

**GHANA CIVIL AVIATION  
(FLIGHT STANDARDS) DIRECTIVES**



**PART 18 - SAFE TRANSPORT OF DANGEROUS  
GOODS BY AIR**

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## **Introduction**

**Part 18** specifies the broad requirements to be followed to enable dangerous goods to be carried safely. It makes references to the provisions of the International Civil Aviation Organisation (ICAO) Technical Instructions for the Safe Transport of Dangerous Goods by Air referred to in ICAO Doc. 9284 necessary for the correct handling of dangerous cargo. These require frequent updating as developments occur in the chemical, manufacturing and packaging industries, and a special procedure has been established by the Council to allow the Technical Instructions to be revised and reissued regularly to keep up with new products and advances in technology.

More than half of the cargo carried by all modes of transport in the world is dangerous cargo – explosive, corrosive, flammable, toxic and even radioactive. These dangerous goods are essential for a wide variety of global industrial, commercial, medical and research requirements and processes. Because of the advantages of air transport, a great deal of this dangerous cargo is carried by aircraft.

The Authority recognizes the importance of this type of cargo and has taken steps to ensure that such cargo can be carried safely. This has been done by adopting ICAO Annex 18, together with the associated document Technical Instructions for the Safe Transport of Dangerous Goods by Air.

There are nine hazard classes which have been determined by the United Nations Committee of Experts and are used for all modes of transport. Class 1 includes explosives of all kinds, such as sporting ammunition, fireworks and signal flares. Class 2 comprises compressed or liquefied gases which may also be toxic or flammable; examples are cylinders of oxygen and refrigerated liquid nitrogen. Class 3 substances are flammable liquids including gasoline, lacquers, paint thinners, etc. Class 4 covers flammable solids, spontaneously combustible materials and materials which, when in contact with water, emit flammable gases (examples are some powdered metals, cellulose type film and charcoal). Class 5 covers oxidizing material, including bromates, chlorates or nitrates; this class also covers organic peroxides which are both oxygen carriers and very combustible. Poisonous or toxic substances, such as pesticides, mercury compounds, etc., comprise Class 6, together with infectious substances which must sometimes be shipped for diagnostic or preventative purposes. Class 7 comprises radioactive materials which are mainly radioactive isotopes needed for medical or research purposes but are sometimes contained in manufactured articles such as heart pacemakers or smoke detectors and are regulated in Ghana by the Nuclear Regulatory Authority. Corrosive substances which may be dangerous to human tissue or which pose a hazard to the structure of an aircraft are dealt with in Class 8 (for example, caustic soda, battery fluid, paint remover). Finally, Class 9 is a miscellaneous category for other materials which are potentially hazardous in air transport, such as magnetized materials which could affect the aircraft's navigational systems.

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## 18.1 GENERAL

### 18.1.1 APPLICABILITY

- (1) The requirements of this Part shall be applicable to both domestic and international operations of civil aircraft. This Part prescribes the requirements of the Republic of Ghana that apply to the carriage of dangerous goods by air as specified in—
  - (a) The International Civil Aviation Organization Document, Technical Instructions for the Safe Transport of Dangerous Goods by Air. and all applicable amendments; and
  - (b) This Part is applicable to operators of aircraft in—
    - (i) Aerial work;
    - (ii) Commercial air transport; and
    - (iii) General aviation.
- (2) This Part shall also be applicable to all organizations and individuals involved in the process of shipping dangerous goods by air, including all persons performing duties required by these Directives.
- (3) Any instructions or limitations contained in the Technical Instructions for the carriage of dangerous goods on passenger or cargo aircraft, as therein defined shall for the purpose of this Part be interpreted as applying also to the carriage of such goods beneath passenger or cargo aircraft.
- (4) In instances:
  - (a) of extreme urgency; or
  - (b) when other forms of transport are inappropriate or
  - (c) when full compliance with the prescribed requirements is contrary to the public interest,

the Authority, the States of origin, transit, over-flight and destination of the consignment and the State of the operator may grant exemptions from these provisions provided that in such cases every effort shall be made to achieve an overall level of safety in transport which is equivalent to the level of safety provided by these provisions.

- (5) For the State of Over flight, if none of the criteria for granting an exemption are relevant, an exemption may be granted based solely on whether it is believed that an equivalent level of safety in air transport has been achieved.

*Note 1: for the purpose of approvals, “states concerned” are states the states of origin and the operator, unless otherwise specified in the technical instructions.*

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*Note 2: for the purpose of exemptions, “states concerned” are the states of the Origin, Operator, Transit, Overflight and Destination.*

*Note 3: Guidance for the processing of exemptions, including examples of extreme urgency, may be found in the supplement to the technical instructions (Part S-1, Chapter 1, 1.2 and 1.3)*

*Note 4: Refer to 18.3.3 for dangerous goods forbidden for transport by air under any circumstance.*

*Note 5: it is not intended that this part be interpreted as requiring an operator to transport a particular article or substance or preventing an operator from adopting special requirements on the transport of a particular article or substance.*

- (6) Where there is no specific reference in the Technical Instructions allowing the granting of an approval, an exemption shall not be granted by the Authority.
- (7) Where specifically provided for in the Technical Instructions, the Authority may grant an approval provided that in such instances an overall level of safety in transport which is equivalent to the level of safety provided for in the Technical Instructions is achieved.

### **18.1.2 DEFINITIONS**

When the following terms are used in these Directives they have the following meanings:

**Approval:** An authorization granted by the Authority or an appropriate national authority for:

- a) the transport of dangerous goods forbidden on passenger and or cargo aircraft where the Technical Instructions state that such goods may be carried with an approval; or
- b) other purposes as provided for in the Technical Instructions.

**Cargo aircraft.** Any aircraft, other than a passenger aircraft, which is carrying goods or property.

**Consignment.** One or more packages of dangerous goods accepted by an operator from one shipper at one time and at one address, receipted for in one lot and moving to one consignee at one destination address.

**Crew member.** A person assigned by an operator to duty on an aircraft during a flight duty period.

**Dangerous goods.** Articles or substances which are capable of posing a risk to health, safety, property or the environment and which are shown in the list of dangerous goods in the Technical Instructions or which are classified according to those Instructions.

