FIJI AERONAUTICAL INFORMATION CIRCULAR

CIVIL AVIATION AUTHORITY OF FIJI
ISO 9001:2015 Certified

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OPS

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

1. INTRODUCTION

1.1. This AIC provides guidance 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.

Annex 14 to the Convention of International Civil Aviation, Aerodromes, contains a standard that requires member states to publish information on the strengths of all airport pavements in their own Aeronautical Information Publication.

2. BACKGROUND

2.1. The new method is more accurate as it determines the impact that each aircraft produces on a pavement. The expected benefits are optimised use of pavement, reduced maintenance needs and costs, and a reduction of greenhouse gas emissions through a well-managed pavement life cycle.

2.2. Similar to the current ACN-PCN, the new ACR-PCR method is intended solely for the publication of pavement strength data in the AIP. The ACR values were calculated by the aircraft manufacturers and made available

either in the dedicated airport planning manuals or through a dedicated software. The PCR values will have to be determined by the aerodrome operators for all pavements intended for aircraft of apron mass greater than 5700 kg and afterwards reported to the aeronautical information services providers for their publication in the aeronautical information publication (AIP).

2.3. The reported PCR will indicate that an aircraft with an ACR equal to or less than the reported PCR may operate on the pavement subject to any limitations (e.g. tyre pressure)

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. ICAO introduced a new system for measuring and reporting pavement strength values with an applicable date of 28 November 2024.However Fiji will transition to fully adopt this classification system as detailed in para 9 of this Circular.

3.2. 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 5700 kg. 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 the sub-paragraph.

3.3. The ACR for aircraft of an MTOW that is equal to, or less than 5700KG, is not required.

3.4. 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 utilized by aircraft that have an MTOW equal to, or less than, 5700KG.

3.5. 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).

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 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 advised to engage with their aircraft manufacturers to obtain ACR data. ICAO provides a software program for calculating ACR.

4.6. Aircraft operators will observe that the new ACR numeric values are significantly larger than the existing ACN values for the same aircraft. This difference will help distinguish 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 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 the AIP Fiji Islands to enable aircraft operators to make the same pavement restriction assessment.

5.3. Aerodrome operators will notice that the new PCR numeric values are much larger than the existing PCN values for the same pavement. This will assist 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 the calculation of a value. For a more detailed explanation of the calculation of PCR, refer to:150/5335-5D, Standardized Method of Reporting Airport Pavement Strength - PCR, 29 April 2022

5.4. Aerodrome operators must evaluate their capacity and experience to conduct PCR assessments, including access to construction records, especially after changes in ownership over time. If the aerodrome operator lacks suitably qualified and experienced staff, it is recommended to engage a qualified professional to assist with the pavement assessment process.

6. INFORMATION MANAGEMENT

6.1. The pavement classification rating will be reported for runways in the Fiji AIP 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. BENEFITS OF THE NEW ACR-PCR METHOD

7.1. Unlike the current ACN-PCN method, the new ACR-PCR method is not based on the critical aircraft. Instead, it considers all aircraft intended to use a given pavement, taking into account their actual lateral deviation from the pavement centerline."

7.2. By doing so, the reported PCR will more accurately reflect the amount of damage each aircraft causes to the pavement, considering factors such as operating weight, full landing gear geometry, individual tire load, and tire pressure.

7.3. The expected benefits include optimized pavement use, reduced maintenance needs and costs, and a reduction in greenhouse gas emissions through a well-managed pavement life cycle.

8. LIMITATIONS OF THE NEW ACR-PCR METHOD

8.1. Similar to the existing ACN-PCN, the new ACR-PCR method is intended solely for the publication of pavement strength data in the AIP Fiji Islands.

8.2. It is not intended as a pavement design or pavement evaluation procedure, nor does it restrict the methodology used to design or evaluate a pavement structure.

8.3. There is no mathematical correlation between the previous ICAO pavement strength reporting (ACN-PCN) and the new ICAO ACR-PCR system. In other words, there is no formula to convert the current PCN into the PCR.

9. TRANSITION PERIOD FOR FIJI

9.1. The implementation date of the ACR and PCR method in Fiji has been deferred to a later date of 27th November 2025 to ensure that all necessary data have been collected and process followed to allow a synchronised application for aerodromes and adhere to the Aeronautical Information Service publication process.

9.2. The transition process has been coordinated through an industry working group established by CAAF.

9.3. Introducing the new methodology for aeronautical data to be originated by the aerodrome operator, by updating their own respective aerodrome manual prior submitting to Fiji Airports – Aeronautical Information Services for publication in the AIP Fiji Islands.

9.4. Below is the agreed action plan for Fiji to Implement.

ID	ACTION	ENTITY RESPONSIBLE	TARGETED IMPLEMENTATION DATE	ACTUAL IMPLEMENTATION DATE	REMARKS
ACR-PCR 1	Transpose of ICAO State Letter to the SD AD. (Amendment to the Annex 14)	Civil Aviation Authority of Fiji (CAAF)	Nov 30, 2024,		In progress
ACR-PCR 2	Identify/designate ACR-PCR Focal Points in all stakeholders, e.g. aerodrome operators, ANSPs,	CAAF Fiji Airports Private Aerodrome Operators Fiji Airways	Sep 30, 2024	Nov 14, 2024	Completed

	aircraft operators, and pilots.	Fiji Link Northern Air Air Laucala FA-AISP			
ACR-PCR 3	Review ICAO provisions and guidance issued by other relevant aviation organizations.	CAAF – GSD ** Maibulu	Nov 30, 2024	Mar 07, 2025	Completed
ACR-PCR 4	Facilitate ACR-PCR initial training in	Aerodrome Operator – Fiji Airport	Nov 30, 2024	Oct 17, 2024	Completed
ACR-PCR 5	All certified Aerodrome to publish their PCR by NOTAM	Fiji Airport Private Aerodrome Operators FA- AIS CAAF	Jun 12, 2025		In progress
ACR-PCR 6	PCR published as NOTAMS to migrate to the AIP & AIP SUPP	Fiji Airports – AIS AIP-RG	Sep 04, 2025		In progress

Note: All runways without published PCR details as of 26th November 2026 will be published as 'UNRATED'

10. CANCELLATION

The AIC will cancel when all data for the certified aerodrome has been incorporated into the AIP Fiji.