

IFR Circling

Speed Restrictions

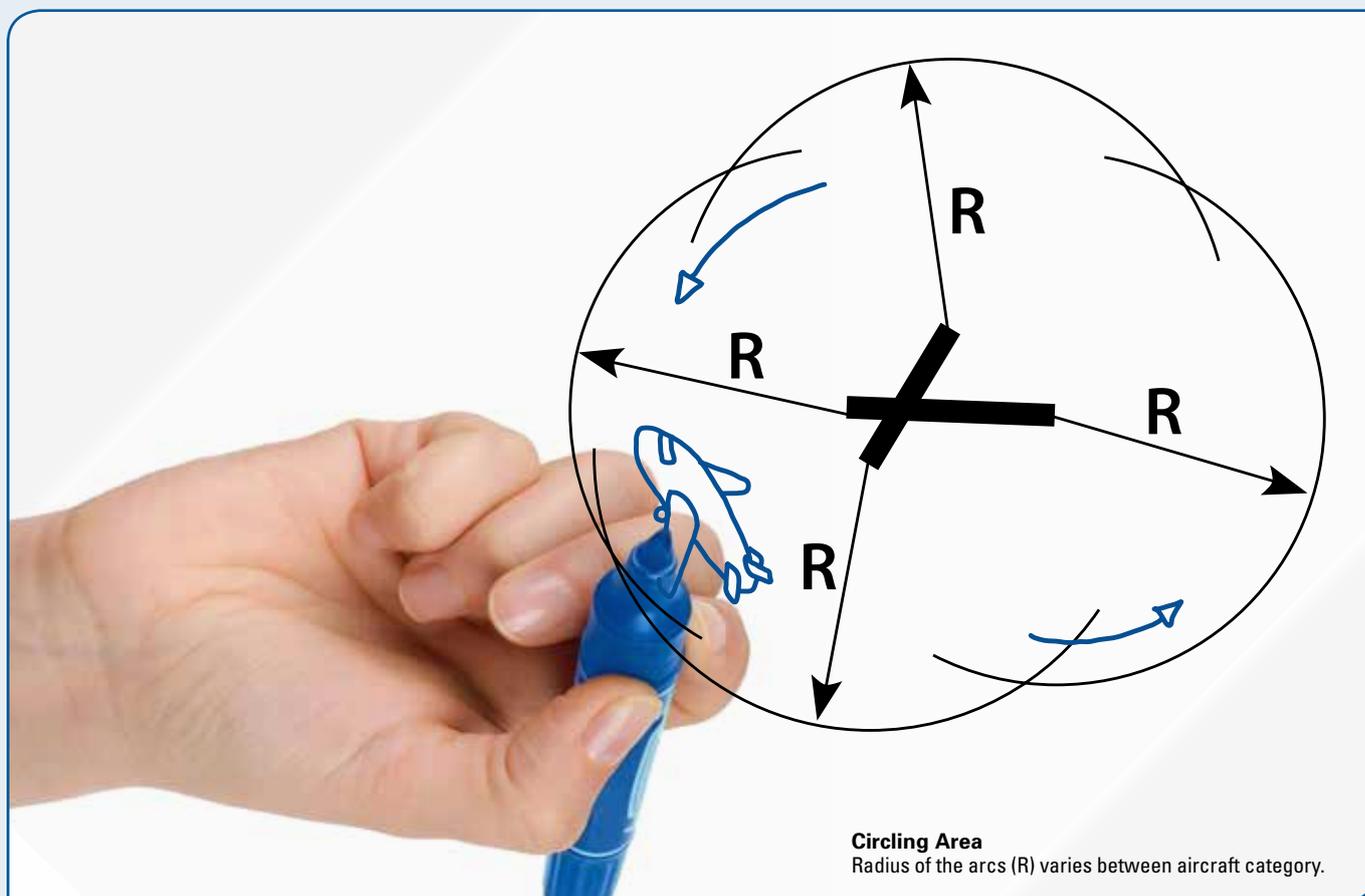


Photo: istockphoto.com/artproem

Some confusion exists in the IFR arena about circling speed restrictions and how they affect circling area dimensions. Pilots unaware of these nuances risk flying outside the protected area.