**Dangerous goods accident.** An occurrence associated with and related to the transport of dangerous goods by air which results in fatal or serious injury to a person or major property or environmental damage.

**Dangerous goods incident.** An occurrence, other than a dangerous goods accident, associated with and related to the transport of dangerous goods by air, not necessarily occurring on board an aircraft, which results in injury to a person, property or environmental damage, fire, breakage, spillage, leakage of fluid or radiation or other evidence that the integrity of the packaging has not been maintained. Any occurrence relating to the transport of dangerous goods which seriously jeopardizes the aircraft or its occupants is also deemed to constitute a dangerous goods incident.

**Designated postal operator.** Any governmental or non-governmental entity officially designated by a Universal Postal Union (UPU) member country to operate postal services and to fulfil the related obligations arising from the acts of the UPU Convention on its territory. Exception. A provision in this Directive, which excludes a specific item of dangerous goods from the requirements normally applicable to that item.

**Exemption.** An authorization issued, other than an approval, granted by an appropriate national authority providing relief from the provisions of these Directives and Technical Directives.

**Flight crew member.** A licensed crew member charged with duties essential to the operation of an aircraft during a flight duty period.

**Incompatible.** Describing dangerous goods which, if mixed, would be liable to cause a dangerous evolution of heat or gas or produce a corrosive substance.

**Operator.** A person, organization or enterprise engaged in or offering to engage in an aircraft operation.

**Overpack.** An enclosure used by a single shipper to contain one or more packages and to form one handling unit for convenience of handling and stowage.

NOTE: A unit load device is not included in this definition.

**Package.** The complete product of the packing operation consisting of the packaging and its contents prepared for transport.

**Packaging.** Receptacles and any other components or materials necessary for the receptacle to perform its containment function.

Note.— For radioactive material, see Part 2, paragraph 7.2 of the Technical Instructions.

**Passenger Aircraft.** An aircraft that carries any person other than a crew member, an operator's employee in an official capacity, an

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authorized representative of an appropriate national authority or a person accompanying a consignment or other cargo .

**Pilot – in – command.** The pilot designated by the operator, or in the case of general aviation, the owner, as being in command and charged with the safe conduct of a flight.

**Safety Management Systems (SMS).** A systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures.

**Serious injury.** An injury which is sustained by a person in an accident and which;

(a) requires hospitalization for more than 48 hours, commencing within seven days from the date the injury was received; or

(b) results in a fracture of any bone (except simple fractures of fingers, toes or nose); or

(c) involves lacerations which cause severe haemorrhage, nerve , muscle or tendon damage; or

(d) involves injury to any internal organ; or

(e) involves second or third degree burns, or any burns affecting more than 5 per cent of the body surface; or

(f) involves verified exposure to infectious substances or injurious radiation.

**State of Destination.** The State in the territory of which the consignment is finally to be unloaded from an aircraft.

**State of Origin.** The State in the territory of which the consignment is first to be loaded on an aircraft.

**State of the Operator.** The State in which the operator’s principal place of business is located or, if there is no such place of business, the operator’s permanent residence.

**Technical Instructions.** The Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc 9284), approved and issued periodically in accordance with the procedure established by the ICAO Council.

**UN number.** The four-digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals to identify an article or substance or a particular group of articles or substances.

**Unit load device.** Any type of freight container, aircraft container, aircraft pallet with a net, or aircraft pallet with a net over an igloo.

Note. — An overpack is not included in this definition.

**18.1.3 DANGEROUS GOODS TECHNICAL INSTRUCTIONS**

- (1) No operator shall transport dangerous goods unless approved to do so by the Authority in accordance with dangerous goods Technical Instructions for the safe transport of dangerous goods by air.
- (2) Before any person offers package or overpack of dangerous goods for transport by air he must ensure compliance to the ICAO Technical Instructions for the safe Transport of Dangerous Goods by Air.
- (3) Transport of infectious substances requires coordinated action by the shipper, the operator and the consignee to ensure safe transport and arrival on time and in proper condition in accordance with the Technical Instructions.
- (4) Transport of Radioactive material shall be in accordance with the Technical Instructions.
- (5) Exemptions Articles and substances which would otherwise be classed as dangerous goods are excluded from the provisions of this subpart, to the extent specified in the Technical Instructions, provided they are –
  - (a) Required to be aboard the aircraft for operating reasons;
  - (b) Carried as catering or cabin service supplies;
  - (c) Carried for use in flight as veterinary aids for use as a humane killer for animals; or
  - (d) Carried for use in flight for medical aid for a patient, provided that-
    - (i) Gas cylinders have been manufactured specifically for the purpose of containing and transporting that particular gas;
    - (ii) Drugs, medicines and other medical matter are under the control of trained personnel during the time when they are in use in the aircraft;
    - (iii) Equipment containing wet cell batteries is secured in an upright position to prevent spillage of the electrolyte; and
    - (iv) Proper provision is made to stow and secure all the equipment during take-off and landing and at all other times when deemed necessary by the Pilot-in-Command in the interest of safety; or
    - (v) They are carried by passenger or crew members.
- (6) Articles and substances intended as replacements for those in paragraph 18.1.3(5) may be transported on an article as specified in the Technical Instructions.

- (7) If an amendment to the Technical Instructions is not immediately applicable in Ghana, for reasons of safety, the Authority will facilitate the movement of the dangerous goods in its territory which are consigned from another Contracting State in accordance with that amendment, provided the goods comply in total with the revised requirements of the Technical Instructions.

#### **18.1.4 CIVIL AIRCRAFT OPERATIONS**

- (1) No Operator shall handle or transport Dangerous Goods by Air without adhering to the provisions of these Directives as well as the Technical Instructions for the safe transport of Dangerous Goods by Air.
- (2) Where an Operator adopts more restrictive operating guidelines, the Operator shall be assessed based on those restrictive guidelines which will be incorporated in the Technical Instructions.

