



**Civil Aviation
Advisory Publication
July 2002**

Safety distances for explosive laden aircraft

This publication is only advisory. 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 CAR 1988.

Read this advice in conjunction with the appropriate regulations.

Contents

1. Explosive laden aircraft - aerodrome safety aspects	2
2. Explosives transported by air	2
3. Rating of explosives	3
4. Role of the aerodrome operator	3
5. CASA contact	3
Table 1 Safety distances	4
Table 2 Hazard divisions	5

The relevant regulations

- Regulation 89I and Schedule 10, Part 2, Section 12 of CAR 1988

Who this CAAP applies to

- Operators of aerodromes which are or may be frequented by explosive laden aircraft.
- Operators of aircraft used to transport explosives.

Why this publication was written

Some aerodromes are used by aircraft engaged in the transportation of explosives. This publication provides guidance on the safety distances to be maintained around such an aircraft.

Status of this CAAP

This is the third CAAP on safety distances for explosive laden aircraft and updates the outdated references to the Civil Aviation Authority (CAA) to the Civil Aviation Safety Authority (CASA).

For further information

Contact a CASA Dangerous Goods Specialist.

1. Explosive laden aircraft aerodrome safety aspects

1.1 The transportation of dangerous goods, including explosives, by air is regulated by the *Civil Aviation Act 1988* and the *Civil Aviation Regulations 1988*. The Act and Regulations specify conditions under which the dangerous goods may be transported by aircraft. (see regulation 262D of CAR 1988)

2. Explosives transported by air

2.1 The dangerous goods list is based on the International Civil Aviation Organisation (ICAO) *Technical Instructions for the Safe Transport of Dangerous Goods by Air*. The list includes explosive substances which are either:

- permitted for transport by air within Australian airspace without reference to the Civil Aviation Safety Authority (CASA) subject to the air operator complying with the technical requirements of CAR 1988; or
- forbidden for transport by air within Australian airspace unless a written permission of the CASA is obtained.

2.2 Before CASA issues such a permission, it must be satisfied that, among other considerations, the aerodromes nominated in the flight operations are suitable for the loading and unloading, or transit of explosives and that the safety distance requirements can be met.

3. Rating of explosives

3.1 Danger posed by explosives is rated under a classification system termed 'Hazard Divisions' prescribed in the ICAO Technical Instructions. Explosive substances are classified in hazard divisions and some are forbidden from transport by air, unless approved by CASA. These explosives require special handling due to their composition which will have one or more of the following characteristics:

- a mass explosion hazard;
- a fragmentation hazard;
- able to transmit detonation to secondary explosives in close proximity; or
- will detonate or burn rapidly.

4. Role of the aerodrome operator

4.1 Whether an aerodrome operator should accept explosive laden aircraft is a matter for the aerodrome operator to determine. Although the consignor/consignee of the explosives or the aircraft operator carrying the explosives are responsible for the handling, the aerodrome operator has a responsibility, under the regulations, to ensure the appropriate procedures are established to protect other aerodrome users in the event of an accidental detonation of the explosives.

4.2 The procedure should identify specific areas where explosive laden aircraft may be held and processed. The most effective way to ensure that other aerodrome users will not be harmed by accidental detonation of the explosives is to keep the explosive laden aircraft a safe distance away from other aerodrome users.

4.3 Table 1 provides the recommended safety distances between an explosive laden aircraft and other aerodrome facilities.

4.4 Table 2 provides for assessment of mixed hazard division loads.

4.5 Based on these two tables, the aerodrome operator should assess the maximum amount of explosives that an aircraft operating into the aerodrome may transport at any one time.

4.6 The aerodrome operator should also determine the times during which explosive laden aircraft may or may not be permitted to use the aerodrome, to minimise the risk to the travelling public and other aerodrome users.

4.7 The aerodrome operator should include details of the maximum quantity of explosive permitted and the procedures for dealing with explosive laden aircraft in the Aerodrome Manual.

5. CASA contact

The CASA contact for inquiries on air transportation of explosives is:

Dangerous Goods/Cabin Safety Specialist
Operational Standards Section
Civil Aviation Safety Authority
GPO Box 2005
Canberra ACT 2601

Telephone: (02) 6217 1154

Fax: (02) 6217 1757

Bill McIntyre
Executive Manager
Aviation Safety Standards

TABLE 1

Safety Distance (metres) Between Explosive Laden Aircraft and Other Aerodrome Facilities

Net Expl Qty (NEQ) (KG)	Hazard Division 1.1, 1.2 and 1.5		Hazard Division 1.3 Propellant and non-propellant	
	Passenger Terminals and Runways	Other inhabited buildings, taxiways and public roads	Passenger Terminals and Runways	Other inhabited buildings, taxiways and public roads
25	270	180	50	30
200			60	40
500			80	50
1000			90	60
2000	270	180	100	70
3000	300	200	110	80
5000	380	250	120	90
10000	480	320	150	120
20000	600	400	200	150

Notes.

- (i) Explosive laden aircraft should not be parked, loaded or unloaded in front of glass constructed passenger terminals. Where this is unavoidable, the recommended safety distance should be doubled.
- (ii) For NEQ less than 25 kg, safety distances less than those recommended above may be used by aerodrome operators with due consideration for safety.
- (iii) Hazard Divisions 1.4 and 1.6 explosives may be handled without the need for safety distances.
- (iv) Safety distances recommended in the table apply to active runways, taxiways and public roads.
- (v) The separation distance for intermediate quantities of explosives may be obtained by interpolation.
- (vi) Definition of Hazard Divisions 1.1, 1.2, 1.3 and 1.5 is contained in *ICAO Technical Instructions for the Safe Transport of Dangerous Goods*. Details of the hazard divisions of the explosives transported should be made available by the consignor/consignee of the explosives or the aircraft operator carrying the explosives.

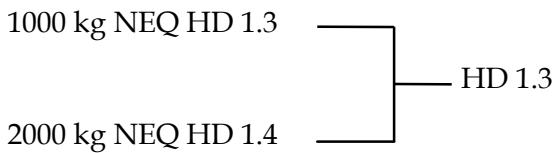
TABLE 2

Determination of Hazard Division for Loads Containing More Than One Hazard Division

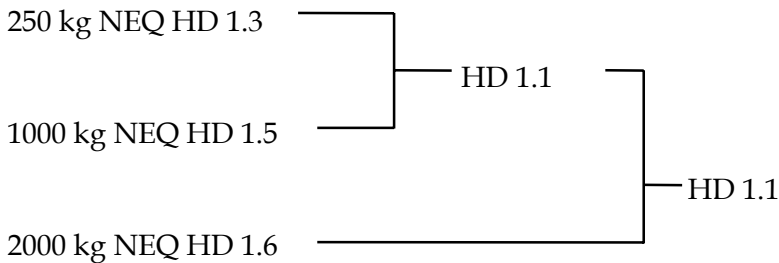
Division	1.1	1.2	1.3	1.4	1.5	1.6
1.1	1.1	1.1	1.1	1.1	1.1	1.1
1.2	1.1	1.2	1.1	1.2	1.1	1.1
1.3	1.1	1.1	1.3	1.3	1.1	1.3
1.4	1.1	1.2	1.3	1.4	1.5	1.4
1.5	1.1	1.1	1.1	1.5	1.5	1.5

When more than two Hazard Divisions (HD) are present in any load, two HD shall be considered in determining a resultant HD which should then be considered with the next HD and so on until all HD present in the load have been considered, as shown in the examples below:

Example 1



Example 2



Example 3

