

Summary of changes

Assimilated Regulation Reg (EU) 139/2014

The introduction of the new definitions is required to reflect the ICAO transition from Aircraft Classification Number / Pavement Classification Number (ACN/PCN) to Aircraft Classification Rating and Pavement Classification Rating (ACR/PCR) in relation to the reporting of pavement bearing strength which became applicable on 28th November 2024.

Amendment to the Aerodrome compliance monitoring period in AMC1 ADR OR.D.005 (b)(11) Management system is required in order to align with the Authority Requirement detailed in AMC1 ADR.AR.B.005(a)(4) Management system. The oversight period is proposed to change from 36 months to 48 months. No impact to industry has been identified given the current 36-month audit cycle concludes in 2025.

Alignment of Assimilated Regulation (EU)139/2014 to reflect the UK differences to ICAO Annex 14 SARPS. The alignment of text relates to the removal of the 3m offset option for runway edge, stopway and taxiway lighting.

Removal of Deviation Acceptance and Action Documents (DAAD) reference in AMC1 ADR.AR.B.020(c) due to the withdrawn of DAAD as a result of the expiry of the law supporting DAAD in December 2024.

Summary of CAP 168 changes.

Oversight text reordering and paragraph heading revisions.

Removal of ACN/PCN definitions due to the ICAO applicability of ACR/PCR as of 28th November 2024.

Addition of text relating to runway pavement overlays – runway ramping, it includes the requirement for 3.6 m transverse stripe where a temporary threshold is located during resurfacing when a runway is returned temporarily to operational status. This provision removes the UK ICAO difference and aligns with CAP 168 with Assimilated Regulation (EU)139/2014 and ICAO SARPS.

Helicopter visual aids

Revised text is added in order to align with ICAO and Assimilated Regulation(EU)139/2014.

- (1) The revision includes the heliport H identification marking minimum requirements.
- (2) Also included is an updated to the requirement for helicopter night landing training the NATO T (proportional T) is replaced by a lit aiming point. The NATO T can continue to be used where installed and should be replaced when the system is upgraded to the lit aiming point.
- (3) Text is also introduced for a helicopter aiming point requirement where a FATO and TLOF and not coincidental

Details of proposed amendments to Assimilated Regulation 139/2014

New text is highlighted grey and text to be removed is ~~strikethrough~~.

Definitions for terms used in Annex II to IV of Assimilated Regulation 139/2014

[...]

~~Aircraft classification number (ACN)~~ means the number expressing the relative effect of an aircraft on a pavement for a specified standard subgrade category.

aircraft classification rating (ACR) means the number expressing the relative effect of an aircraft on a pavement for a specified standard subgrade category.

[...]

~~'Pavement classification number (PCN)~~ means a number expressing the bearing strength of a pavement for unrestricted operations

'Pavement classification rating (PCR)' means a number expressing the bearing strength of a pavement.

[...]

AMC1 ADR OR.D.005 (b)(11) Management system

[...]

(e) Compliance monitoring — audit scheduling

- (3) After that, the aerodrome operator should consider the results of its safety (risk) assessments and of its past compliance monitoring activities, in order to adapt the calendar period within which an audit or a series of audits should be conducted, to cover the whole aerodrome, its management system key processes, procedures and its operation in a manner, and at intervals set out in the aerodrome manual. This calendar period should be consistent with the relevant CAA's oversight planning cycle and may be increased, up to ~~36~~ 48 months, in coordination with the CAA, provided that there are no level 1 findings, and subject to the aerodrome operator having a good record of rectifying findings in a timely manner.

[...]

CS ADR-DSN.M.675 Runway edge lights

[...]

(c) Location and positioning:

[...]

- (2) Runway edge lights should be placed along the edges of the area declared for use as the runway. ~~or outside the edges of the area at a distance of not more than 3m.~~

CS ADR-DSN.N.685 Runway end lights

[...]

b) Location and positioning:

- (1) Runway end lights should be placed on a line at right angles to the runway axis as near to the end of the runway as possible. ~~and, in any case, not more than 3 m outside the end.~~

CS ADR-DSN M 705 Stopway lights

[...]