#### **18.1.5 EXCEPTIONS**

- (1) Articles and substances which would otherwise be classed as dangerous goods but which are required to be aboard the aircraft in accordance with the pertinent airworthiness requirements and operating Directives, or for those specialized purposes identified in the Technical Instructions, shall be excepted from the provisions of this Part.
- (2) Where articles and substances intended as replacements for those described in (1) or which have been removed for replacement are carried on an aircraft, they shall be transported in accordance with the provisions of this Part except as permitted in the Technical Instructions.
- (3) Specific articles and substances carried by passengers or crew members shall be excepted from the provisions of this Part to the extent specified in the Technical Instructions.

#### **18.1.6 NOTIFICATION OF VARIATIONS FROM THE TECHNICAL INSTRUCTIONS**

- (1) Where the Authority adopts different provisions from those specified in the Technical Instructions, it shall notify ICAO promptly of such variations for publication in the Technical Instructions.

*Note- State variations issued by Ghana have been specified in the ICAO Technical Instructions and IATA Dangerous Goods Regulations.*

- (2) The Authority shall take the necessary measures to ensure that when an operator adopts more restrictive requirements than those specified in the Technical Instructions, the notification of such operator variations is made to ICAO for publication in the Technical Instructions.

### **18.1.7 SURFACE TRANSPORT**

Dangerous Goods intended for air transport and prepared in accordance with the ICAO Technical Instructions shall comply strictly with the Authority's procedures for surface transport of Dangerous Goods to be carried by Air, to or from aerodromes.

### **18.1.8 NATIONAL AUTHORITY**

The Dangerous Goods Inspectorate of the Authority under delegated authority from the Director-General shall ensure regulatory compliance to this part.

## **18.2 CLASSIFICATION**

Each person involved in handling dangerous goods shall take all reasonable measures to ensure that articles and substances are classified as dangerous goods as specified in the Technical Instructions.

*Note: the detailed definition of the classes of dangerous goods are contained in the Technical Instruction. These classes identify the potential risks associated with the transportation of dangerous goods by air and are those recommended by the United Nations Committee of Experts on the Transport of Dangerous Goods.*

## **18.3 LIMITATIONS ON THE TRANSPORTATION OF DANGEROUS GOODS BY AIR**

### **18.3.1 DANGEROUS GOODS PERMITTED FOR TRANSPORT BY AIR**

The transport of dangerous goods by air shall be forbidden except as established in these Directives and the detailed specifications and procedures provided in the Technical Instructions.

### **18.3.2 DANGEROUS GOODS FORBIDDEN FOR TRANSPORT BY AIR UNLESS EXEMPTED**

The Following Dangerous goods shall be forbidden on aircraft unless exempted by the Authority or unless the provisions of the Technical Instructions indicate that they may be transported under an approval granted by the Authority:

- (a) Dangerous goods that are identified in the Technical Instructions as being forbidden for transport in normal circumstances;
- (b) Infected live animals;
- (c) Weapons and Ammunition;
- (d) Explosives, unless required on board the aircraft for its operations;
- (e) Poisonous gases;

- (f) Infectious substances; and
- (g) Radioactive material, radioisotopes and similar substances.

### **18.3.3 DANGEROUS GOODS FORBIDDEN FOR TRANSPORT BY AIR UNDER ANY CIRCUMSTANCE**

Persons involved in the transportation of dangerous goods shall take all reasonable measures to ensure that articles and substances that are specifically identified by name or by generic description in the Technical Instructions as being forbidden for transport by air under any circumstances shall not be carried on any aircraft.

## **18.4 PACKING**

### **18.4.1 GENERAL REQUIREMENTS**

Dangerous goods shall be packed in accordance with the provisions of this Directive and as provided for in the Technical Instructions.

### **18.4.2 PACKAGING**

- (1) Packaging used for the transport of dangerous goods by air shall be of good quality and shall be constructed and securely closed so as to prevent leakage which might be caused in normal conditions of transport, by changes in temperature, humidity or pressure, or by vibration.
- (2) Packaging shall be suitable for the contents. Packaging in direct contact with dangerous goods shall be resistant to any chemical or other action of such goods.
- (3) Packaging shall meet the material and construction specifications in the Technical Instructions.
- (4) Packaging shall be tested in accordance with the provisions of the Technical Instructions.
- (5) Packaging for which retention of a liquid is a basic function, shall be capable of withstanding, without leaking, the pressure stated in the Technical Instructions.
- (6) Inner Packaging shall be so packed, secured or cushioned as to prevent their breakage or leakage and to control their movement within the outer packaging during normal conditions of air transport. Cushioning and absorbent materials shall not react dangerously with the contents of the packaging.

- (7) No packaging shall be re-used until it has been inspected and found free from corrosion or other damage. Where a packaging is re-used, all necessary measures shall be taken to prevent contamination of subsequent contents.
- (8) If, because of the nature of their former contents, uncleaned empty packaging may present a hazard, they shall be tightly closed and treated according to the hazard they constitute.
- (9) No harmful quantity of a dangerous substance shall adhere to the outside of packages.

## **18.5 LABELLING AND MARKING**

### **18.5.1 LABELS**

- (1) Unless otherwise provided for in the Technical Instructions, each package of dangerous goods shall be labeled with the appropriate labels and in accordance with the provisions set forth in those Technical Instructions.
- (2) Each person involved in handling dangerous goods shall take all reasonable measures to ensure that dangerous goods are packed as specified in the Technical Instructions.
- (3) Where dangerous goods are carried on a flight which takes place wholly or partly outside the territory of Ghana, the shipper and the operator shall ensure that labeling and markings are in the English language in addition to any other language requirements.

### **18.5.2 MARKINGS**

- (1) Unless otherwise provided for in the Technical Instructions, each package of dangerous goods shall be marked with the proper shipping name of its contents and, when assigned, the UN number and such other markings as may be specified in those Instructions.
- (2) Unless otherwise provided for in the Technical Instructions, each packaging manufactured to a specification contained in those Instructions shall be so marked in accordance with the appropriate provisions of those Instructions and no packaging shall be marked with a packaging specification marking unless it meets the appropriate packaging specification contained in those instructions.

### **18.5.3 LANGUAGES TO BE USED FOR MARKINGS**

In addition to the languages required by the State of Origin and pending the development and adoption of a more suitable form of expression for universal use, English should be used for the markings related to dangerous goods.

