

Safe Transport of Dangerous Goods by Air

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Your safety is our mission.

Safe Transport of Dangerous Goods by Air

Introduction

Doc 9284

Technical Instructions for the Safe
Transport of Dangerous Goods by Air

2019-2020 Edition



Approved and published by decision of the Council of ICAO

INTERNATIONAL CIVIL AVIATION ORGANIZATION

SAFE TRANSPORT OF DANGEROUS GOODS BY AIR



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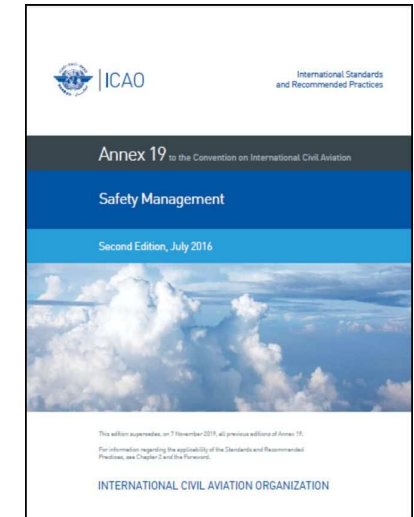
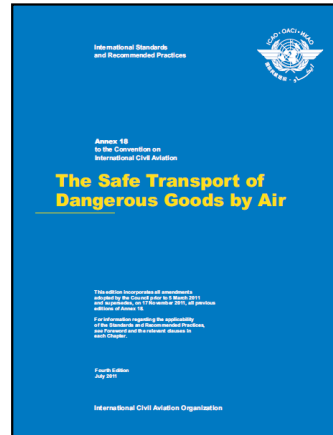
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INTERNATIONAL CIVIL AVIATION ORGANIZATION

- **Part 7 = Operator's responsibilities**
- ✓ **Chapter 1 - Acceptance procedures**
- ✓ **Chapter 2 - Storage and loading**
- ✓ **Chapter 3 - Inspection and decontamination**
- ✓ **Chapter 4 - Provision of information**
- ✓ **Chapter 5 - Provisions concerning passengers and crew**
- ✓ **Chapter 6 - Provisions to aid recognition of undeclared dangerous goods**
- ✓ **Chapter 7 - Helicopter operations**

OPERATOR'S RESPONSIBILITIES – ACCEPTANCE PROCEDURES

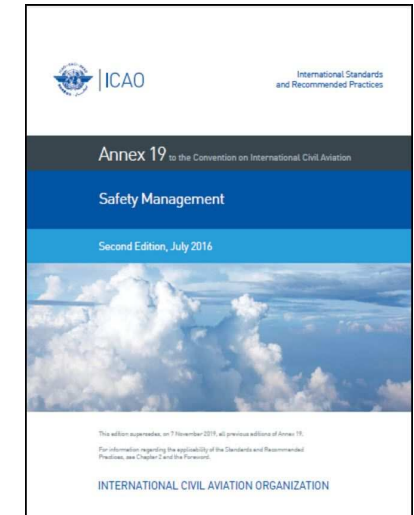
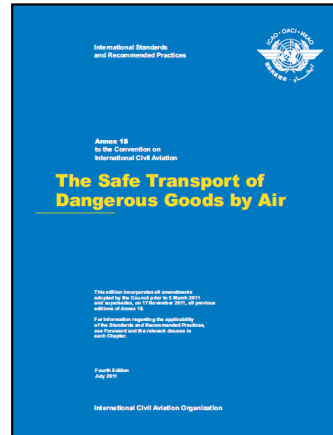
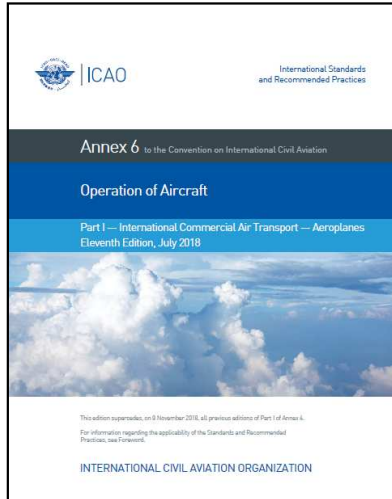
Relation between Annexes



