

Advisory Circular

AC92-2

Draft Revision 2
xx yy 2019

Carriage of Dangerous Goods on Domestic VFR Flights in Unpressurised Aircraft not exceeding 5700 kg MCTOW

General

Civil Aviation Authority advisory circulars contain information about standards, practices, and procedures that the Director has found to be an **acceptable means of compliance** with the associated rules and legislation.

However, the information in the advisory circular does not replace the requirement for participants to comply with their obligations under the Civil Aviation Rules, the Civil Aviation Act 1990 and other legislation.

Advisory circulars reflect the Director's view on the rules and legislation. They express CAA policy on the relevant matter. They are not intended to be definitive. Consideration will be given to other methods of compliance that may be presented to the Director. When new standards, practices, or procedures are found to be acceptable they will be added to the appropriate advisory circular. Should there be any inconsistency between this information and the rules or legislation, the rules and legislation take precedence.

An advisory circular may also include **guidance material** generally including guidance on best practice as well as guidance to facilitate compliance with the rule requirements. However guidance material must not be regarded itself as an acceptable means of compliance.

An advisory circular may also include **technical information** that is relevant to the rule standards or requirements.

Purpose

The advisory circular provides methods acceptable to the Director for showing compliance with the exceptions provided in Part 92 for the carriage of dangerous goods on domestic VFR operations in unpressurised aircraft not exceeding 5700 kg MCTOW.

Related Rules

This advisory circular relates to Civil Aviation Rule Part 92 specifically rule 92.11(c).

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Change Notice

Revision 2 updates the:

- dangerous goods items that are acceptable to carry by passengers on board for recreational or sporting activities
- list of substance by class or division (Table 1) and examples of items (Table 2)
- emergency procedure to include the appropriate ATS unit in the communication of any dangerous goods on board

Cancellation Notice

This advisory circular cancels advisory AC92-2 Rev.1 dated 27 April 2007

Version History

History Log

Revision No.	Effective Date	Summary of Changes
0	07 September 1995	This was the initial issue of this advisory circular.
1	27 April 2007	Revision 1 reformatted and renumbered this advisory circular from AC92-02 to AC92-2 as part of a project to standardise the numbering of all advisory circulars.
2	Xx yy 2019	<p>Revision 2 updates: the dangerous goods items that are acceptable to carry by passengers on board recreational or sporting activities; the list of substance by class or division (Table 1) and examples of items (Table 2); and the emergency procedure to include the appropriate ATS unit in the communication of any dangerous goods on board.</p> <p>The changes are as follows:</p> <ul style="list-style-type: none">• Change Notice is amended• Cancellation Notice is inserted• Version History Log is inserted• Numbering system is updated• Paragraphs 4.2, 4.2(a), 4.2(f) and 9.4 are amended• Paragraphs 4.2(g) and 9.3 are inserted• Tables 1 and 2 are revoked and replaced

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1. Introduction

1.1 *Part 92 provides exceptions for the carriage by air of some dangerous goods. One exception allows the carriage of certain items for the recreational use of a passenger in unpressurised aircraft at or below 5700 kg MCTOW on a VFR flight. The VFR operator will not have to comply with the extensive requirements that otherwise apply to the safe transport of dangerous goods by air.*

1.2 *It is important to appreciate that the requirements for the safe carriage of dangerous goods are applicable to all operators, irrespective of the operation being for hire or reward, or private.*

1.3 *Many aircraft engaged in VFR operations operate into areas not easily accessible by other means of transport. The dangerous goods transported on these operations are those associated with the passengers for their recreational use.*

1.4 *It is important for aircraft operators that transport these goods to fully understand the rule provisions and how to comply with the rules. That understanding will ensure that the safety of the aircraft and its occupants is not put at risk.*

1.5 *The following provides guidance on methods and procedures that the operator can apply to the safe carriage of dangerous goods by air.*

2. What are dangerous goods

2.1 Dangerous goods are articles or substances that are capable of posing significant risk to health, safety, or property when carried by air.

2.2 A common dangerous good is petrol. Petrol is a commodity that has been around for a long time. Most, if not all of you will have handled petrol and had the safety precautions imbued in you by the likes of your parents. Precautions would be such as: it is highly flammable; don't smoke or have an open flame in its vicinity; keep it in a proper container with a tightly closed stopper; the fumes are hazardous and the like.

2.3 Many common items from the home or workshop, as well as a variety of industrial chemicals or substances are potentially more hazardous to persons on board aircraft when they are carried by air.

3. Dangerous goods forbidden for carriage in aircraft

3.1 You need to be aware that certain items, due to their hazardous nature, are forbidden from carriage by air, and others can only be carried on cargo aircraft. Items such as explosives or explosive devices are obvious examples. But there are a number of other items that are liable to produce a dangerous source of heat or gas under the conditions normally encountered in an aircraft during flight. These types of items must not be carried in any circumstance.

4. Identification

4.1 Each operator who needs to take advantage of this provision in the rule would have experience with the items associated with the needs of passengers for their recreational or sporting activities. The operator should identify these items that are acceptable for transport in their aircraft and provide this information to the operating pilots. They then do not have to make individual judgements on what might be carried.

4.2 The following is a list of typical items that may be carried with passengers.

- (a) Small quantities of ammunition required for hunting or sporting purposes.
- (b) Petrol, kerosene or other flammable liquid required for the replenishment of heaters, stoves, lamps, and the like.
- (c) Solid fuel for solid fuel burners, heaters, and the like.
- (d) Divers' air bottles, either full or empty.
- (e) Batteries, including lithium batteries, required for use by generators, back-up power supply, and the like.
- (f) e-Cigarettes

Note: If you come across an article or substance that appears to be a dangerous good, either do not carry it or seek advice about it.

