFM are insufficient in respect of the assessment of the LDTA, they shall be supplemented with other data which are either determined in accordance with the applicable certification standards for aeroplanes or determined in line with the AMCs issued by the Agency.

(f) The operator shall specify in the OM the performance information for the assessment of the LDTA and the assumptions made for its development, including other data that, in accordance with point (e), may be used to supplement that contained in the AFM.

[applicable from 12 August 2021 – Commission Implementing Regulation (EU) 2020/1176]

AMC1 CAT.OP.MPA.303 In-flight check of the landing distance at time of arrival — aeroplanes

ED Decision 2021/005/R

ASSESSMENT OF THE LDTA BASED ON DISPATCH CRITERIA

(a) The required landing distance for dry runways, determined in accordance with CAT.POL.A.230(a), contains adequate margin to fulfil the intent of the assessment of the landing distance at time of arrival (LDTA) on a dry runway, as it includes allowance for the additional parameters considered in that calculation.

(b) The required landing distance for wet runways also contains adequate margin to fulfil the intent of the assessment of the LDTA on such runways with specific friction-improving characteristics, as it includes allowance for the additional parameters considered in that calculation.

(c) When at the time of arrival the runway is dry or is a wet runway with specific friction-improving characteristics and the overall conditions, including weather at the aerodrome and runway condition, have been confirmed as not changed significantly compared to those assumed at the time of dispatch, the assessment of the LDTA may be carried out by confirming that the assumptions made at the time of dispatch are still valid.

(d) Before taking any performance credit for the assessment of the LDTA for runways with friction-improving characteristics, the operator should verify that the runways intended to be operated on are maintained to the extent necessary to ensure the expected improved friction characteristics.

[applicable from 12 August 2021]

GM1 CAT.OP.MPA.303 In-flight check of the landing distance at time of arrival — aeroplanes

ED Decision 2021/005/R

GENERAL

The assessment of the LDTA begins with the acquisition of the latest available weather information and the RCR. The information provided in the RCR is divided in two sections:

(a) The 'aircraft performance' section which contains information that is directly relevant in a performance computation.

(b) The 'situational awareness' section which contains information that the flight crew should be aware of for a safe operation, but which does not have a direct impact on the performance assessment.

The 'aircraft performance' section of the RCR includes a runway condition code (RWYCC), the contaminant type, depth and coverage for each third of the runway.

The determination of the RWYCC is based on the use of the runway condition assessment matrix (RCAM); however, the presentation of the information in the RCAM is appropriate for use by aerodrome personnel trained and competent in assessing the runway condition in a way that is relevant to aircraft performance.

It is the task of the aerodrome personnel to report the appropriate RWYCC in order to allow the flight crew to assess the landing performance characteristics of the runway in use. When no RWYCC is available in winter conditions, the RCAM provides the flight crew with a combination of the relevant information (runway surface conditions: state and/or contaminant or pilot report of braking action (AIREP)) in order to determine the RWYCC.

Table 1 below is an excerpt of the RCAM and permits to carry out the primary assessment based on the reported contaminant type and depth, as well as on the OAT.

Table 1: Association between the runway surface condition and the RWYCC based on the reported contaminant type and depth and on the OAT

Runway surface condition	Surface condition descriptor	Depth	Notes	RWYCC
Dry		n/a		6
Wet	Damp (any visible dampness)	3 mm or less	Including wet and contaminated runways below 25 % coverage in each runway third	5
	Wet			
Slippery wet				3
Contaminated	Compacted snow	Any	At or below OAT – 15 °C 3	4
			Above OAT – 15 °C 3	3
	Dry snow	3 mm or less		5
		More than 3 mm up to 100 mm	Including when any depth occurs on top of compacted snow	3

		Any	On top of ice	02
	Frost1	Any		5
	Ice	Any	In cold and dry conditions	1
	Slush	3 mm or less		5
		More than 3 mm up to 15 mm		2
	Standing water	3 mm or less		5
		More than 3 mm up to 15 mm		2
		Any	On top of ice	02
	Wet ice	Any		02
	Wet snow	3 mm or less		5
		More than 3 mm up to 30 mm	Including when any depth occurs on top of compacted snow	3
		Any	On top of ice	02

Note 1: Under certain conditions, frost may cause the surface to become very slippery.

Note 2: Operations in conditions where less-than-poor braking action prevails are prohibited.

Note 3: The runway surface temperature should preferably be used where available.

A primary assessment may have to be downgraded by the aerodrome operator based on an AIREP of lower braking action than the one typically associated with the type and depth of contaminant on the runway or any other observation.

Upgrading a RWYCC 5, 4, 3 or 2 determined by the aerodrome operator from the observed contaminant type is not allowed.