- The **carriage** of **DG** is **included** in the scope of the operator's safety management system (**SMS**)
- Part 7 details the responsibilities of operators with regard to the acceptance, handling and loading of DG
- However, nothing contained herein should be interpreted as requiring an operator or its sub-contractors to transport a particular article or substance
- However, ground handling agents are subject to the operator's responsibilities of Part 7

OPERATOR'S RESPONSIBILITIES – ACCEPTANCE PROCEDURES

Relation between Annexes



➤ Risk assessment regarding safety

- ✓ To be in compliance with Annex 6 and Annex 19, operators operating commercial air transport **should include** in their **SMS**, a **risk assessment process** for the safe transport of DG
- ✓ This evaluation **should include** some **adequate provisions** allowing the **setting-up** of **measures** to guarantee the safe transport of DG, including lithium cells/batteries shipped as cargo

➤ Cargo acceptance procedure

✓ Operators' acceptance staff (or any sub-contractors' staff):

- **must** be adequately trained to **identify** and **detect** dangerous goods presented as general cargo

- **should** seek **confirmation** from **shippers** about the **contents** of any item of **cargo** where there are **suspensions** that it may contain **dangerous goods**, with the aim of preventing undeclared dangerous goods from being loaded on an aircraft as general cargo

→ **Acceptance procedure is the point where it becomes the responsibility of the operator to arrange for transport and carry consignments of DG when it is accepted for transport**

→ **the Operator is fully responsible of its sub-contractors**

➤ Acceptance of DG by Operators

✓ **Before accepting any DG item** aboard aircraft, operator **must ensure** that the consignment:

- is accompanied by **two copies** of the DGD, or
- is provided in **electronic form**, or
- is accompanied, where permitted, by **alternative** documentation

→ Paper DGD:

- ✓ **one** copy must **accompany** the consignment to final **destination**
- ✓ **one** copy must be **retained** by the operator at a location on the **ground**

→ Electronic form:

- ✓ information must be **available** to the operator at **all times** during transport to final **destination**

OPERATOR'S RESPONSIBILITIES – ACCEPTANCE PROCEDURES

➤ Acceptance check

✓ **Before accepting any DG consignment, operator must verify, by the use of a checklist:**

- **documentation**
- if the **quantity** of DG goods stated on the DGD is **within the limits** per package on passenger or cargo aircraft (as appropriate)
- **marking** of the package, overpack or freight container
- **proper shipping names, UN numbers, labels, and special handling instructions**
- **labelling** of the package, overpack or freight container
- **segregation**
- **leakage and integrity**

☞ **The operator must be able to identify the person who performed the acceptance check**

DANGEROUS GOODS CHECKLIST FOR A NON-RADIOACTIVE SHIPMENT

The recommended checklist appearing on the following pages is intended to verify shipments at origin.

Never accept or refuse a shipment before all items have been checked.

Is the following information correct for each entry?

SHIPPER'S DECLARATION FOR DANGEROUS GOODS (DGD)