**18.6 SHIPPER'S RESPONSIBILITIES****18.6.1 GENERAL REQUIREMENTS**

Before a person offers any package or over pack of dangerous goods for transport by air, that person shall ensure that the dangerous goods are not forbidden for transport by air and are properly classified, packed, marked, labelled and accompanied by a properly executed dangerous goods transport document, as specified in this Directive and the Technical Instructions.

**18.6.2 DANGEROUS GOODS TRANSPORT DOCUMENT**

- (1) An operator shall not accept dangerous goods for transport by air:
  - (a) unless the dangerous goods are accompanied by a duly completed and signed document by a person who offers it in accordance with the information required by those instructions.
  - (b) until the package, over pack or freight container containing the dangerous goods has been inspected in accordance with the acceptance procedures contained in the Technical Instructions.
- (2) The transport document shall bear a declaration signed by the person who offers dangerous goods for transport indicating that the dangerous goods are fully and accurately described by their proper shipping names and that they are classified, packed, marked, labelled, and in proper condition for transport by air in accordance with the relevant Directives.

**18.6.3 LANGUAGES TO BE USED**

In addition to the languages which may be required by the State of Origin and pending the development and adoption of a more suitable form of expression for universal use, English should be used for the dangerous goods transport document.

**18.7 OPERATOR'S RESPONSIBILITIES****18.7.1 SAFETY MANAGEMENT SYSTEMS**

An Operator shall include provisions on the carriage of Dangerous Goods in the scope of the Operator's Safety Management System. Note- Further guidance is contained in the Ghana Civil Aviation (Safety Management Systems) Directives and the Safety Management Manual (Doc 9859).

**18.7.2 ACCEPTANCE FOR TRANSPORT**

An operator shall not accept dangerous goods for transport by air:

- (a) unless the dangerous goods are accompanied by a completed dangerous goods transport document, except where the Technical Instructions indicate that such a document is not required; and
- (b) until the package, over pack or freight container containing the dangerous goods has been inspected in accordance with the acceptance procedures contained in the Technical Instructions.

*Note- Special provisions relating to the acceptance of overpacks are contained in the Technical Instructions.*

*Note - See 18.13 of these Dangerous Goods Directives on the reporting of Dangerous Goods accidents and incidents.*

### **18.7.3 ACCEPTANCE CHECKLIST**

- (1) An operator shall develop and use an acceptance checklist as an aid to Compliance with the provisions of 18.7.2.
- (2) No operator may accept dangerous goods for transport until the package, overpack or freight container has been inspected in accordance with the acceptance procedures in the Technical Instructions.
- (3) Each operator, or its handling agent, shall use an acceptance check list which:
  - (a) Shall allow for all relevant details to be checked and
  - (b) Shall be in such form as will allow for the recording of the results of the acceptance check by manual, mechanical or computerized means.

### **18.7.4 LOADING AND STOWAGE**

Packages and over packs containing dangerous goods and freight containers containing radioactive materials shall be loaded and stowed on an aircraft in accordance with the provisions of the Technical Instructions.

### **18.7.5 INSPECTION FOR DAMAGE OR LEAKAGE**

Each operator, shipper or handling agent shall ensure that

- (a) Packages, over packs and freight containers are inspected for evidence of leakage or damage immediately prior to loading an aircraft or into a unit load device, as specified in the Technical Instructions.
- (b) A unit load device is not loaded on an aircraft unless it has been inspected as required by the Technical Instructions and found free from any evidence of leakage from, or damage to, the dangerous goods contained therein.

- (c) Packages and over packs containing dangerous goods and freight containers containing radioactive materials shall be inspected for evidence of leakage or damage before loading on an aircraft or into a unit load device. Leaking or damage packages, overpacks or freight containers shall not be loaded on an aircraft.
- (d) Where any package of dangerous goods loaded on an aircraft appears to be damaged or leaking, the operator shall remove such package from the aircraft, or arrange for its removal by an appropriate authority or organization, and thereafter shall ensure that the remained of the consignment is in a proper condition for transport by air and that no other package has been contaminated.
- (e) Packages or over packs containing dangerous goods and freight containers containing radioactive materials shall be inspected for signs of damage or leakages upon unloading from the aircraft or unit load device. If evidence of damage or leakages is found, the area where the dangerous goods or unit load device were stowed on the aircraft shall be inspected for damage or contamination.

#### **18.7.6 LOADING RESTRICTIONS IN PASSENGER CABIN OR ON FLIGHT DECK**

- (1) Dangerous goods shall not be carried in an aircraft cabin occupied by passengers or on the flight deck of an aircraft, except in circumstances permitted by the provisions of the Technical Instructions.
- (2) **Passenger Cabin and Flight Deck.** Each operator shall ensure that dangerous goods are not carried in an aircraft cabin occupied by passengers or on the flight deck, unless otherwise specified in the Technical Instructions.
- (3) **Cargo Compartments.** Each operator shall ensure that dangerous goods are loaded in an aircraft such that they are protected from being damaged, and secured in such a manner that will prevent any movement in flight which would change the orientation of the packages. For packages containing radioactive materials, the securing shall be adequate to ensure the separation requirements.
- (4) **Dangerous Goods Designated for Carriage Only on Cargo Aircraft.** Each operator shall ensure that packages of dangerous goods bearing the “Cargo Aircraft Only “ label are carried on a cargo aircraft and loaded as specified in the Technical Instructions or in such a manner that a crew member or other authorized person can see, handle and, where size and weight permit, separate such packages from other cargo in flight.

#### **18.7.7 REMOVAL OF CONTAMINATION**

- (1) Any hazardous contamination found on an aircraft as a result of leakage or damage to dangerous goods shall be removed without delay.

- (2) An aircraft which has been contaminated by radioactive materials shall immediately be taken out of service and not returned to service until the radiation level at any accessible surface and the non-fixed contamination are not more than the values specified in the Technical Instructions.

#### **18.7.8 SEPARATION AND SEGREGATION**

- (1) Packages containing dangerous goods which might react dangerously one with another shall not be stowed on an aircraft next to each other or in a position that would allow interaction between them in the event of leakage.
- (2) Packages of Toxic and infectious substances shall be stowed on an aircraft in accordance with the provisions of the Technical Instructions.
- (3) Packages of radioactive materials shall be stowed on an aircraft so that there are separated from persons, live animals and undeveloped film, in accordance with the provisions in the Technical Instructions.