- (2) At least four uni-directional stopway lights equally spaced across the width of the stopway should be provided across the end of a stopway on a line at right angles to the stopway axis as near to the end of the stopway as possible. ~~and, in any case, not more than 3 m outside the end.~~

CS ADR- DSN M 720 Taxiway lights

[...]

(b)

[...]

- (4) The lights should be located as near as practicable to the edges of the taxiway, runway turn pad, holding bay, de-icing/anti-icing facility, apron or runway, etc., ~~or outside the edges at a distance of not more than 3 m.~~

AMC1 ADR.AR.B.020(c) Record keeping

[...]

- ~~(4) documentation related to Deviation Acceptance and Action Documents (DAAD) if relevant;~~
- ~~(5)~~ (4) documentation related to exemptions or derogations granted;
- ~~(6)~~ (5) aeronautical studies and safety assessments;
- ~~(7)~~ (6) designs of the aerodrome;
- ~~(8)~~ (7) declarations made by the applicant;

- (9) ~~(8)~~ current version of an aerodrome manual, and evidence of its evaluation;
and
(10) ~~(9)~~ approvals granted

[...]

CAP 168 Amendments

Amendments will include the removal of the term aircraft classification number (ACN) and pavement classification number (PCN) as indicated below. (CAP168 includes the definition of terms for ACR/PCR). Text where ACN or PCN appears will be amended accordingly.

Movement area bearing strength (Applicable until 27 November 2024.)

~~3.111 — Pavement forming part of the movement area needs to be of sufficient strength to allow aircraft to operate without risk of damage either to the pavement or to the aircraft. Pavements subject to overload conditions will deteriorate at an increasing rate depending upon the degree of overload. To control this, it is necessary to classify both pavement and aircraft under a system whereby the~~

~~3.112 — load bearing capacity of the pavement and the loads imposed by the aircraft can be compared. The method used in the UK is the Aircraft Classification Number — Pavement Classification Number (ACN/PCN) method.~~

Operational requirements

~~3.113 — All pavements forming part of the movement area should be of adequate bearing strength for the types of aircraft expected to use the aerodrome.~~

~~3.114 — All pavements should be regularly examined by a suitably qualified person. For further details see appendix 3F. Any pavements which have been subjected to overload conditions should be closely monitored by suitably qualified staff for a period of several weeks or until it is clear that no rapid deterioration of the pavement has been triggered.~~

Reporting pavement bearing strength

~~3.115 — The ACN/PCN method has been developed by ICAO as an international method of reporting the bearing strength of pavements which leaves States the option to use national methods for design and evaluation. Accordingly, the UK will continue to use criteria developed from the Load Classification Group (LCG) system for pavement design and evaluation, but the results will be converted into units of the ACN/PCN method.~~

~~3.116 — The ACN/PCN method of classifying the bearing strength of~~

pavements differs from the LCG method in that emphasis is shifted from direct evaluation of the pavement itself to the load imposed on the pavement by the aircraft. In this respect, the load rating of the aircraft is most significantly affected by the sub-grade support strength of the pavement. ACNs are therefore numbers giving a relative load rating of the aircraft on pavements for certain specified sub-grade strengths. ACN values for most aeroplanes have been calculated by ICAO and are published in Aeronautical Information Publications. The PCN is also a number which represents the load-bearing strength of the pavement in terms of the highest ACN which can be accepted on the pavement for unrestricted use.

- 3.117 — In order to calculate a PCN using the current UK criteria for design and evaluation, the normal method is to identify the aircraft which has the highest Load Classification Number (LCN) which can be accepted on the pavement for unrestricted use. This aircraft is designated as the critical aircraft for the pavement. To convert to the ACN/ PCN method, the ACN of the critical aircraft is notified as the PCN. This PCN value indicates that aircraft with ACNs appropriate to the pavement type and specified sub-grade that are equal to or less than the reported PCN can use the pavement without restriction.
- 3.118 — As an alternative, a PCN can be identified and reported without a technical evaluation of the pavement by means of an assessment of the results of aircraft using the pavement. Providing the type and sub-grade support strength of the pavement are known, the ACN of the most critical aircraft successfully using the pavement can be reported as the PCN.
- 3.119 — A PCN is reported in a five part format. Apart from the numerical value, notification of the pavement type (rigid or flexible) and the sub-grade support category is also required. Additionally, provision is made for the aerodrome authority to limit the maximum allowable tyre pressure. A final indication is whether the assessment has been made by a technical evaluation or from past experience of aircraft using the pavement.