	YES	NO*	N/A
1. Two copies in English and in the IATA format including the air certification statement [8.1.1, 8.1.2, 8.1.6.12]	<input type="checkbox"/>	<input type="checkbox"/>	
2. Full name and address of Shipper and Consignee [8.1.6.1, 8.1.6.2]	<input type="checkbox"/>	<input type="checkbox"/>	
3. If the Air Waybill number is not shown, enter it. [8.1.6.3]	<input type="checkbox"/>	<input type="checkbox"/>	
4. The number of pages shown [8.1.6.4]	<input type="checkbox"/>	<input type="checkbox"/>	
5. The non-applicable Aircraft Type Deleted or not shown [8.1.6.5]	<input type="checkbox"/>	<input type="checkbox"/>	
6. If full name of Airport or City of Departure or Destination is not shown, enter it. [8.1.6.6 and 8.1.6.7] Information is optional	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. The word "Radioactive" deleted or not shown [8.1.6.8]	<input type="checkbox"/>	<input type="checkbox"/>	
Identification			
8. UN or ID Number, preceded by prefix [8.1.6.9.1, Step 1]	<input type="checkbox"/>	<input type="checkbox"/>	
9. Proper Shipping Name and the technical name in brackets for asterisked entries [8.1.6.9.1, Step 2]	<input type="checkbox"/>	<input type="checkbox"/>	
10. Class or Division, and for Class 1, the Compatibility Group. [8.1.6.9.1, Step 3]	<input type="checkbox"/>	<input type="checkbox"/>	
11. Subsidiary Risk, in parentheses, immediately following Class or Division [8.1.6.9.1, Step 4]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Packing Group [8.1.6.9.1, Step 5]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quantity and Type of Packing			
13. Number and Type of Packages [8.1.6.9.2, Step 6]	<input type="checkbox"/>	<input type="checkbox"/>	
14. Quantity and unit of measure (net, or gross followed by "G", as applicable) within per package limit [8.1.6.9.2, Step 6]	<input type="checkbox"/>	<input type="checkbox"/>	
15. When different dangerous goods are packed in one outer packaging, the following rules are complied with:			
– Compatible according to Table 9.3.A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
– UN packages containing Division 6.2 [5.0.2.11(c)]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
– "All packed in one (type of packaging)" [8.1.6.9.2, Step 6(f)]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
– Calculation of "Q" value must not exceed 1 [5.0.2.11 (g) & (h); 2.7.5.6; 8.1.6.9.2, Step 6(g)]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Overpack			
– Compatible according to Table 9.3.A [5.0.1.5.1 and 5.0.1.5.3]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
– Wording "Overpack Used" [8.1.6.9.2, Step 7]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Packing Instructions			
17. Packing Instruction Number [8.1.6.9.3, Step 8]	<input type="checkbox"/>	<input type="checkbox"/>	
Authorizations			
18. Check all ventilable special provisions. The Special Provision Number if A1, A2, A51, A81, A88, A99 or A130 [8.1.6.9.4, Step 9]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Indication that governmental authorization is attached, including a copy in English and additional approvals for other items under [8.1.6.9.4, Step 9]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Additional Handling Information			
20. The mandatory statement shown for self-reactive and related substances of Division 4.1 and organic peroxides of Division 5.2, or samples thereof, for PBE and for fireworks [8.1.6.11.1, 8.1.6.11.2; 8.1.6.11.3 and 8.1.6.11.5]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

