

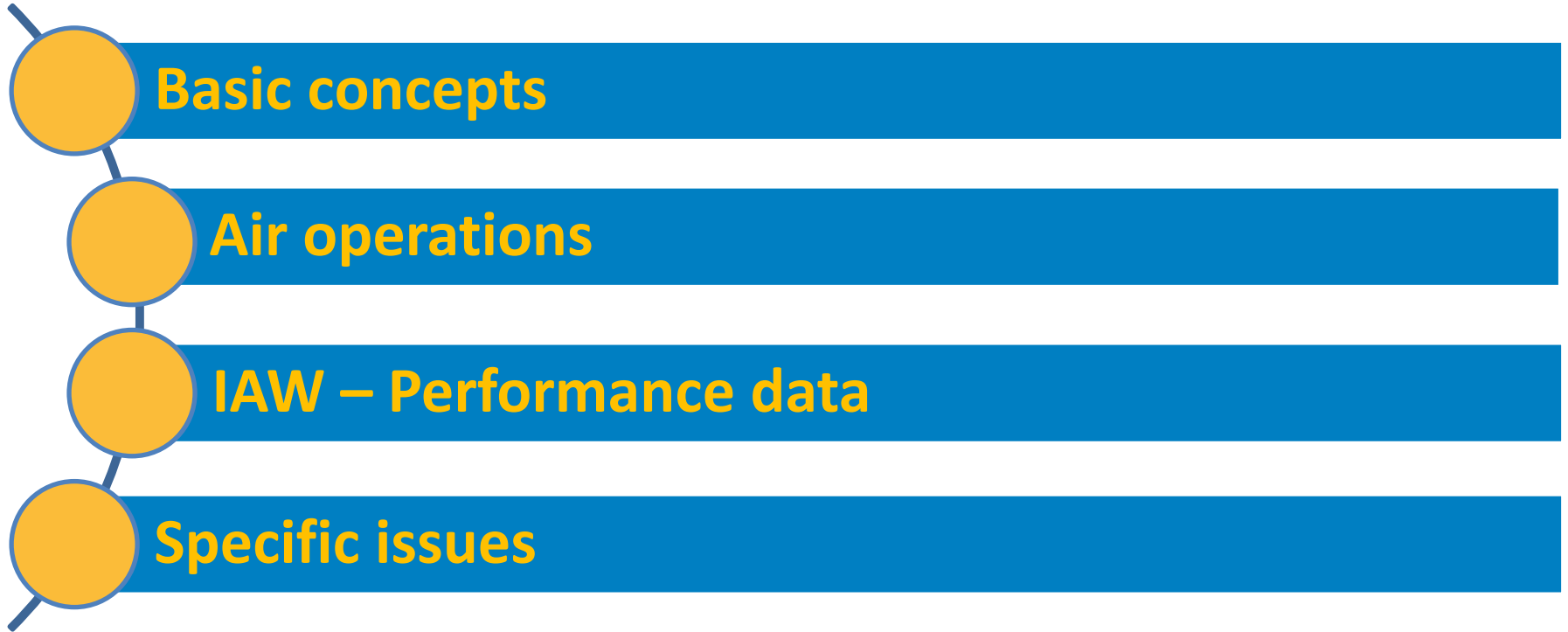
EASA Regulations on GRF implementation (OPS and IAW)