#### **18.7.9 SECURING OF DANGEROUS GOODS CARGO LOADS**

When dangerous goods subject to the provisions contained herein are loaded in an aircraft, the operator shall protect the dangerous goods from being damaged, and shall secure such goods in the aircraft in such a manner that will prevent any movement in flight which would change the orientation of the packages. For packages containing radioactive materials, the securing shall be adequate to ensure that the separation requirements of 18.7.8(3) are met at all times.

#### **18.7.10 LOADING ON CARGO AIRCRAFT**

Packages of Dangerous Goods bearing the “Cargo aircraft only” label shall be loaded in accordance with the provisions in the Technical Instructions.

#### **18.8 PROVISION OF INFORMATION**

- (1) **Information to ground Staff:** Each operator shall ensure that information is provided to enable ground staff to carry out their duties with regard to the transport of dangerous goods including the actions to be taken in the event of incidents and accidents involving dangerous goods;
- (2) **Information to the Pilot-In-Command:** Each operator shall ensure that the PIC is provided with written information, as specified in the Technical Instructions
- (3) **Information and Instruction to Flight Crew Members to Crew Members:** Each operator shall ensure that information is provided in the Operations Manual to

enable crew members to carry out their responsibilities in regard to the transport of dangerous goods, including the actions to be taken in the event of emergencies arising involving dangerous goods.

- (4) **Information to Passengers:** Each operator shall ensure that information is promulgated as required by the Technical Instructions so that passengers are warned as to the types of goods which they are forbidden from transporting aboard an aircraft.
- (5) **Information to other persons:** Operators, shippers or other organizations involved in the transport of dangerous goods by air shall provide such information to their personnel as will enable them to carry out their responsibilities with regard to the transport of dangerous goods and shall provide instructions as to the action to be taken in the event of emergencies arising involving dangerous goods.
- (6) **Information from pilot-in-command to aerodrome authorities:** If an in-flight emergency occurs, the pilot-in-command shall, as soon as the situation permits, inform the appropriate air traffic services unit, for the information of aerodrome authorities, of any dangerous goods on board the aircraft, as provided for in the Technical Instructions.
- (7) **Information in the Event of an Aircraft Incident or Accident:** In the event of an aircraft accident or serious incident, the operator of an aircraft carrying dangerous goods as cargo shall provide information, without delay, to emergency services responding to the accident or serious incident about the dangerous goods on board, as shown on the written information to the pilot-in-command. As soon as possible, the operator shall also provide this information to the appropriate authorities of the State of the Operator and the State in which the accident or serious incident occurred.
- (8) **Information to Acceptance Points Personnel:** Each operator, and where applicable, the handling agent shall ensure that notices are provided at acceptance points for cargo giving information about the transport of dangerous goods.
- (9) In the event of an aircraft incident, the operator of an aircraft carrying dangerous goods as cargo shall, if requested to do so, provide information without delay to emergency services responding to the incident and to the appropriate authority of the State in which the incident occurred, about the dangerous goods on board, as shown on the written information to the pilot-in-command.

*Note – the terms ‘accident’, ‘serious incident’ and ‘incident’ are as defined in Annex 13.*

## 18.9 LOADING RESTRICTIONS

- (1) **Passenger Cabin and Flight Deck.** Each operator shall ensure that dangerous goods are not carried on an aircraft cabin occupied by passengers or on the flight deck unless otherwise specified in the Technical Instructions.

- (2) **Cargo Compartment.** Each operator shall ensure that dangerous goods are loaded in an aircraft such that they are protected from being damaged, and secured in such a manner that will prevent any movement in flight which would change the orientation of the packages. For packages containing radioactive materials, the securing shall be adequate to ensure the separation requirements.
- (3) **Dangerous Goods Designated for Carriage Only on Cargo Aircraft.** Each operator shall ensure that packages of dangerous goods bearing the “**Cargo Aircraft Only**” label are carried on a cargo aircraft and loaded as specified in the Technical Instructions or in such a manner that a crew member or other authorized person can see, handle and, where size and weight permit, separate such packages from other cargo in flight.

## 18.10 TRAINING PROGRAMMES

### 18.10.1 ESTABLISHMENT OF TRAINING PROGRAMMES

Each shipper, operator and agencies who handle or conduct operations in the Transportation of Dangerous Goods by Air shall establish, maintain and conduct GCAA approved training programmes which enables the operator’s personnel to qualify for the function or in the area assigned to the personnel. The programme shall be updated from time to time as provided in the Technical Instructions

### 18.10.2 INITIAL DANGEROUS GOODS TRAINING

Initial and recurrent dangerous goods training programmes must be established and maintained by or on behalf of:

- (a) Shippers of dangerous goods, including packers and persons or organizations undertaking the responsibilities of the shipper;
- (b) Operator;
- (c) Ground handling agencies which perform, on behalf of the operator, the act of accepting, handling, loading, unloading, transferring or other processing of cargo, mail or stores;
- (d) Grounding handling agencies located at an airport which perform, on behalf of the operator, the act of processing passengers;
- (e) Agencies, not located at an airport, which perform on behalf of the operator, the acting of checking in passengers;
- (f) Freight forwarders;
- (g) Agencies engaged in the security screening of passengers and their baggage and or cargo, mail or stores; and

- (h) Designated postal operators

### **18.10.3 APPROVAL OF TRAINING PROGRAMMES**

- (1) The Ghana Civil Aviation Authority shall approve all training programmes of the operators and service providers as provided in the Technical Instructions:
  - (a) Each operator holding a permanent approval to carry dangerous goods shall ensure that Personnel engaged in general cargo handlings have received training to carry out their duties in respect of dangerous goods. At a minimum , this training shall cover the areas identified in Table 1-4 and be to a depth sufficient to ensure that an awareness is gained of the hazards associated with dangerous goods and how to identify such goods ; and
  - (b) Aircraft crew members, passengers handling staff, and security staff employed by the operator or handling agents who deal with the screening of passengers and their baggage, have received training which, at a minimum, shall cover the areas identified in Table 1-4 and be to a depth sufficient to ensure that an awareness is gained of the hazards associated with dangerous goods, how to identify them and what requirements apply to the carriage of such goods by passengers.
- (2) All dangerous goods training programmes shall be subject to review and approval by the Authority.

