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CHANGES TO PAVEMENT STRENGTH CLASSIFICATION SYSTEM - TRANSITION FROM ACN/PCN TO NEW ACR/PCR

1. INTRODUCTION

- 1.1 This AIC provides advice on the transition of the aerodrome pavement classification system from the Aircraft Classification Number (ACN)/Pavement Classification Number (PCN) values to the new Aircraft Classification Rating (ACR) and Pavement Classification Rating (PCR) values introduced by an amendment to International Civil Aviation Organization (ICAO) *Annex 14 Volume 1* applicable on 28 November 2024.

2. BACKGROUND

- 2.1 ICAO introduced a new system for measuring and reporting pavement strength values with an applicable date of 28 November 2024.
- 2.2 The transition will commence on 28 November 2024 when the change occurs at all international aerodromes (including 'restricted use' international), controlled aerodromes and certified aerodromes with scheduled Part 121 operations based on mainland Australia and within the Australian external territories.
- 2.3 This change will be gradually introduced with the final date for transition of certified aerodromes being 26 November 2025.

- 2.4 The changes still require an aircraft operator to assess the rating of their aircraft classification against the aerodrome's published pavement strength rating to identify any discrepancy for their operations. If the ACR is equal to, or less than, the PCR for the runway then there are no operational restrictions. If the ACR exceeds the runway PCR then coordination with the aerodrome operator will be required to assess whether the aerodrome operator/owner will accept the aircraft type and whether the aircraft type will be subject to any restrictions i.e. weight, tyre pressure.

3. APPLICABILITY

- 3.1 The transition from ACN/PCN to ACR/PCR is only required for runways at certified aerodromes that are intended for aircraft of Maximum Take-off Weight (MTOW) greater than 5700KG.

Note: Uncertified aerodromes are not required to publish PCR values, however, are encouraged to do so if a runway supports aircraft with an MTOW greater than 5700KG.

- 3.2 As a consequence of sub-paragraph 3.1. the ACR for aircraft of an MTOW that is equal to, or less than 5700KG, is not required.
- 3.3 For aerodromes with mixed pavements, (i.e. intended for use by aircraft under 5700KG and those over 5700KG) aerodrome operators need not publish the PCR for the runways that will solely be utilised by aircraft that have an MTOW equal to, or less than, 5700KG.
- 3.4 For runways that only support aircraft of MTOW less than or equal to 5700KG, the MTOW and maximum tyre pressure (MPa) is required.

4. AIRCRAFT CLASSIFICATION CHANGES

- 4.1 Every aircraft with an MTOW greater than 5700KG currently has an ACN value that represents the relative damage caused to the aerodrome pavement's subgrade.
- 4.2 The calculation of an ACN is dependent upon the aircraft:
- a) weight,
 - b) tyre pressure,
 - c) the subgrade category of the relevant pavement (which is available within AIP ERSA or from the aerodrome operator), and
 - d) pavement type (rigid or flexible).

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- 4.3 The ACN will be replaced with an ACR. The responsibility for transition from ACN to ACR falls to the aircraft manufacturer and the operator. The aircraft manufacturer provides the official computation of an ACR value. Computation of the ACR requires detailed information on the operational characteristics of the aircraft, such as maximum aft center of gravity, maximum ramp weight, wheel spacing, and tyre pressure.
- 4.4 The main differences between ACN and ACR relate to the basis on which the equivalent wheel load is determined, and include:
- a) standard tyre pressure,
 - b) standard pavement structures,
 - c) subgrade categories,
 - d) number of aircraft passes, and
 - e) calculated indicator of relative damage.
- 4.5 Aircraft operators are recommended to engage now with their aircraft manufacturers to obtain ACR data. ICAO has a software program available for the calculation of ACR.
- 4.6 Aircraft operators will notice that the new ACR numeric values are obviously much larger than the existing ACN values for the same aircraft. This will be of assistance in differentiating between the old and new classification systems.

5. PAVEMENT CLASSIFICATION CHANGES

- 5.1 Pavement classifications are determined and published by the aerodrome operator. The pavement classification systems are pavement management tools that allow aircraft operators to determine when they can operate on a pavement without restriction or must seek prior permission (from a pavement strength perspective, noting prior permission may still be required for other reasons).
- 5.2 The new PCR will be set by the aerodrome operator and published in AIP ERSAs to enable aircraft operators to make the same pavement restriction assessment.

5.3 Aerodrome operators will notice that the new PCR numeric values are obviously much larger than the existing PCN values for the same pavement. This will be of assistance in differentiating between the old and new classification systems. The PCR values will be identified through the application of technical or usage information to enable calculation of a value. For a more detailed explanation of the calculation of PCR, refer to

[AC 139.C-07 v1.0 - Strength rating of aerodrome pavements \(casa.gov.au\)](https://www.casa.gov.au/AC139C-07-v1.0)

5.4 Aerodrome operators must consider their capacity and experience to undertake PCR assessments e.g. access to pavement construction records after previous changes of ownership over time. If the aerodrome operator does not have suitably qualified and experienced staff, they are recommended to obtain the services of a suitably qualified person to assist with the pavement assessment process.

6. INFORMATION MANAGEMENT

6.1 The pavement classification rating will be reported for runways in AIP ERSA in the following format:

- a) PCR (value)
- b) Pavement type (Flexible – F, or Rigid - R)
- c) Subgrade Category (A - High Strength, B - Medium Strength, C - Low Strength, D – Ultra-low Strength)
- d) Maximum allowable tyre pressure:
 - i) using the 4-code system:
 - W (unlimited) - no tyre pressure limit.
 - X (high) - maximum tyre pressure of 1.75MPa.
 - Y (medium) - maximum tyre pressure of 1.25MPa.
 - Z (low) - maximum tyre pressure of 0.5MPa, or
 - ii) a specified maximum tyre pressure (MPa).
- e) Pavement evaluation method used (T – Technical, U – Usage).

Note: Omission of pavement strength rating indicates that the RWY is 'Unrated'.

6.2 Currently, a PCN is reported within the AIP ERSA in a five-part format:

PCN 108/F/D/W/T or **PCN 108/F/D/1.08MPa/T**

6.3 Following the transition, the PCR will be reported in the same way with a minor but essential difference – note the much larger numeric value under the new system.

PCR 1096/F/D/W/T or **PCR 1096/F/D/1.08MPa/T**

Note: Subgrade categories may also change if the PCR value assessment is completed using a technical evaluation by a pavement specialist.

7. TRANSITION PERIOD

7.1 The transition process has been coordinated through an industry working group established by CASA.

7.2 The applicable date for the beginning of the change to PCR is 28 November 2024. To allow a smooth transition, the following timeline has been established:

- All certified aerodromes may publish their PCR by PERM NOTAM from 28 November 2024 onwards.
- The PCR detail published via PERM NOTAM from 28 November 2024 will be incorporated in the AIP ERSA with effect from 12 June 2025 onwards.

Note: All runways without published PCR details as of 27 November 2025 will be published as 'UNRATED'.

8. CANCELLATION

8.1 This AIC will self-cancel on 202511261600 UTC.

9. DISTRIBUTION

9.1 Airservices Australia website only.