Overload operations

- 3.120 — Individual aerodrome authorities are free to decide their own criteria for permitting overload operations as long as pavements remain safe for use by aircraft. The PCN value does include a safety factor so that a 10% increase of ACN

over PCN is generally acceptable for pavements that are well consolidated and in good condition.

Unpaved surfaces

- 3.121 — The bearing strength of unpaved surfaces cannot usefully be classified. The basic material, its degree of compaction, the quality of the sub-grade, and the drainage characteristics are examples of factors that can cause considerable daily variation in bearing strength.
- 3.122 — After prolonged rain, the condition of an unpaved surface may become such that either further use by aircraft would result in serious damage to the surface or, due to the difficulty of assessing bearing strength, the surface can no longer be considered suitable for take-off and landing. Where such conditions are likely to occur, a close watch should be kept on the surface and, if in the judgement of the aerodrome operator such action appears necessary, use of the aerodrome should be restricted or the aerodrome closed altogether.

Published details

- 3.123 — Details of individual aerodrome ACN or PCN values are published in the AD 2 section of the UK AIP. See AD 2.12—Runway Physical Characteristics, Column 4.
- 3.124 — Details of the five elements of the code and an example are shown below:

Example [Letters in brackets refer to explanations]

56	F	B	X	T
(a)	(b)	(c)	(d)	(e)

1. The PCN number. Refer to aircraft manufacturer for individual aircraft equivalents.
2. Pavement type for ACN-PCN determination: Code
 - R Rigid pavement
 - F Flexible pavement
3. Sub-grade strength category: Code
 - A High strength: characterised by K 150 Nm/m^3 and representing all K values above 120 Nm/m^3 for rigid pavements, and by $\text{CBR}^4 = 15$ and representing all CBR values above 13 for flexible pavements.
 - B Medium strength: characterised by K

~~80 Nm/m³ and representing a range in K of 60 to 120 Nm/m³ for rigid pavements, and by CBR = 10 and representing a range in CBR of 8 to 13 for flexible pavements.~~

- ~~▪ C — Low strength: characterised by K~~

~~40 Nm/m³ and representing a range in K of 25 to 60 Nm/m³ for rigid pavements, and by CBR = 6 and representing a range in CBR of 4 to 8 for flexible pavements.~~

- ~~▪ D — Ultra low strength: characterised by K~~

~~20 Nm/m³ and representing all K values below 25 Nm/m³ for rigid pavements, and by CBR = 3 and representing all CBR values below 4 for flexible pavements.~~

~~4. Maximum allowable tyre pressure category: Code~~

- ~~▪ W Unlimited: no pressure limit~~
- ~~▪ X High: pressure limited to 1.50 MPa~~
- ~~▪ Y Low: pressure limited to 1.00 MPa~~
- ~~▪ Z Very low: pressure limited to 0.50 MPa~~

~~5. Evaluation method: Code~~

- ~~▪ T — Technical evaluation: Representing a specific study of the pavement characteristics and application of pavement behaviour technology.~~
- ~~▪ U — Using aircraft experience: Representing knowledge of the specific type and mass of aircraft satisfactorily being supported under regular use~~

~~4 Nm/m³ means Newton metres per cubic metre which = 1 pascal, a unit of pressure.~~

~~5 CBR means California Bearing Ratio: a simple penetration test developed to evaluate the strength of road subgrades. The use of block pavers on aerodrome movement areas~~

~~3.125 — It is recommended that pavers should normally only be used to surface the following categories of aircraft pavements:~~

- ~~1. aircraft stands;~~
- ~~2. low speed taxiways not subject to significant jet blast or propeller wash;~~
- ~~3. aircraft maintenance areas not subject to significant jet blast or propeller wash;~~
- ~~4. helicopter pads.~~

~~3.126 — Block pavers should normally not be used to surface the following categories of aircraft pavements:~~

- ~~1. runways;~~
- ~~2. areas where aircraft engines are run at high thrust values;~~
- ~~3. high speed taxiways.~~

~~3.127 — Should aerodrome management wish to depart from these recommendations, they should first discuss this with their aerodrome inspector.~~

CAP 168 Chapter 1 reordering of text.