### **18.10.4 TRAINING CURRICULUM**

- (1) Personnel must be trained in the requirements commensurate with their responsibilities. Such training must include:
  - (a) General familiarization training- which must be aimed at providing familiarity with the general provisions;
  - (b) Function-specific training- which must be provide detailed training the requirements applicable to the function for which that person is responsible; and
  - (c) Safety training- which must cover the hazards presented by dangerous goods, safe handling and emergency response procedures.
- (2) Personnel identified in the categories specified in Table 1-4, 1-5 or 1-6 must be trained or training must be verified prior to the person performing any duty specified in Table 1-4, 1-5, or 1-6.
- (3) Recurrent training must be provided every 24 months of previous training to ensure knowledge in current. However, if recurrent training is completed within the final three months of validity of previous training, the period of validity extends

- from the month on which the recurrent training was completed until 24 months from the expiry month of that previous training.
- (4) A test to verify understanding must be provided following training. Confirmation that the test has been completed satisfactorily is required.
  - (5) A record of training must be maintained which must include:
    - (a) The individual's name;
    - (b) The most recent training completion month;
    - (c) A description, copy or reference to training materials used to meet the training requirements;
    - (d) The name and address of the organization providing the training; and
    - (e) Evidence which shows that a test has been completed satisfactorily.
  - (6) Training records must be retained by the employer for minimum of 36 month from the most recent training completion month and must be made available upon request to the employee or Ghana Civil Aviation Authority.
  - (7) The subject matter relating to dangerous goods transport with which various categories of personnel should be familiar is indicated in table 1-4.
  - (8) Staff of operators not carrying dangerous goods as cargo or mail must be trained commensurate with their responsibilities. The subject matter to which their various categories of staff should be familiar with is indicated in Table 1-5.

*Note:- Security staff are required to be trained irrespective to whether the operator on which passenger or cargo is to be transported carries dangerous goods as cargo.*

*Note 2. – See 4.2.2 of Annex 6 – Operation of Aircraft, Part I – International Commercial Air Transport – Aeroplanes for surveillance of operations by a foreign operator.*

Table 1-4. Content of training courses

Aspects of transport of dangerous goods by air with which they should be familiar, as a minimum	Shippers and packers		Freight forwarders				Operators and ground handling agents					Security staff
	1	2	3	4	5	6	7	8	9	10	11	12
General philosophy	X	X	X	X	X	X	X	X	X	X	X	X
Limitations	X		X	X	X	X	X	X	X	X	X	X
General requirements for shippers	X		X			X						
Classification	X	X	X			X						X
List of dangerous goods	X	X	X			X				X		
Packing requirements	X	X	X			X						
Labelling and marking	X	X	X	X	X	X	X	X	X	X	X	X
Dangerous goods transport document and other relevant documentation	X		X	X		X	X					
Acceptance procedures						X						
Recognition of undeclared dangerous goods	X	X	X	X	X	X	X	X	X	X	X	X
Storage and loading procedures					X	X		X		X		
Pilots' notification						X		X		X		
Provisions for passengers and crew	X	X	X	X	X	X	X	X	X	X	X	X
Emergency procedures	X	X	X	X	X	X	X	X	X	X	X	X

**TABLE 1-4. CONTENT OF TRAINING COURSES****NOTE: - CATEGORIES**

- 1- Shippers and persons undertaking the responsibilities of shippers
- 2- Packers
- 3- Staff of freight forwarders involved in processing dangerous goods
- 4- Staff of freight forwarders involved in processing cargo or mail ( other than dangerous goods)
- 5- Staff of freight forwarders involved in the handling, storage and loading of cargo or mail.
- 6- Operator's and ground handling agents staff accepting dangerous goods
- 7- Operator's and ground handling agents staff accepting cargo and mail (other than dangerous goods).
- 8- Operator's and ground handling agents staff involved in the handling, storage and loading of cargo or mail and baggage.
- 9- Passenger handling staff
- 10- Flight crew members, loadmasters and load planners
- 11- Crew members (other than flight crew members)

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- 12- Security staff who are involved with the screening of passengers and their baggage or cargo or mail, e.g. security screeners, their supervisors and staff involved in implementing security procedures.

**Table 1-5. Content of training courses for operators not carrying dangerous goods as cargo or mail**

Contents	Categories of staff				
	13	14	15	16	17
General philosophy	X	X	X	X	X
Limitations	X	X	X	X	X
Labelling and marking	X	X	X	X	X
Dangerous goods transport document and other relevant documentation	X				
Recognition of undeclared dangerous goods	X	X	X	X	X
Provisions for passengers and crew	X	X	X	X	X
Emergency procedures	X	X	X	X	X

**NOTE:**

7- Operator's and ground handling agent's staff accepting cargo or mail (other than dangerous goods)

8- Operator's and ground handling agent's staff in the handling, storage and loading of cargo or mail (other than dangerous goods) and baggage

9- Passenger handling staff

10- Flight crew members, loadmaster and load planners

11- crew members (other than flight crew members)

Note 1- Depending on the responsibilities of the person, the aspects of training to be covered may vary from those shown in Table 1-4 and Table 1-5. For example, in respect of classification, staff involved in implementing security procedures (e.g. screeners and their supervisors) need only to be trained in the general properties of dangerous goods.

Note 2- The categories of personnel identified in Table 1-4 and 1-5 are not all encompassing. Personnel employed by or interacting with the aviation industry in areas such as passenger and cargo reservation centres, and engineering and maintenance, except when acting in a capacity identified in Table 1-4 or 1-5 should be provided with dangerous goods training in accordance with 18.10.2.

- (9) Staff of designated postal operators must be trained commensurate with their responsibilities. The subject matter to which their various categories of staff should be familiar with is indicated in table 1-6.
- (10) Dangerous goods training programmes for designated postal operators shall be approved by the Authority where the mail is accepted by the designated postal operator.
- (11) Dangerous goods training programmes required for entities other than operators and designated postal operators shall be approved as determined by the Authority.

