AUSTRALIA

AERONAUTICAL INFORMATION CIRCULAR (AIC)

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CIRCLING AREA GUIDANCE

1. INTRODUCTION

1.1 This AIC provides pilots and operators with information on the construction and use of circling areas, supporting upcoming changes to the *AIP ENR 1.5* circling area content in the March 2025 AIP amendment.

2. CONTENT

2.1 Circling approach fundamentals

2.1.1 The term circling area is used in Australia to describe the visual manoeuvring (circling) area as defined in the instrument approach standards set by the International Civil Aviation Organization (ICAO). While serving a similar operational purpose, Australia's circling area differs from the circling approach protection area described in the Federal Aviation Administration's (FAA) *Aeronautical Information Manual (AIM)* in terms of lateral dimensions and minimum obstacle clearance.

2.1.2 Visual manoeuvring, referred to as circling in Australian terminology, describes the phase of flight used to position an aircraft for landing on a runway that is not aligned for a straight-in approach.

2.1.3 A circling approach is a visual flight manoeuvre. Each situation is different because of variables such as aerodrome elevation, runway layout, final approach track, wind velocity and other meteorological conditions. Consequently, there is no common circling flight procedure that will cater for every situation.

2.1.4 Circling approaches inherently carry higher levels of risk compared to other types of approaches. This is largely due to the manoeuvring required at low altitudes and low airspeeds during the final segment, which increases the potential for loss of control or terrain collision. These risks are further exacerbated when circling approaches are conducted under marginal or reduced visibility conditions, demanding heightened situational awareness and concentration from pilots.

2.1.5 While circling approaches are sometimes necessary to facilitate airport traffic flow or to accommodate prevailing wind conditions, pilots may not always fully assess the associated risks before accepting such procedures. This can lead to unstabilised approaches.

2.1.6 In IMC, transitioning from instrument references to visual ground references during a circling approach can introduce additional challenges. For instance, the phenomenon of illusion of high speed may occur if pilots do not maintain consistent monitoring of their instruments during this critical phase.

2.1.7 Careful planning, evaluation of weather conditions, and adherence to stabilised approach criteria are essential to mitigate these risks and ensure safe circling approach operations. Prior to initiating a circling approach, ensure that it is the most appropriate course of action under the circumstances. Subsequently, thoroughly brief the approach procedure, develop a detailed execution plan, and critically assess any operational limitations that may impact its safe completion.

2.1.8 After initial visual contact, the runway environment should be kept in sight while the aircraft is kept within the visual manoeuvring area, and not below the MDA/H for circling. The runway environment includes features such as the runway threshold or approach lighting aids or other markings identifiable with the runway to assist visual manoeuvring.

2.1.9 The published circling MDA is the altitude at which an aircraft will maintain the minimum obstacle clearance required for its performance category (A, B, C, or D) within the circling area or the obstacle-assessed protection area.

2.2 Circling area lateral dimensions

2.2.1 The circling MDA is determined by obstacles within a specific geographic area around an aerodrome, known as the circling area.

2.2.2 The lateral dimensions for circling area obstacle assessment areas are developed by instrument flight procedure designers in accordance with the standards and criteria contained in *ICAO DOC 8168: Procedures for Air Navigation Services – Operations (PANS-OPS) Vol II.*

2.2.3 The lateral boundary of a circling area is determined by drawing an arc centred on the threshold of each usable runway and joining these arcs by tangents (Figure 1). The method of calculating the arc radius determined by the procedure designer includes the use of the following parameters:

a) the aircraft TAS at maximum IAS for circling for an aircraft performance category (see Table 1: AIP extract below), calculated at 1,000FT above the aerodrome elevation (therefore AD ELEV + 1,000FT),

SPEEDS FOR PROCEDURE IN KNOTS IAS					
ACFT CAT	**V(at)**	**Range of Speeds for Initial and Intermediate Approach**	**Range of Final Approach Speeds**	**Max Speeds for Visual Manoeuvring (Circling)**	**Max Speeds for Missed Approach**
A	< 91	90 - 150 (110*)	70 - 100	100	110
B	91 - 120	120 - 180 (140*)	85 - 130	135	150
C	121 - 140	160 - 240	115 - 160	180	240
D	141 - 165	185 - 250	130 - 185	205	265
E	166 - 210	185 - 250	155 - 230	240	275
H	N/A	70 - 120	60 - 90	N/A	90

Table 1: AIP extract on speeds for procedure in knots IAS

b) a tail wind of 25KT throughout the turn, and

c) 20° average achieved bank angle or the bank angle producing a turn rate of 3° per second, whichever is the lesser bank angle, and

d) ISA + 15°C.

2.3 Recommended operational practices

2.3.1 The amended March 2025 *AIP ENR 1.5* content includes indicative values for circling area radii at 1,000FT aerodrome elevation intervals. This information is provided solely to aid pilot understanding of the circling area concept and is not intended for pilot operational use.

2.3.2 Pilots are reminded that when conducting a circling approach, they must maintain continuous visual reference with the runway environment. Rather than planning to use the entire area within the circling area lateral boundary, the intent is for the aircraft to remain within the circuit area to ensure the use of normal traffic pattern procedures for the aircraft type. In doing so, this helps ensure an appropriate buffer between the aircraft and the circling area obstacle assessment area boundaries to account for unexpected events or momentary lapses in pilot judgement.