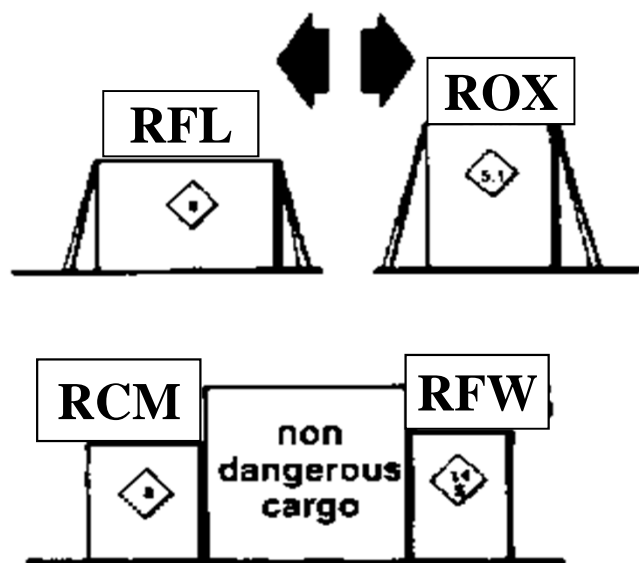
OPERATOR'S RESPONSIBILITIES – STORAGE & LOADING

- Loading **restrictions** on flight deck and for passenger aircraft
 - ✓ DG **must not** be carried in an **aircraft cabin** occupied by passengers or on the **flight deck** of an aircraft, **except**:
 - as permitted by 1;2.2.1 (**exceptions** for DG of the **operator**)
 - as permitted by 8;1 (**DG carried by Pax/Crew**)
 - as permitted by 2;7.2.4.1.1 (**radioactive** material, **excepted packages**)
 - ✓ DG may be carried in a **main deck cargo compartment of a passenger aircraft** (combi) provided that compartment meets all the certification requirements for a **Class B** or a **Class C** aircraft cargo compartment
 - ✓ DG bearing the “**Cargo aircraft only**” label **must not** be carried on a **passenger** aircraft
-
- ✓ State of Origin and the State of the Operator **may approve** the transport of DG in main deck cargo compartments of passenger aircraft that do not meet the previous requirements (Supplement S-7;2.2)
 - ✓ Additional requirements concerning the loading of dangerous goods for carriage by **helicopters** are found in Part 7, **chapter 7** (to be developed at the end of this part of presentation)

OPERATOR'S RESPONSIBILITIES – STORAGE & LOADING

➤ Segregation (aircraft, warehouse, parking stand, ...)

✓ DG which **might react** dangerously **one with another** must 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**



✓ This applies both to the **primary** or **subsidiary** hazard risk

✓ As a minimum, **Table 7-1** (Table 9.3.A) must be followed in order to maintain acceptable segregation

OPERATOR'S RESPONSIBILITIES – STORAGE & LOADING

➤ Segregation (aircraft, warehouse, parking stand, ...)

New !!

✓ **Packages/Overpacks** containing **Lithium batteries** prepared in accordance with **Section IA or IB** of Packing Instruction **965** (for Lithium **Ion, UN 3480**) and Packing Instruction **968** (for Lithium **Metal, UN 3090**), (*cells/batteries shipped alone*) **must not be stowed** on an aircraft **next to**, or **in a position that would allow interaction** with, packages/overpacks containing DG which bear a **Class 1** (explosives)(**other than Div. 1.4S**), **Div. 2.1** (flammable gases), **Class 3** (flammable liquids), **Div. 4.1** (flammable solids) or **Div. 5.1** (oxidizers) hazard label.



✓ To maintain **acceptable segregation** between packages and overpacks, the segregation requirements shown in **Table 7-1** must be followed

The segregation requirements apply based on all hazard labels applied on the package or overpack, irrespective of whether the hazard is the primary or subsidiary hazard

OPERATOR'S RESPONSIBILITIES – STORAGE & LOADING

➤ Segregation (aircraft, warehouse, parking stand, ...)

Table 7-1

Class Division	1 except 1.4.S	1.4.S	2.1	2.2 & 2.3	3	4.1	4.2	4.3	5.1	5.2	8	9  I-A I-B
1 except 1.4.S	Note 1	-----	X	X	X	X	X	X	X	X	X	X
1.4.S	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2.1	X	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	X
2.2 & 2.3	X	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3	X	-----	-----	-----	-----	-----	-----	-----	X	-----	-----	X
4.1	X	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	X
4.2	X	-----	-----	-----	-----	-----	-----	-----	X	-----	-----	-----
4.3	X	-----	-----	-----	-----	-----	-----	-----	-----	-----	X	-----
5.1	X	-----	-----	-----	X	-----	X	-----	-----	-----	-----	X
5.2	X	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
8	X	-----	-----	-----	-----	-----	-----	X	-----	-----	-----	-----
9  I-A I-B	X	-----	X	-----	X	X	-----	-----	X	-----	-----	-----

X = Incompatible

OPERATOR'S RESPONSIBILITIES – STORAGE & LOADING

➤ Segregation (aircraft, warehouse, parking stand, ...)

New !!