**TABLE 1-6 CONTENT OF TRAINING COURSES FOR STAFF OF DESIGNATED POSTAL OPERATORS**

<i>Aspects of transport of dangerous goods by air with which they should be familiar, as a minimum</i>	<i>Designated postal operators</i>		
	<i>Categories of staff</i>		
	<i>A</i>	<i>B</i>	<i>C</i>
General philosophy	x	x	x
Limitations	x	x	x
General requirements for shippers	x		
Classification	x		
List of dangerous goods	x		
Packing requirements	x		
Labelling and marking	x	x	x
Dangerous goods transport document and other relevant documentation	x	x	
Acceptance of the dangerous goods listed in 1;2.3.2	x		
Recognition of undeclared dangerous goods	x	x	x
Storage and loading procedures			x
Provisions for passengers and crew	x	x	x
Emergency procedures	x	x	x

**NOTE:- CATEGORIES**

- A- Staff of designated postal operators involved in accepting mail containing dangerous goods*
- B- Staff of designated postal operators involved in processing mail (other than dangerous goods)*
- C- Staff of designated postal operators involved in the handling, storage and loading of mail*

**CATEGORY:**

13. Operator's and ground handling agent's staff accepting cargo or mail (other than dangerous goods)
14. Operator's and ground handling agent's staff involved in the handling, storage and loading of cargo or mail and baggage.
15. Passenger handling staff.
16. Flight crew members, loadmasters, load planners and flight operations officers/flight dispatchers.
17. Crew members (other than flight crew members).

**18.10.5 INSTRUCTOR'S QUALIFICATIONS**

- (1) Unless otherwise provided for by Ghana Civil Aviation Authority, instructors of initial and recurrent dangerous goods training programmes must have adequate instructional skills and successfully completed a dangerous goods training programme in the applicable category 6 and Dangerous Goods Instructional Techniques, prior to delivering such a dangerous goods training programme.
- (2) Instructors delivering initial and recurrent dangerous goods training courses must have recurrent in dangerous goods category 6 least every 36 month to enable continuous instructing such course. A person will be qualified as an Instructor for Dangerous Goods for both operators who carry or do not carry dangerous goods, if the below requirements by the Ghana Civil Aviation Authority are met:
  - (a) Successfully complete IATA Dangerous Goods Regulations (DGR)- Initial or Recurrent- Category 6;
  - (b) Successfully complete IATA a 5 day classroom in IATA Instructional Techniques;
  - (c) Present to the Authority your training curriculum and syllabus for approval;
  - (d) Present to the Authority a Compliance Statement to the following parts of these Directives;
  - (e) Present your dangerous goods training manual or curriculum to the Authority for evaluation and approval;
  - (f) Inspection of the training facility for approval;
  - (g) The Instructor should be able to demonstrate his instructional skills to the Authority.

*Note 1: See 18.12 for dangerous goods by mail.*

**18.11 COMPLIANCE****18.11.1 INSPECTION SYSTEMS**

- (1) Operators and other entities shall grant unlimited, unrestricted and unimpeded access to the Authority of their facilities and any necessary documents for the purpose of Inspection, surveillance and enforcement.
- (2) These surveillance activities shall include:
  - (a) inspecting dangerous goods consignments prepared, offered, accepted or transported by Operators and other entities.
  - (b) inspecting the practices of Operators and other entities.

(c) investigating alleged violations.

*Note: Guidance on dangerous goods inspections and enforcement may be found in the Supplement to the Technical Instructions (Part S-5, Chapter 1 and Part S-7, Chapters 5 and 6).*

*Note 2: See 4.2.2 of Annex 6 — Operation of Aircraft, Part I — International Commercial Air Transport — Aeroplanes for surveillance of operations by a foreign operator.*

### **18.11.2 FOREIGN AND DOMESTIC INSPECTIONS**

- (1) Foreign Air Operators who transport or wish to transport dangerous goods in and out of Ghana shall have their Dangerous Goods Authorization validated by the Authority.
- (2) Where the Director-General deems it necessary, the Validation process shall include a facilities inspection to be conducted by the Authority by the Authority when required.
- (3) Notwithstanding the provisions of Part 10 of the Ghana Civil Aviation (Flight Standards) Directives, the validation of this Authorization shall be renewable every two (2) years and shall be subject to the validity of the Validated Air Operator Certificate (VAOC).
- (4) Ghanaian AOC holders who transport or wish to transport Dangerous Goods shall go through the certification process stated by the Authority. An authorization for the Carriage of Dangerous Goods Certificate will be issued after a successful completion of the five phases of certification for Dangerous Goods. This authorization is renewable every two (2) years upon a successful completion of facilities base inspection.
- (5) Other entities involved in the carriage of dangerous goods shall be issued with a Dangerous Goods Authorisation following the completion of a five-phase certification. The dangerous goods authorisation shall be valid for a period of two (2) years and shall be renewed following completion of a facilities base inspection. The above compliance is applicable to all stakeholders who are involve in the transportation of dangerous goods by air.
- (6) For continuous compliance with this Directive, scheduled and unscheduled inspections shall be performed on both Ghanaian and foreign registered aircraft as well as facility inspections of other entities.

### **18.11.3 COOPERATION BETWEEN STATES**

Where necessary, the Republic of Ghana will participate in cooperative efforts with other States concerning violations of dangerous goods Directives, with the aim of eliminating such violations. Cooperative efforts include coordination of investigations and enforcement actions; exchanging information on a regulated

party's compliance history; joint inspections and other technical liaisons, exchange of technical staff, and joint meetings and conferences. Appropriate information exchanged shall include safety alerts, bulletins or dangerous goods advisories; proposed and completed regulatory actions; incident reports; documentary and other evidence developed in the investigation of incidents; proposed and final enforcement actions; and educational or outreach materials suitable for public dissemination.

#### **18.11.4 PENALTIES**

- (1) Any person who fails to comply with any provision in this Directive, Directive or any administrative rules made hereunder shall be deemed for the purposes of these Directives to have contravened that provision and shall be subject to a penalty as specified in Part 1 of these Directives.
- (2) Without prejudice to the generality of the provisions contained herein, a person, whether staff or otherwise shall be subject to such enforcement action in the event of breach of the Directives contained herein.