A RWYCC 1 or 0 maybe be upgraded by the aerodrome operator to a maximum of RWYCC 3. The reason for the upgrade will be specified in the 'situational awareness' section of the RCR.

When the aerodrome operator is approved for operations on specially prepared winter runways, in accordance with Annex V (Part-ADR.OPS) to Regulation (EU) No 139/2014, the RWYCC of a runway that is contaminated with compacted snow or ice, may be reported as RWYCC 4 depending upon a specific treatment of the runway. In such cases, the reason for the upgrade will be specified in the 'situational awareness' section of the RCR. When the aerodrome operator is approved for specially prepared winter runways, in accordance with Annex IV (Part-ADR.OPS) to Regulation (EU) No 139/2014, a runway that is contaminated with compacted snow or ice and has been treated according to specific procedures, will normally be reported as a maximum of RWYCC 4 SPECIALLY PREPARED WINTER RUNWAY. If the aerodrome operator is in doubt about the quality of the surface, it will be reported with a lower RWYCC, but the runway descriptor will still be SPECIALLY PREPARED WINTER RUNWAY. The term DOWNGRADED will be used in the 'situational awareness' section of the RCR. A SPECIALLY PREPARED WINTER RUNWAY has no loose contaminant; hence no contaminant drag on acceleration, and stopping performance corresponding to the reported RWYCC.

Performance information for the assessment of the LDTA correlates the aircraft performance with the RWYCC contained in the RCR, hence the calculation will be based on the RWYCC of the intended runway of landing.

[applicable from 12 August 2021]

GM2 CAT.OP.MPA.303 In-flight check of the landing distance at time of arrival — aeroplanes

ED Decision 2021/005/R

RUNWAY CONDITION CONSIDERATIONS

When available for the portion of the runway that will be used for landing, the following elements are relevant for consideration:

(a) RWYCC;

(b) expected runway conditions (contaminant type and depth);

(c) other information contained in the RCR related to the following elements:

(1) width of the runway to which the RWYCC applies if less than the published runway width;

(2) reduced runway length;

(3) drifting snow on the runway;

(4) loose sand on the runway;

(5) chemical treatment on the runway;

(6) snowbanks on the runway;

(7) snowbanks on taxiways;

(8) snowbanks adjacent to the runway;

(9) taxiway conditions;

(10) apron conditions;

(11) State approved and published use of measured friction coefficient;

(12) plain language remarks;

(d) AIREP of braking action.

AIRCRAFT PERFORMANCE CONSIDERATIONS

The following elements may impact landing distance calculations:

(a) runway slope;

(b) aerodrome elevation;

(c) wind;

(d) temperature;

(e) aeroplane mass and configuration;

(f) approach speed at threshold;

(g) eventual adjustments to the landing distance, such as autoland; and

(h) planned use of available and operative aeroplane ground deceleration devices.

AUTOBRAKE USAGE

While autobrakes are a part of the aeroplane's landing configuration, the landing distance assessment at the time of arrival is not intended to force a higher-than-necessary autobrake selection. For operations where the RWYCC is 6 or 5, if the manual braking distance provides at least 15 % safety

margin, then the braking technique may include a combination of autobrakes and manual braking even if the selected autobrake landing data does not provide a 15 % safety margin.

GENERAL

Background information and further guidance on the in-flight check of the LDTA may be found in ICAO Doc 10064 'Aeroplane Performance Manual'.

[applicable from 12 August 2021]

GM3 CAT.OP.MPA.303 In-flight check of the landing distance at time of arrival — aeroplanes

ED Decision 2021/005/R

RCR, RWYCC AND RCAM

A detailed description of the RCR format and content, the RWYCC and the RCAM may be found in Annex V (Part-ADR.OPS) to Regulation (EU) No 139/2014. Further guidance may be found in the following documents:

(a) ICAO Doc 9981 'PANS Aerodromes';

(b) ICAO Doc 4444 'PANS ATM';

(c) ICAO Doc 10064 'Aeroplane Performance Manual'; and

(d) ICAO Circular 355 'Assessment, Measurement and Reporting of Runway Surface Conditions'.

[applicable from 12 August 2021]

AMC1 CAT.OP.MPA.303(e) In-flight check of the landing distance at time of arrival — aeroplanes

ED Decision 2021/005/R

PERFORMANCE INFORMATION FOR THE ASSESSMENT OF THE LDTA — APPROVED DATA

Approved data for the assessment of the LDTA contained in the AFM should be developed in accordance with AMC 25.1592, or equivalent.