✓ **UN 3528, Engines or Machinery**, internal combustion, **flammable liquid** powered, **Engines or Machinery**, fuel cell, **flammable liquid** powered, **not be segregated** from **packages** containing dangerous goods in **Division 5.1**

In clear words,

All « Machinery and Engines UN3528 Class 3 »

MAY BE carried out next to/in close proximity

to packages of Division 5.1

(in opposition to the provisions of Table 7-1)

OPERATOR'S RESPONSIBILITIES – STORAGE & LOADING

➤ Separation - **Explosives** (Ref. Note 1 & 2)

✓ **Only** explosives in **Division 1.4**, Compatibility Group **S**, are **permitted** to be transported on **passenger** aircraft, and may be **stowed** with **explosives** in **all compatibility groups**

✓ **Only** the following explosives may be transported on a **cargo** aircraft:

– **Division 1.3**: Compatibility Groups **C, G**

– **Division 1.4**: Compatibility Groups **B, C, D, E, G, S**



and must respect **segregation Table 7-2** (must be loaded into **separate ULD** or into **different positions** and **separated** by other cargo with a minimum separation distance of **2 m**)

<i>Division and compatibility group</i>	1.3C	1.3G	1.4B	1.4C	1.4D	1.4E	1.4G	1.4S
1.3C			X					
1.3G			X					
1.4B	X	X		X	X	X	X	
1.4C			X					
1.4D			X					
1.4E			X					
1.4G			X					
1.4S								

OPERATOR'S RESPONSIBILITIES – STORAGE & LOADING

- Separation – **Radioactive Material (from persons)**
 - ✓ The separation **distances** to keep exposure to radiation are shown in **Tables 7-3 and 7-4** and are minimum values (from the **surface** of the **packages**, overpacks or freight containers to the nearest **inside surface** of the **passenger cabin** or **flight deck**)
 - ✓ Greater distances should be used where feasible
 - ✓ **As far as possible**, packages of radioactive materials stowed in **underfloor** cargo compartments of passenger aircraft should be placed **on the compartment floor**
- These distances are based on transport Index (TI)



**No TI
activity**



- **Table 7-3** (Table 10.9.C) provides distances for **TI** from **0 to 50**
- **Table 7-4** (Table 10.9.D) provides distances for **TI** from **50.1 to 300**

OPERATOR'S RESPONSIBILITIES – STORAGE & LOADING

➤ Separation – **Radioactive** Material

Table 7-3 (10.9.C)

Table 7-3. Minimum distance from surface of packages, overpacks and freight containers of radioactive material to the nearest inside surface of passenger cabin or flight deck partitions or floors, irrespective of carriage duration

<i>Total sum of transport indexes</i>	<i>Minimum distance (metres)</i>
0.1 – 1.0	0.30
1.1 – 2.0	0.50
2.1 – 3.0	0.70
3.1 – 4.0	0.85
4.1 – 5.0	1.00
5.1 – 6.0	1.15
6.1 – 7.0	1.30
7.1 – 8.0	1.45
8.1 – 9.0	1.55
9.1 – 10.0	1.65
10.1 – 11.0	1.75
11.1 – 12.0	1.85
12.1 – 13.0	1.95
13.1 – 14.0	2.05
14.1 – 15.0	2.15
15.1 – 16.0	2.25
16.1 – 17.0	2.35
17.1 – 18.0	2.45
18.1 – 20.0	2.60
20.1 – 25.0	2.90
25.1 – 30.0	3.20
30.1 – 35.0	3.50
35.1 – 40.0	3.75
40.1 – 45.0	4.00
45.1 – 50.0	4.25