Visual manoeuvring (circling) is the term used to describe the phase of flight after an instrument approach has been completed. It brings the aircraft into position for landing on a runway which is not suitably located for a straight-in approach; when the runway doesn't meet the criteria for alignment, or the descent gradient cannot be met.

However, obstacles or prominent terrain within the vicinity of an aerodrome can complicate matters.

Where the procedure design organisation, and the CAA, determine that such hazards make the circling area MDA impractical, a maximum speed restriction may be imposed, relative to the performance category of the aircraft.

This speed reduction reduces the size of the circling radius, enabling a lower circling MDA and excluding any problematic

terrain or obstacles from the circling area. Circling aircraft are protected by the procedure, provided they are above the circling MDA, and don't fly outside the reduced circling radius.

Reduced radius circling areas are applicable at Hastings, Paraparaumu, Taupo, Timaru, Woodbourne, and Te Anau Manapouri.

AIP Amendment

There's a risk that pilots unaware of the reduced circling areas may fly outside the protected area.

GroupEAD's (Airways) Principal Designer, Mayank Bamola, has worked on the latest AIP Amendment.

"For years now, we've used speed reduction to avoid

obstacles in the circling area, but there's a feeling in industry that the circling radius is fixed, for example, a Cat-C circling radius is 4.2 NM.

"This isn't the case. When a speed restriction is in place, it reduces the arc radius."

Currently, reduced radius dimensions are not listed on the approach charts in the AIP. A proposed amendment in February 2016 will address this.

Where a circling procedure has indicated airspeed limitations lower than the standard circling speeds, the AIP approach charts will include a note specifying the maximum speed and the reduced radius, for example, Cat-C circling max IAS 160 kt. Circling area radius 3.5 NM.

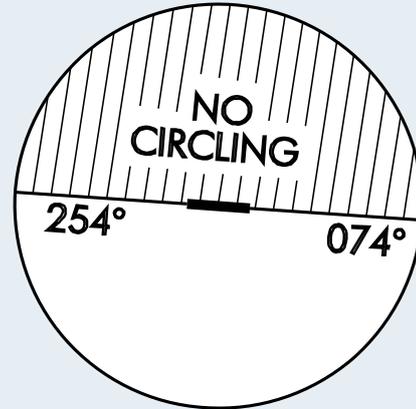
"No Circling"

In addition to speed restrictions, sections may be eliminated from a visual manoeuvring (circling) area – usually due to prominent terrain or obstacles in close proximity to an aerodrome. These sectors are annotated "No Circling" (see Figure 1).

Also remember that descent below the circling MDA can only occur when the pilot fulfills the conditions listed in rule 91.413 (c) *Operation below DA, DH, or MDA*.

Once a pilot begins descent below the circling MDA listed in the AIP, the obstacle protection offered by the circling procedure no longer exists, and the onus is on the pilot to maintain obstacle clearance visually.

Figure 1
Circling is prohibited in "No Circling" sectors.



Missed Approach

If a pilot loses sight of the runway while circling to land, the missed approach procedure associated with the previously flown instrument approach must be started. The transition to the missed approach will depend on the circling direction being flown, and the point at which visual reference to the runway was lost.

The missed approach should be initiated by a climbing turn within the circling area, towards the landing runway, to return to the circling altitude or higher. This should be immediately followed by interception and execution of the missed approach procedure. ■

ELEVATION 50ft		Height above AD ELEV or THR ELEV if	
RWY 09 THR ELEVATION 30ft		THR ELEV	
DA		than 7ft	
* Cat C circling MAX IAS 160 kt/Radius 3.5NM		ELEV	
Category	A		
ILS/DME			
LOC/DME			
Circling	600(550) – 1900	600(850) – 4600	Visibility
* Cat C circling MAX IAS 160 kt/Radius 3.5NM			
Restricted circling IAS and Restricted radius from each runway threshold			
MDA			

Proposed AIP Amendment example