General requirements for the grant of a licence

[...]

For these purposes the CAA's Inspectors will visit the aerodrome and determine the extent to which the aerodrome, its facilities, equipment and operational organisation meet the licensing requirements. Following the initial grant of a licence, the CAA's Inspectors will visit each aerodrome periodically as part of their audit/inspection programme. The Inspectors will assess compliance with requirements, audit the management of safety, and assess the competence of those responsible for safety. Normally, prior notice will be given to the holder of the licence, but inspections may take place without such prior notice. Inspectors will be 'authorised persons' as defined in the Air Navigation Order and normally will be allocated responsibility for certain aerodromes so that a helpful continuity will develop and improve the value of contacts between them and the management of the aerodrome.

[...]

AGL for helicopter night landing training

Where helicopter night landing training is conducted at an aerodrome, a six-light helicopter lit aiming point (see figure 6.1) may be provided. The lights of the aiming point should be omni-directional, white, and useable from a distance of 4 nm.

When positioned on an aerodrome with a fixed wing runway also in use, the aiming point should be sited so as to permit safe parallel approaches, to avoid obstructions and to minimise noise nuisance. Alignment lighting may be used, where no less than 3 white lights on either side of the triangle spaced between 1.5m to 3m, in the preferred approach directions are installed.

Temporary installations may be provided using removable lights where no marking is provided. Care should be taken to ensure the FATO is suitably graded and has suitable load bearing to receive an emergency landing. In all cases permanent installations with markings are recommended.

If provided, a lit aiming point must be notified to the CAA and included in the Permission to display.

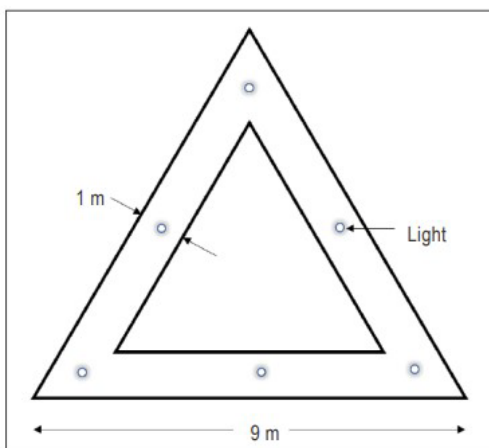


Figure 6.1 Helicopter Lit Aiming Point

Heliport Identification Marking

A white letter H as illustrated in figure 7.35A indicates of the Heliport Identification Marking identifying part of the maneuvering area to be used only for the Final Approach and Take-off (FATO) of helicopters.

For runway type FATOs the heliport identification marking dimensions should be multiplied by a factor of 3.

On a FATO which contains a Touchdown and Liftoff Surface (TLOF), the heliport identification marking should be located in the centre of the TLOF