OPERATOR'S RESPONSIBILITIES – STORAGE & LOADING

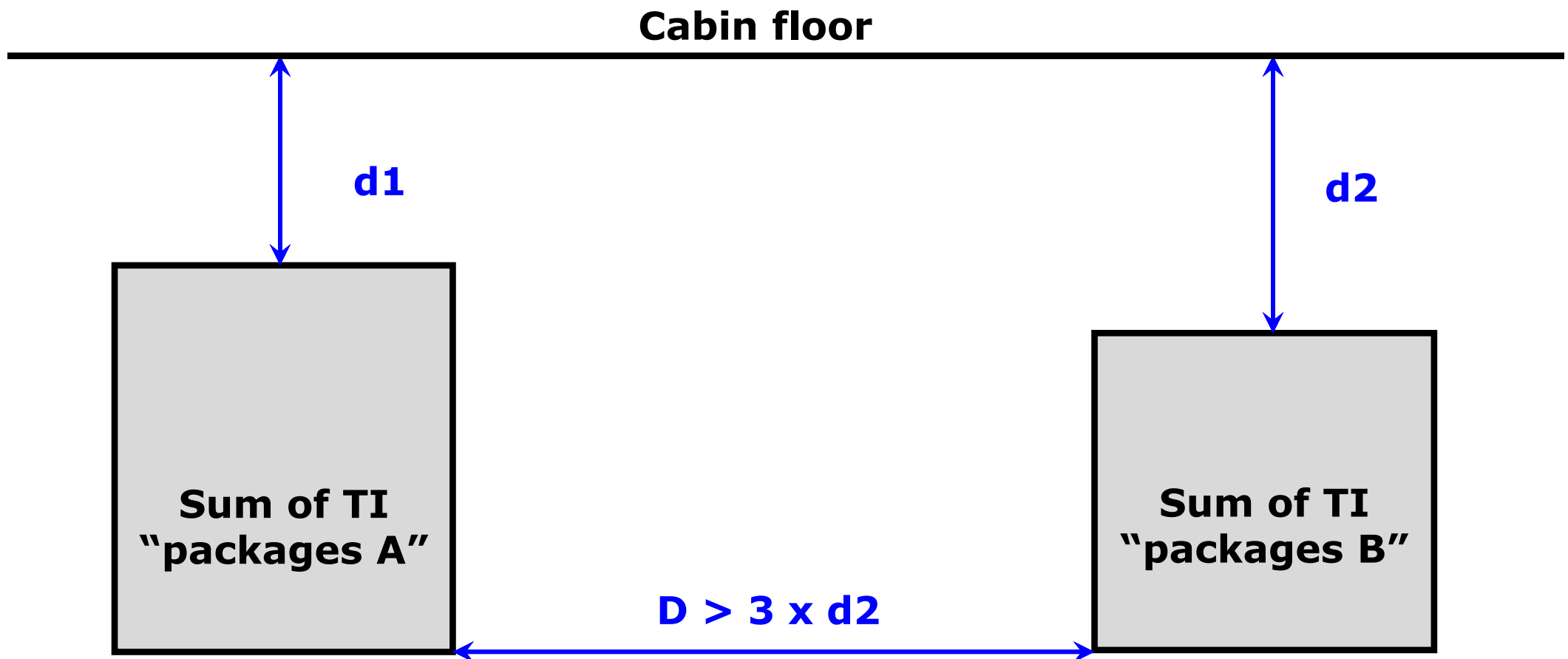
➤ Separation – **Radioactive Material** Table 7-4(10.9.D)–**Cargo Aircraft Only**

Table 7-4. Minimum distance from surface of packages, overpacks and freight containers of radioactive material, carried by cargo aircraft only, to the nearest inside surface of the flight deck partitions or floor, or other areas occupied by personnel, irrespective of carriage duration

<i>Total sum of transport indexes</i>	<i>Minimum distance (metres)</i>	<i>Total sum of transport indexes</i>	<i>Minimum distance (metres)</i>
50.1 – 60.0	4.65	180.1 – 190.0	8.55
60.1 – 70.0	5.05	190.1 – 200.0	8.75
70.1 – 80.0	5.45	200.1 – 210.0	9.00
80.1 – 90.0	5.80	210.1 – 220.0	9.20
90.1 – 100.0	6.10	220.1 – 230.0	9.40
100.1 – 110.0	6.45	230.1 – 240.0	9.65
110.1 – 120.0	6.70	240.1 – 250.0	9.85
120.1 – 130.0	7.00	250.1 – 260.0	10.05
130.1 – 140.0	7.30	260.1 – 270.0	10.25
140.1 – 150.0	7.55	270.1 – 280.0	10.40
150.1 – 160.0	7.80	280.1 – 290.0	10.60
160.1 – 170.0	8.05	290.1 – 300.0	10.80
170.1 – 180.0	8.30		

➤ Separation – **Radioactive** Material

✓ Depending of the different **groups** of packages, minimum distances have to be calculated as shown



OPERATOR'S RESPONSIBILITIES – STORAGE & LOADING

- Separation – **Radioactive Material (from animals)**
- ✓ **Categories II – Yellow** and **III – Yellow** packages, overpacks or freight containers must be **separated** from **live animals** by a distance of at least **0.5 meter** for journeys **not exceeding 24 hours**, and by a distance of at least **1.0 meter** for journeys **longer than 24 hours**.