5. Segregation

5.1 Certain substances can interact dangerously producing toxic fumes, or even ignite, should they come into contact with each other. The precaution to be taken is to segregate such substances that can react dangerously with one another.

5.2 Segregation can be achieved by placing articles or packages of non-dangerous goods between them, or by physically placing the packages in different parts of the cargo or baggage compartment.

5.3 *ICAO Doc 9284-AN/905 Technical Instructions for the Safe Transport of Dangerous Goods* contains a complete list of substance by class or division that are required to be segregated. As the purpose of this rule is for the carriage of restricted items of dangerous goods the following table covers those items that are likely to be carried. Should you come across a substance that is not included in the table you should seek advice from someone who is familiar with the complete ICAO listing.

Table 1: List of Substance by Class or Division

Class or Division	Should be segregated from
Class 1 - Explosives, other than those in Division 1.4, Compatibility Group S	Class 3 - Flammable Liquids Division 4.2 - Substances liable to Spontaneous Combustion Division 4.3 - Substances which, in contact with water, emit flammable gases Division 5.1 – Oxidiser Division 5.2 - Organic Peroxide Class 8 - Corrosives
Class 3 - Flammable Liquids	Class 1 – explosives, other than those in Division 1.4, Compatibility Group S Division 5.1 - Oxidisers
Division 4.2 - Substances liable to Spontaneous Combustion	Class 1 – explosives, other than those in Division 1.4, Compatibility Group S Division 5.1 - Oxidiser
Division 4.3 - Substances which, in contact with water, emit flammable gases	Class 1 – explosives, other than those in Division 1.4, Compatibility Group S Class 8 - Corrosives
Division 5.1 - Oxidiser	Class 1 – explosives, other than those in Division 1.4, Compatibility Group S Class 3 - Flammable Liquid Division 4.2 - Substances liable to Spontaneous Combustion
Division 5.2 - Organic Peroxide	Class 1 – explosives, other than those in Division 1.4, Compatibility Group S
Class 8 - Corrosives	Class 1 – explosives, other than those in Division 1.4, Compatibility Group S Division 4.3 - Substances which, in contact with water, emit flammable gases

(Source: ICAO Doc 9284-AN/905 Technical Instructions for the Safe Transport of Dangerous Goods)

5.4 Some of the substances or articles listed are readily identified, others not so. The following are examples of items in each class or division.

Table 2: Examples of Items (substances or articles) in each Class or Division

Class or Division	Examples
Explosives	Ammunition in the form of cartridges with inert projectile
Corrosives	Battery acid, mercury
Flammable liquids	Petrol, kerosene
Flammable solids	Matches, red phosphorous, magnesium ribbon, celluloid, camphor
Oxidiser	Swimming pool chlorine, peroxides
Substances liable to spontaneous combustion	White or yellow phosphorus
Substances which in contact with water emit flammable gases	Calcium carbide, powdered aluminium, sodium metal

(Source: ICAO Doc 9284-AN/905 *Technical Instructions for the Safe Transport of Dangerous Goods*)

6. Proper condition

6.1 Each operator who carries items under the provision of this rule should ensure that they are in a proper and safe condition by checking that the packages or containers have not been damaged or show signs of leakage. Metal containers should not show any signs of corrosion. If applicable, the testing dates of gas cylinders and diving tanks should be checked to ensure that the validity date has not expired. Caps or valves on containers should be checked for security. Packages containing ammunition should not be torn or damaged in such a way that may allow the ammunition to move or fall out.

7. Stowage security and packaging

7.1 The ICAO packing requirements are not applicable to this rule, but all articles or substances should be carried in containers or receptacles that are specifically designed for that purpose. For example, petrol should only be carried in containers that have been designed to hold petrol. Glass or plastic bottles would not be acceptable. Ammunition should only be carried in containers specifically designed for that purpose. Ammunition lying loose in a plastic bag or in the pocket of a pack will be hazardous.

7.2 All articles should be secured and stowed to minimise the risk of damage to the container during normal flight. Gas cylinders should not be attached to a stove, lantern, burner, or the like, and any regulators or hoses should be removed prior to loading. Diving bottles should not have air hoses or regulators fitted. Single fuel-gas cylinders or small quantities of dangerous goods may be securely packed in suitcases or packs and surrounded by clothing and the like. For larger quantities of dangerous goods, it may be advisable for these to be placed in another container that can then be securely restrained to the aircraft.

8. Safety precautions

8.1 Passengers should be advised that dangerous goods are being carried, and, if applicable, the nature of the hazard and of any precautions that should be taken during the flight. This would include—

- (a) banning of smoking in or around the aircraft should flammable goods be involved
- (b) careful handling of baggage and goods should the passengers be involved in their loading and unloading.

9. Emergency procedures

9.1 Each operator who carries dangerous goods under this rule should identify those goods that are acceptable for carriage in their aircraft. The operator should provide the pilot with information on the procedures to be carried out should an emergency associated with the carriage of dangerous goods occur during the flight.

9.2 A likely emergency could be the presence of smoke or fumes in the aircraft cabin. In this circumstance the procedures should be to—

- (a) land as soon as possible
- (b) use the appropriate smoke removal emergency procedures in the aircraft flight manual (if prescribed)
- (c) operate the air conditioning systems at maximum capacity to vent cabin air overboard to reduce the concentration of any contamination in the cabin.

9.3 If an in-flight emergency occurs, a pilot-in-command of an aircraft should, as soon as practicable, inform the appropriate ATS unit of any dangerous goods on board the aircraft to assist emergency services in their response. 9.4 More information is contained in *ICAO Doc 9481-AN/928 Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods*. The operator can extract those procedures applicable to the type of dangerous goods allowed to be carried.