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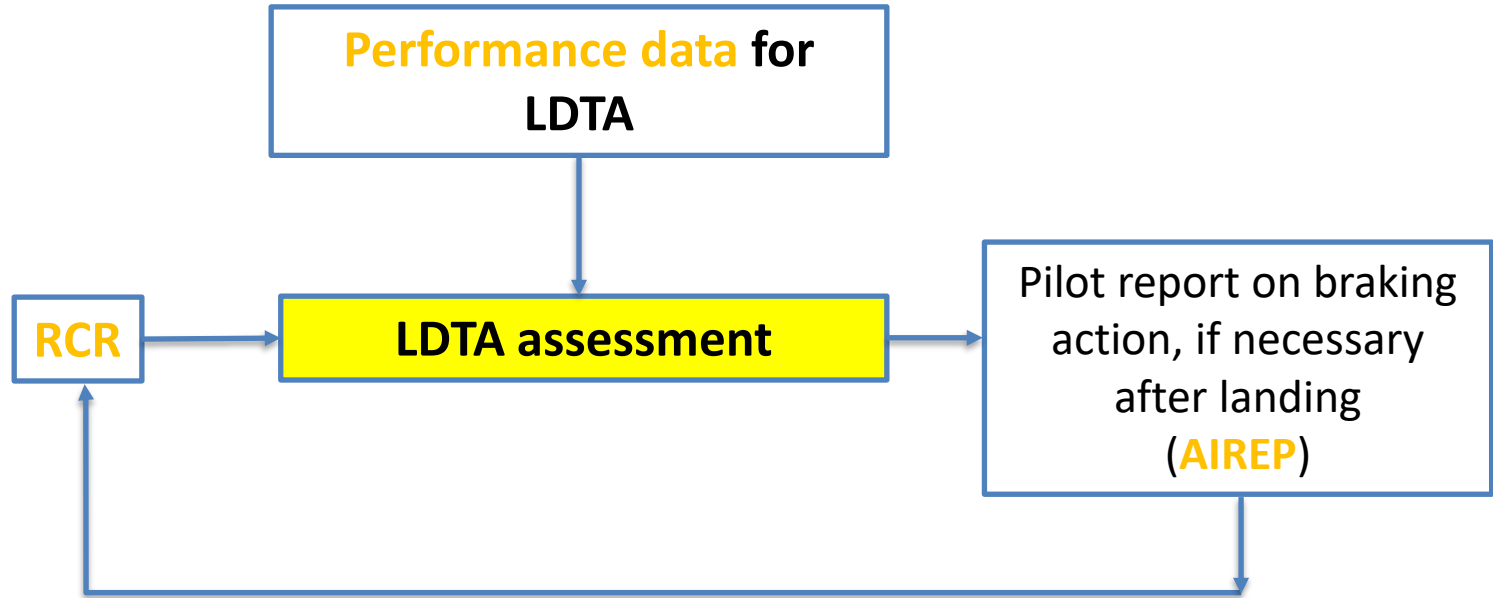
EASA GRF Webinar - 10 March 2021

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Overview



Basic concepts



Basic concepts

→ Annex I of the Air Ops Regulation contains:

→ Definitions and terminology relevant to the GRF in line with the ADR Regulation

→ Definition of the **LDTA**:

“landing distance at time of arrival (LDTA)” means a landing distance that is achievable in normal operations based on landing performance data and associated procedures determined for the prevailing conditions at the time of landing “

→ LDTA is unfactored

→ LDTA is based at least on:

→ operational airborne distance, braking action related to RWYCC, speed increments at threshold, temperature, slope

Air Operations

Air operations, LDTA (Regulation (EU) 2019/1387 – CAT.OP.MPA.300 & 303)

CAT.OP.MPA.303 – LDTA assessment (Certain P Class A)

- (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.**

- Flexibility provided for lower aeroplane categories
- Performance data for the LDTA assessment either based on approved data or supplementary data
- Operators must specify in the OM the methodology in use

Air operations, LDTA

AMC1 CAT.OP.MPA.300(a)

- The assessment of the LDTA should be carried out when weather report and RCR are obtained, usually around top of descent
- When meteorological conditions are rapidly evolving the PIC should consider how much deterioration of the runway condition may be tolerated and then monitor the evolution of the actual conditions during the approach

AMC1 CAT.OP.MPA.303

- For dry runways and wet runways having specific friction improved characteristics the LDTA assessment may be reduced to the confirmation of the dispatch calculation
- Before taking any credit for LDTA on runways having specific friction improved characteristics the operator should verify that the runway is being properly maintained

Air operations, LDTA GM2 CAT.OP.MPA.303

RUNWAY CONDITION CONSIDERATIONS

- RWYCC
- contaminant type and depth
- Other info in the RCR
- AIREPs

AUTOBRAKE USAGE

- THE LDTA assessment is not intended to force a higher than necessary autobrake selection
- For RWYCC 6 and 5 the braking technique may include a combination of autobrakes and manual braking

PERFORMANCE CONSIDERATIONS

- runway slope;
- aerodrome elevation;
- wind;
- temperature;
- aeroplane mass and configuration;
- approach speed at threshold;
- eventual adjustments to the landing distance, such as autoland; and
- planned use of available and operative aeroplane ground deceleration devices

Air operations, AIREP (Regulation (EU) 2019/1387 – CAT.OP.MPA.311)

CAT.OP.MPA.311 – pilot reports

- Whenever the runway braking action encountered during the landing roll is not as good as that reported by the aerodrome operator in the runway condition report (RCR), the commander shall notify the air traffic services (ATS) by means of a special air-report (**AIREP**) as soon as practicable.