OPERATOR'S RESPONSIBILITIES – STORAGE & LOADING

- Separation – **Radioactive Material (undeveloped photographic films)**
- ✓ **Categories II – Yellow and III – Yellow packages**, overpacks or freight containers must be separated to these items
- ✓ The minimum separation **distances** to be applied are shown in **Table 7-8 (10.9.E)** (from the **surface** of the packages, overpacks or freight containers to the surface of the packages of undeveloped photographic films or plates)

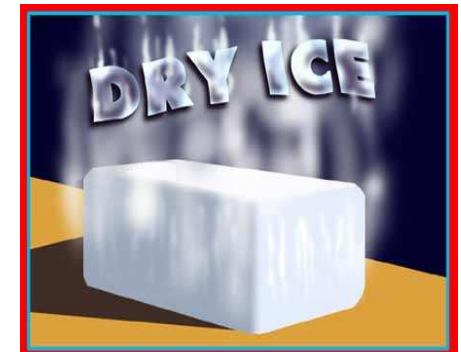
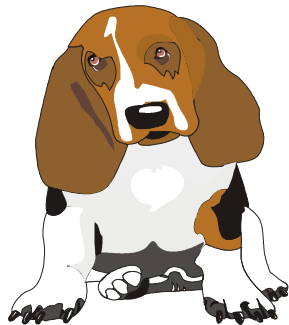
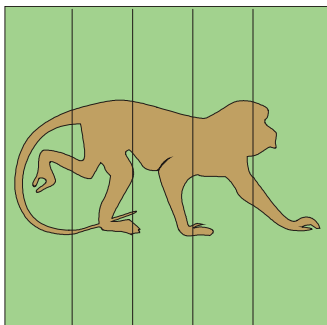
Table 7-8. Minimum distance in metres from surface of each package, overpack or freight container of radioactive material to undeveloped photographic films or plates, for carriage lasting up to 48 hours

Total sum of transport indexes	Duration of carriage					
	2 hours or less	2-4 hours	4-8 hours	8-12 hours	12-24 hours	24-48 hours
1	0.4	0.6	0.9	1.1	1.5	2.2
2	0.6	0.8	1.2	1.5	2.2	3.1
3	0.7	1.0	1.5	1.8	2.6	3.8
4	0.8	1.2	1.7	2.2	3.1	4.4
5	0.8	1.3	1.9	2.4	3.4	4.8
10	1.4	2.0	2.8	3.5	4.9	6.9
20	2.0	2.8	4.0	4.9	6.9	10.0
30	2.4	3.5	4.9	6.0	8.6	12.0
40	2.9	4.0	5.7	6.9	10.0	14.0
50	3.2	4.5	6.3	7.9	11.0	16.0

OPERATOR'S RESPONSIBILITIES – STORAGE & LOADING

➤ Loading – Dry Ice – UN 1845

- ✓ If shipped by the operator, or when used as a refrigerant for other commodities, may be carried provided the operator has made suitable arrangements dependent on the aircraft type and its ventilation rate (maximum possible quantity), the method of packing and stowing (Packing Instruction 954), whether animals will be carried on the same flight (starvation of oxygen), and other factors
- ✓ The operator must ensure that ground staff are informed that the dry ice is being loaded or is on board the aircraft.