2.3.3 Pilots must be fully aware of the maximum circling IAS for each aircraft category when performing a circling approach. If it is necessary to operate at a speed more than the maximum circling IAS for an aircraft's category, the MDA for the next higher performance category should be used. This may occur with certain aircraft types operating in conditions such as strong or gusting wind, icing, or emergency/non-normal events.

2.3.4 If a pilot is using time-based techniques to execute certain manoeuvres, the time may need to be adjusted to account for the wind conditions. Pilots should also be aware of the effect of wind speed and direction on the groundspeed of the aircraft, which can affect the angle of bank required to attain the correct downwind spacing from the runway and the initiation and conduct of the base turn. Pilots must anticipate the effects of increased groundspeed when manoeuvring, especially during a downwind turn, where a higher groundspeed may result in an expanded turning radius. This can lead to inadvertent deviations beyond the protected circling area, as defined by instrument approach procedure design standards. Exceeding the boundaries of the circling area can place the aircraft in an environment where obstacle clearance is no longer assured, exposing the flight to uncharted risks, including obstacles that may not be visible to the crew.

2.3.5 One technique that can be used to position the aircraft correctly within the circling area is shown at Figure 2, however there are multiple other flightpath options when conducting circling approaches. It is critical that pilots exercise sound planning and judgment, and carefully evaluate current weather conditions and terrain information to ensure that the aircraft remains within the circling area. Pilots should discuss such techniques with their local instrument rating instructor or examiner.

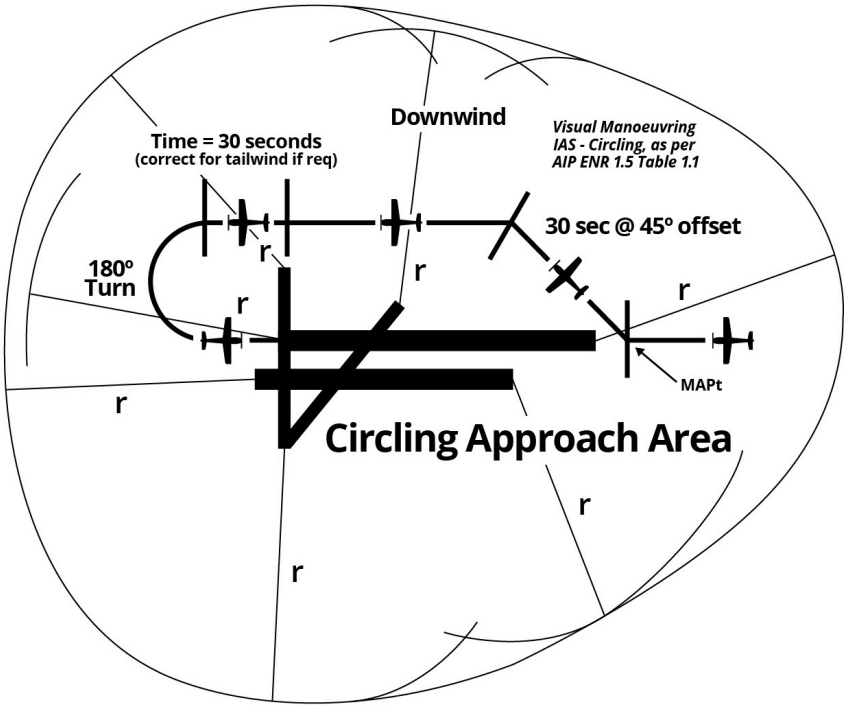

Figure 1: Example Visual Circling Obstacle Assessment Area

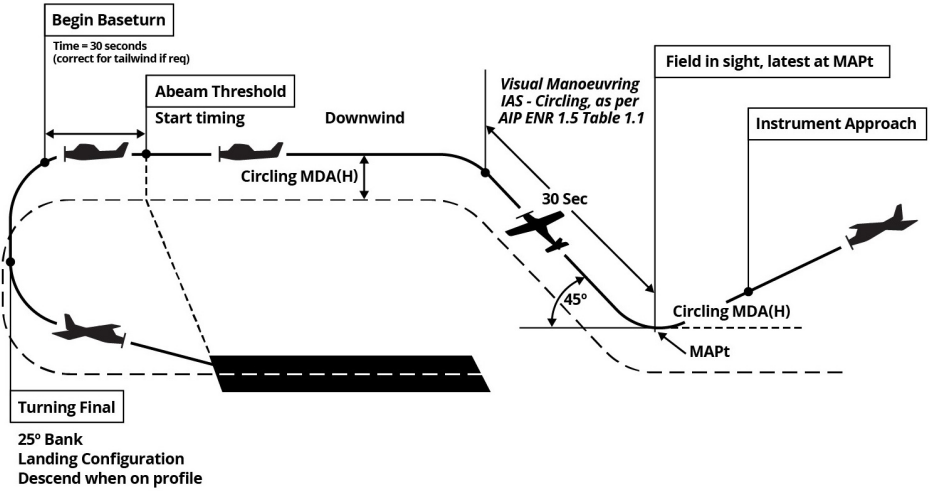

Figure 2: Typical Visual Circling Manoeuvre

3. REFERENCE

3.1 ICAO Doc. 8168 Vol I.

4. CANCELLATION

4.1 This AIC will be reviewed on or before 202503310600 UTC.

5. DISTRIBUTION

5.1 Airservices Australia website only.