#### **18.12 DANGEROUS GOODS BY MAIL**

- (1) Dangerous goods shall not be permitted in mail, except as provided for in the Technical Instructions.
- (2) Where permitted, the Operator shall follow established procedures as contained in Universal Postal Union (UPU) Parcel Post Regulations and Letter Post Regulations for the control of the introduction of dangerous goods into air transport through postal services. Such procedures shall be strictly adhered to.

*Note: Guidance for approving the procedures established by designated postal operators to control the introduction of dangerous goods into air transport may be found in the Supplement to the Technical Instructions (Part S-1, Chapter 3).*

#### **18.13 DANGEROUS GOODS ACCIDENT AND INCIDENT REPORTING**

- (1) All incidents and accidents which occur within Ghana and involve the transportation of dangerous goods originating in or destined for another State shall be reported to the Authority within seventy-two (72) hours of its occurrence.
- (2) Each report made shall be followed by an occurrence report form in a form and manner acceptable to the Authority.
- (3) A suspected violation of the requirements in respect of undeclared or misdeclared dangerous goods in cargo, shall be reported to the Authority using the recommended form for reporting.
- (4) The reporter shall ensure that all details and relevant information are supplied and made available. There shall be evidence of non-compliance with the Technical

Instructions such that there was a potentially unsafe situation or not serious (eg. Misunderstanding of the requirements but not resulting in a potentially unsafe situation).

#### **18.14 DANGEROUS GOODS SECURITY PROVISIONS**

Security measures for Dangerous Goods shall be applicable to shippers, operators and other individuals or entities engaged in the transport of dangerous goods by air, and shall be taken to minimize theft or misuse of dangerous goods that may endanger persons, property or the environment. These measures shall be commensurate with security provisions specified in the Ghana Civil Aviation (Security) Directives, Instructions and the Technical Instructions.

#### **18.15 FIRST AID AND EMERGENCY MEDICAL KIT AT WAREHOUSE**

- (1) Aviation Handling Agencies and Operators shall have separate designated warehouse or area within the warehouse for dangerous goods storage.
- (2) Handling agents and Operators shall develop systems in mitigating occurrences as provided for in this Directive or the ICAO document on Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods (Doc 9481).
- (3) The Operator shall carry on board an aircraft transporting dangerous goods in and out of Ghana, the ICAO document on Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods (Doc 9481).

#### **18.16 FIRST AID KIT**

- (1) All Dangerous goods warehouses shall be well equipped with first aid and emergency medical kits. The list of contents of the first aid boxes at the warehouses shall be displayed outside the box with the expiration date of the various items in the first aid box. Names of staff trained on how to administer first aid and contact information shall be pasted on all first aid boxes. Fire extinguishers shall be placed at vantage points and dates on them shall be valid. Employees at cargo warehouses shall be required to produce certificates on fire fighting and first aid training upon request.
- (2) Dangerous goods posters, fire extinguishers signage, assembly point signage and relative dangerous goods signage shall be displayed at open places in the cargo warehouse.

##### **18.16.1 FIRST AID KIT LOCATION**

- (1) First-aid kits shall be distributed as evenly as practicable throughout the warehouse and shall be readily accessible to staff on duty at the warehouse.

- (2) The medical kits, when carried, shall be stored securely and kept free from dust, inactive and damaging temperatures.
- (3) Personal Protective Equipment shall be readily available to staff to be able to work safely in their field of work.
- (4) Spill kits shall be provided at warehouse to be able to control spillage.

#### **18.16.2 FIRST AID BOX CONTENTS**

All first aid boxes shall contain among others, the following: Different factors shall be taken into consideration in deciding the contents of first-aid kits and medical kits. The most common medical kits like the following must be in the first aid box:

- (a) Disposable gloves
- (b) Tweezers
- (c) Hemostat
- (d) Bandages
- (e) Wet gauze
- (f) Pair of scissors
- (g) Cotton
- (h) Antiseptic cream
- (i) Eye wash
- (j) Alcohol

#### **18.17 HELICOPTER OPERATIONS**

- (1) Due to the difference in the type of operations carried out by helicopters compared with aeroplanes, there may be circumstances when the full provisions of these Directives are not appropriate or necessary, due to the operations involving unmanned sites, remote locations, mountainous areas or construction site etc. In such circumstances and when appropriate, the Authority may grant an approval in order to permit the carriage of dangerous goods without all of the normal requirements of these Directives being fulfilled. When States other than the State of the Operator have notified ICAO that they require prior approval of such operations, approval must be obtained from the State of Origin and destination, as appropriate.
- (2) When loading dangerous goods for open carriage by a helicopter, consideration shall be given to the type of packing used and to the protection of those packings, where necessary, from the effect of airflow and weather (e.g. by damage from rain), in addition to the general loading provisions.

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- (3) When dangerous goods are carried suspended from a helicopter, the operator shall ensure that consideration is given to the dangers of static discharge upon landing or release of the load.
  
- (4) When helicopters are carrying passengers, approval may be granted to permit carriage of dangerous goods either:
  - (a) In the cabin, when those dangerous goods are associated with and accompanied by the passengers; or
  
  - (b) In cargo compartments that do not meet requirements of part 7;2.11.

# GHANA CIVIL AVIATION (FLIGHT STANDARDS) DIRECTIVES



## PART 18 –IMPLEMENTING STANDARDS

For ease of reference, the number assigned to each implementing standard corresponds to its Directives. For Example, IS 18.2.2(3) would reflect a standard required in subscription 8.2.2(3).

**IS: 18.2.2(3)                    TRANSPORTATION OF RADIOACTIVE MATERIALS**

- (1) Radioactive Materials (Class 7) shall be classified under special arrangement.
- (2) The Nuclear Regulatory Authority (NRA) of the Ghana Atomic Energy Commission develops recommended procedures for the safe transportation of radioactive materials.
- (3) To transport radioactive materials, the Operator shall seek prior approval from the NRA. A copy of the approval shall be presented to the Ghana Civil Aviation Authority.
- (4) An application form shall be given to the Operator to be filled.
- (5) Following a review of the completed application, an approval shall be issued to the Operator to transport Radioactive Materials.