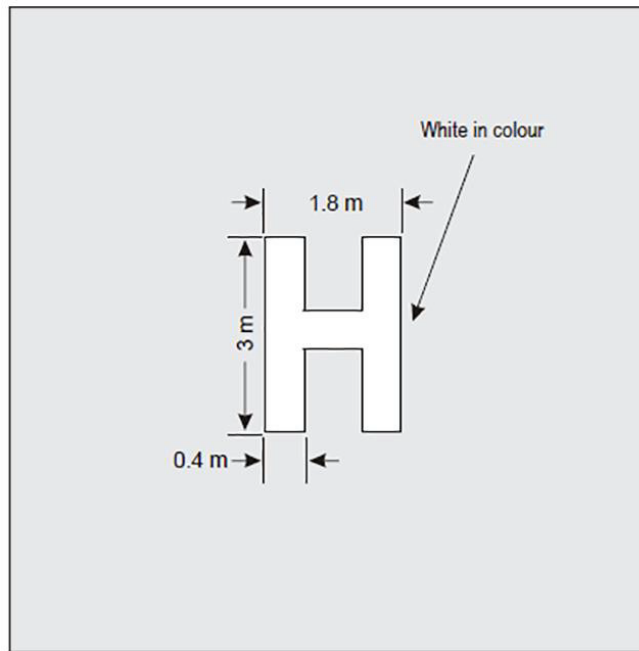


Figure 7.35A Helicopter Identification Marking

Helicopter Aiming point marking

A helicopter aiming point marking should be provided where a FATO and TLOF are not coincidental. The aiming point is not the intended location for the touchdown of the helicopter and should include a hover taxi route to a TLOF.

Dashed perimeter markings should be provided where the boundaries of the FATO are not self-evident.

The aiming point should be lit with 3 white lights in the points of the triangle, and 3 white lights in the Centrepoint's of the bars. The perimeter may be lit in white.

Where other markings exist such as taxiway centrelines they should be broken and not cross the FATO area or otherwise disturb the heliport marking.

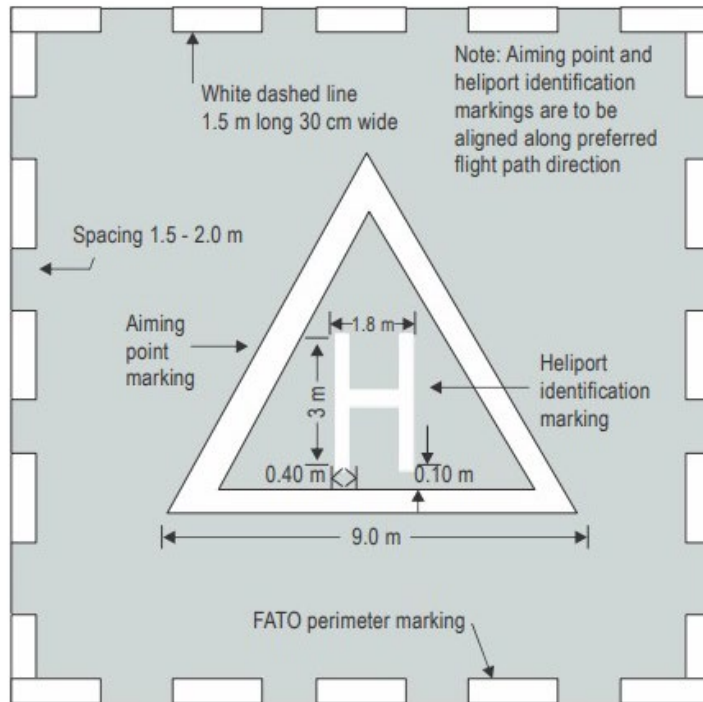


Figure 7.35B Helicopter Aiming Point Marking

Oversight Programme

Following the initial grant of an aerodrome licence the CAA shall:

1. establish and maintain an oversight programme to verify continued compliance with the requirements set out in this publication, and the conditions of the aerodrome licence.

apply an appropriate oversight planning cycle (OPC), not exceeding 48 months.

The oversight programme will include within each OPC, audits and inspections, including unannounced inspections, as appropriate.

The oversight programme and OPC will reflect the safety performance of the aerodrome operator and risk exposure of the aerodrome.

Licensing Action

This section is a revision of the paragraph heading only.

Runway pavement overlays - runway ramping

The aerodrome operator should ensure that when a runway is to be returned temporarily to an operational status before resurfacing is complete and before operations recommence, the surface should be inspected to ensure that temporary ramps have been constructed as follows;

The longitudinal slope of the temporary ramp, measured with reference to the existing runway surface or previous overlay course, should be:

1. 0.5 to 1.0 % for overlays up to and including 5 cm in thickness; and
2. not more than 0.5 % for overlays more than 5 cm in thickness.

Before a runway being overlaid is returned to a temporary operational status, a runway centre line marking conforming to the applicable specifications should be provided.

The location of any temporary threshold should be identified by a 3.6 m wide transverse stripe.