PERFORMANCE INFORMATION FOR THE ASSESSMENT OF THE LDTA — SUPPLEMENTARY DATA

When approved data for the assessment of the LDTA contained in the AFM is insufficient, the content of the AFM should be supplemented with one of the following sets of data, provided by the aircraft manufacturer or the type certificate holder (TCH) or an organisation approved under Part 21 and having the relevant privileges within the scope of its organisation approval:

(a) Data for the assessment of the LDTA produced for aeroplanes not having CS 25.1592 or equivalent in their certification basis. Such data may be presented in terms of runway surface conditions, pilot-reported braking actions, or both, and should include at least:

  (1) an operational airborne distance;

  (2) the range of braking actions as related to the RWYCC;

  (3) the effect of speed increments over threshold;

  (4) the effect of temperature; and

  (5) the effect of runway slope.

When data is provided only in terms of pilot-reported braking actions, instructions should be provided on how to use such data to carry out an assessment of the LDTA in terms of a runway surface condition description.

(b) Data developed in accordance with FAA AC 25-32.

(c) Data for wet runways corrected to meet the criteria of LDTA, as listed under point (a), in accordance with a methodology provided by the aircraft manufacturer or the type certificate holder (TCH) or an organisation approved under Part 21 and having the relevant privileges in the scope of its organisation approval.

(d) Data for contaminated runways developed in compliance with CS 25.1591 or equivalent, which were in use before the implementation of the LDTA, and are corrected to meet the criteria of the LDTA, as listed under point (a), in accordance with a methodology provided by the aircraft manufacturer or the TCH or an organisation approved under Part 21 and having the relevant privileges within the scope of its organisation approval.

PERFORMANCE INFORMATION FOR THE ASSESSMENT OF THE LDTA — DATA DETERMINED BY EASA

When there is no data available for the assessment of the LDTA, performance information for the assessment of the LDTA may be determined by applying the following method:

(a) Correction factors may be applied to the certified landing distances on dry runway published in the AFM for turbojet-powered aeroplanes and turbopropeller-powered aeroplanes.

(b) For this purpose, the landing distance factors (LDFs) from Table 1 below may be used:

Table 1: LDFs

Runway condition code (RWYCC)	6	5	4	3	2	1
Runway descriptors	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1
Turbojet without reverse	1.67	2.6	2.8	3.2	4.0	5.1
Turbojet with all reversers operating	1.67	2.2	2.3	2.5	2.9	3.4
Turboprop (see Note 2)	1.67	2.0	2.2	2.4	2.7	2.9

Note 1: Runway descriptors may be found in the RCAM for each RWYCC or braking action.

Note 2: These LDFs apply only to modern turboprops with efficient disking drag. For older turboprops without adequate disking drag, use the LDFs for turbojet without reverse.

Note 3: The LDFs can apply to any type of anti-skid system, i.e. fully-modulating, quasi-modulating or on-off system.

(1) To find the LDTA, multiply the AFM (dry, unfactored) landing distance by the applicable LDFs from Table 1 above for the runway conditions existing at the time of arrival. If the AFM landing distances are presented as factored landing distances, then that data needs to be adjusted to remove the applicable dispatch factors applied to that data before the LDFs from Table 1 above are applied.

Note 1: Dispatch factors that are sometimes applied in AFMs to landing distances in order to provide factored distances to operators are not intended to be cumulated with the LDFs for the calculation of the LDTA.

(2) The LDFs given in Table 1 above include a 15 % safety margin and an air distance representative of normal operational practices. They account for variations of temperature up to international standard atmosphere (ISA) + 20 °C, runway slopes between –2 % and +2 %, and an average approach speed increment of 5 up to 20 kt. They may not be conservative for all configurations in case of unfavourable combinations of these parameters.

[applicable from 12 August 2021]

CAT.OP.MPA.305 Commencement and continuation of approach

Regulation (EU) No 965/2012

(a) The commander or the pilot to whom conduct of the flight has been delegated may commence an instrument approach regardless of the reported RVR/VIS.

(b) If the reported RVR/VIS is less than the applicable minimum the approach shall not be continued:

(1) below 1 000 ft above the aerodrome; or

(2) into the final approach segment in the case where the DA/H or MDA/H is more than 1 000 ft above the aerodrome.

(c) Where the RVR is not available, RVR values may be derived by converting the reported visibility.

(d) If, after passing 1 000 ft above the aerodrome, the reported RVR/VIS falls below the applicable minimum, the approach may be continued to DA/H or MDA/H.

(e) The approach may be continued below DA/H or MDA/H and the landing may be completed provided that the visual reference adequate for the type of approach operation and for the intended runway is established at the DA/H or MDA/H and is maintained.

(f) The touchdown zone RVR shall always be controlling. If reported and relevant, the midpoint and stopend RVR shall also be controlling. The minimum RVR value for the midpoint shall be 125 m or the RVR required for the touchdown zone if less, and 75 m for the stopend. For aircraft equipped with a rollout guidance or control system, the minimum RVR value for the midpoint shall be 75 m.