- AIREP format and terminology in accordance with **ICAO Doc 4444** — ‘PANS ATM’.
- Correlation between terminology and RWYCC

Air operations, AIREP (Regulation (EU) 2019/1387 – CAT.OP.MPA.311)

AIREP (braking action)	Description	RWYCC
N/A		6
GOOD	Braking deceleration is normal for the wheel braking effort applied AND directional control is normal.	5
GOOD TO MEDIUM	Braking deceleration OR directional control is between good and medium.	4
MEDIUM	Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced.	3
MEDIUM TO POOR	Braking deceleration OR directional control is between medium and poor.	2
POOR	Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced.	1
LESS THAN POOR	Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain.	0

AIREPs should be transmitted to the ATC, in accordance with the following specifications, as applicable:

- (a) Good braking action is reported as **“BRAKING ACTION GOOD”**
- (b) Good to medium braking action is reported as **“BRAKING ACTION GOOD TO MEDIUM”**
- (c) Medium braking action is reported as **“BRAKING ACTION MEDIUM”**
- (d) Medium to poor braking action is reported as **“BRAKING ACTION MEDIUM TO POOR”**
- (e) Poor braking action is reported as **“BRAKING ACTION POOR”**
- (f) Less than poor braking action is reported as **“BRAKING ACTION LESS THAN POOR”**

Air operations, AIREP (Regulation (EU) 2019/1387 – CAT.OP.MPA.311)

- AIREPs are an essential element of the GRF construction, useful to validate the reporting system and support the work of the aerodrome personnel.
- Caution should however be exercised as a “Less Than Poor” AIREP may lead to a runway closure.
- It is acceptable to report on a more coarse scale of “Good”, “Medium” and “Poor”.
- It is possible to report also braking actions that are better than expected.
- “Aircraft-generated” reports may be used provided that:
 - The origin of the report is also communicated
 - The PIC has the possibility to amend such reports based on its judgement

Air operations, FC Training

(AMC1 CAT.OP.MPA.303 & CAT.OP.MPA.311 and GM1 CAT.OP.MPA.303 & CAT.OP.MPA.311 and)

- Flight crew members should be trained on:
 - the use of the RCR,
 - on the use of performance data for the assessment of the LDTA
 - on reporting braking action using the AIREP format.
- An example of training syllabus is provided for this purpose

Air operations, reference documents

- Annex V (Part-ADR.OPS) to Regulation (EU)
- ICAO Doc 9981 — ‘PANS Aerodromes’;
- ICAO Doc 4444 — ‘PANS ATM’;
- ICAO Doc 10064 — Aeroplane Performance Manual;
- ICAO Circular 355 — Assessment, Measurement and Reporting of Runway Surface Conditions

Performance Data

Performance data

AMC1 CAT.OP.MPA.303(e) – performance data

- PERFORMANCE INFORMATION FOR THE ASSESSMENT OF LDTA
 - **Approved data** (iaw new CS-25-1592 on landing)
 - **Supplementary data** (list of alternatives when approved data are not available)
 - **Generic Factors** (as per ICAO Doc 10064, APM/TALPA when no data at all are available)

Performance data

Approved data (CS 25.1592)

- Uncouple take-off performance (kept in CS 25.1591) from landing performance
- Consistency with new RWY surface descriptors and correlation between runway codes and braking action
- Assumptions for time or arrival assessment (on all rwy conditions)
- Performance data for dispatch on dry and wet runways remain as per CS-25.125
- Performance data for dispatch on “wet slippery” and contaminated runways under CS-25.1592

Performance data

Supplementary data

- LDTA criteria should be met: operational airborne distance, correlation with RWYCC, effect of speed increments over threshold, effect of temperature, effect of rwy slope.
- Data in accordance with FAA AC-32
- Existing data for wet runways corrected in order to meet the LDTA criteria
- Existing data for contaminated runways (e.g. in accordance with CS 25.1591 at an amendment before the implementation of the LDTA) corrected in order to meet the LDTA criteria

Performance data

Generic landing distance factors (LFD) (ICAO Doc 10064/TALPA ARC)

Runway condition code (RWYCC)	6	5	4	3	2	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

Specific issues

Specific issues

→ Dispatch considerations

- The LDTA may, in some cases, and in particular on wet or contaminated runways, exceed the landing distance considered at time of dispatch.
- The requirements for dispatch remains those in CAT.POL.A.230/330/430 and CAT.POL.A.235/335/435
- However when the conditions at time of arrival are expected to be marginal, either in terms of weather, runway condition or runway length it is a good practice to carry out at time of dispatch a preliminary calculation of the LDTA

Specific issues

→ Specially prepared winter runways

- The aerodrome must be approved in accordance with Regulation (EU) 139/2014
- A runway contaminated with compacted snow or ice may be upgraded up to a maximum of RWYCC 4
- Along with the RCR, information is provided in the RCR (runway descriptor, situational awareness section)
- Performance Credit for contaminated runways may be taken at dispatch (CAT.POL.A.235.(b)(2)) if additional information is included in the AFM.

Thank you very much for your attention

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