

**Civil Aviation
Advisory Publication
April 2001**

Use of restricted operations (dumb-bell) ground signals

This publication is advisory only. It gives the preferred method for complying with the Civil Aviation Regulations 1988 (CAR 1988). It is not the only method, but experience has shown that if you follow this method you will comply with the regulations.

Read this advice together with the appropriate regulation and Civil Aviation Order.

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The relevant regulations

- CAR 89R and CAR 92A (5)(c).
- CAO 92.1.

Who this CAAP applies to

- Operators of aerodromes where ground signals are used.
- Aerodrome personnel responsible for ground signals.

Why this publication was written

The restricted operations (dumb-bell) signal is a convenient way of signalling to pilots that they should restrict their movements to hard surfaces. Its use needs to be carefully planned to ensure that the signal is not misunderstood. This publication provides guidance on the use of dumb-bell signals.

Status of this CAAP

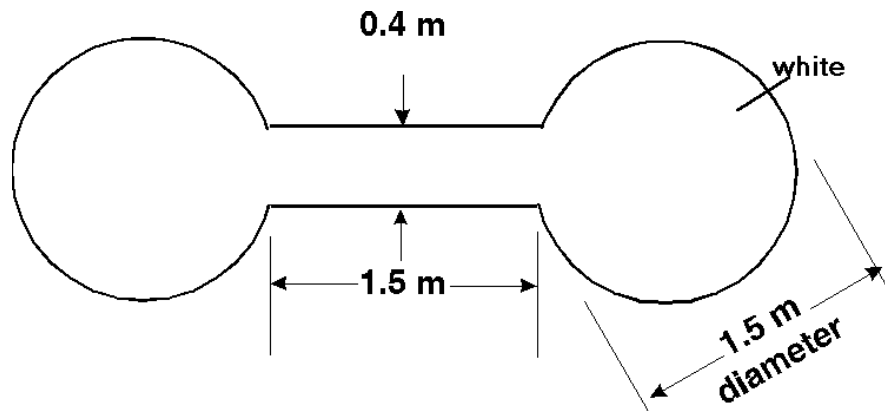
This is the second CAAP on restricted operations (dumb-bell) ground signals and includes the use of NOTAMs.

For further information

Contact the CASA District Office closest to you.

1. What is a restricted operations (dumb-bell) ground signal

1.1 A restricted operations ground signal is a marker, in the shape of a dumb-bell, as shown below, used at an aerodrome where there is no Air Traffic Control. When displayed on the signal circle, it conveys to pilots in the air the message that aircraft ground operations must be confined to hard surface area only. CAO 92.1 specifies the size, shape, colour and usage of the dumb-bell marker



2. How is a dumb-bell signal interpreted

2.1 Pilots are advised that when a dumb-bell signal is displayed, it means that all aircraft ground movements must be confined to the hard surface, which excludes grass or natural surfaces. In addition, where there are sealed and gravel surfaces, pilots must travel on the sealed surface; and where there are only gravel and natural surfaces, pilots must travel on the gravel surface.

2.2 Hard surface is defined as a surface comprised of asphalt, concrete, bitumen, tar stone covered, tar bound pavement, compacted gravel or coral.

2.3 Therefore, if there are two runways, one sealed and one gravel, the dumb-bell signal will require pilots to use the sealed surface. Similarly, if there are three taxiways, two of which are unsealed, then the dumb-bell signal will require pilots to travel only on the sealed taxiway.

3. Using the dumb-bell signal

3.1 Essentially, a dumb-bell signal is a convenient way of signalling to pilots that certain parts of the movement area are unserviceable because they are soft and wet, without the need to mark out all the soft wet surface areas.

3.2 By its very nature, this message is time limited, depending on the prevalent weather and ground conditions. The size of the dumb-bell and the location of the signal circle allow quick display and removal of the marker.

3.3 Thus, at an aerodrome with only one type of hard surface runway, taxiway, and apron, the display of the dumb-bell signal means stay on the runway, taxiway and apron, and not on any grass or natural surface. There is no need for cones or other markers.

3.4 Care needs to be exercised at an aerodrome with two runways of different surfaces, with a natural surface for the cross runway. The dumb-bell signal will render the cross runway in-operative, and deny aircraft usage of the aerodrome should the direction of wind be unfavourable. When the dumb-bell signal is used, the surface condition of the cross runway should be closely monitored, and the dumb-bell removed as soon as the surface dries.

3.5 On the other hand, if a cross runway is saturated and the surface profile or material will require a lengthy period before the runway can be serviceable, then, the dumb-bell signal alone is not enough. Aerodrome operators should display on the runway the unserviceability cross markings, at the prescribed locations, to reduce further any chance of inadvertent usage of the runway.

3.6 Subjective judgement based on knowledge of local conditions is required to determine whether the unserviceability markings should be displayed. However, if there is any doubt, aerodrome operating procedures should always err on the side of safety.

3.7 At an aerodrome with two runways, one sealed and the other of gravel surface, and both are serviceable, then use of the dumb-bell signal can cause confusion about the serviceability of the gravel runway. In this case, grass or natural surfaces that pilots should stay off should be marked by unserviceable markers.

4. Use of NOTAM

4.1 At an aerodrome with access to the NOTAM system, a NOTAM should be initiated when:

- (a) operation on an unsealed runway is precluded due to soft wet surface; and
- (b) straight-in approaches are conducted at the aerodrome such that pilots do not necessarily see the ground signal before landing.

5. Additional information relating to dumb-bell signal

5.1 Some aerodromes may have unique movement area surface features that do not neatly follow the above approach. In exceptional circumstances, additional aerodrome specific information in relation to the dumb-bell signal, may be conveyed

to pilots in the Notices section of the aerodrome entry in ERSA. This will be assessed on an individual case basis. Aerodrome operators are asked to contact the relevant CASA Aerodrome Inspector if they think there is need for such notification.

6. Maintenance of dumb-bell signal

6.1 A dumb-bell marker is effective as a visual signal by virtue of its location, shape and colour. Accordingly, it should be displayed correctly, handled and stored properly, and be provided with a fresh coat of paint when the colour starts to fade.