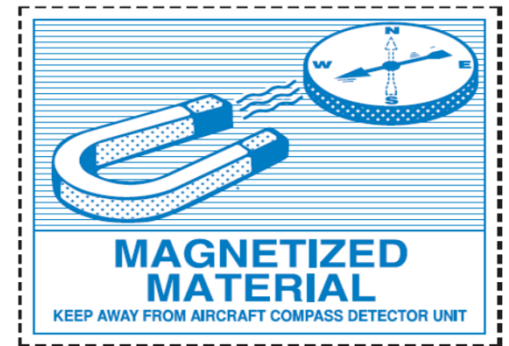


OPERATOR'S RESPONSIBILITIES – STORAGE & LOADING

➤ Loading – **Magnetized Material** – UN 2807

✓ Magnetized material must be loaded so that headings of aircraft **compasses** are **maintained** within their established **tolerances**

✓ Distances are given in **Packing Instruction 953** (from 2.1 to 4.6 m)



➤ Loading – **Polymeric beads, expandable** – UN 2211

Plastics Moulding Compound – UN 3314

✓ A total of **not more than 100 kg net mass** may be carried in any inaccessible hold on any aircraft (**Packing Instruction 957**)

➤ Loading – **Self-Reactive Substances of Div. 4.1 and Organic Peroxides of Div. 5.2**

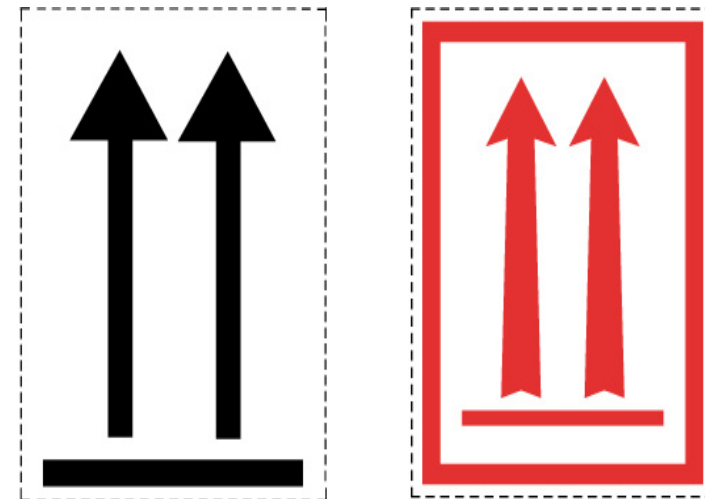
✓ Such substances must be **shaded from direct sunlight**, stored **away from** all sources of **heat** in a **well-ventilated** area



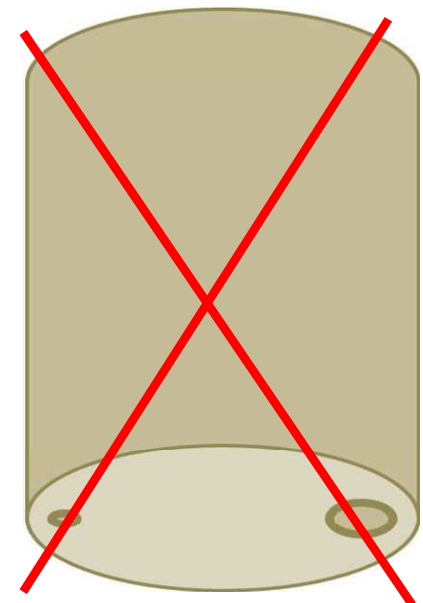
OPERATOR'S RESPONSIBILITIES – STORAGE & LOADING

➤ Handling & Loading – Liquids DG

✓ During the course of air transport, a package of dangerous goods bearing the **package orientation label** must be **loaded** and **stowed** aboard an aircraft and **handled** at **all times** in accordance with such a label



✓ **Single** packagings with **end closures** containing liquid dangerous goods must be loaded and stowed aboard an aircraft with those **closures upwards**, notwithstanding that such single packages may also have side closures



➤ Loading of **battery-powered mobility aids** carried by passengers under provisions of Part 8

☞ **Securing and Protection**

→ **Whatever** the type of the **battery** (spillable, non-spillable or lithium)

✓ **The operator shall secure**, by use of **straps, tie-downs** or other **restraint devices**, the battery-mobility aids with installed batteries

✓ The mobility aids, the batteries, electrical cabling and controls **must be protected** from **damage**, including by the **movement of baggage, mail** or **cargo**

OPERATOR'S RESPONSIBILITIES – STORAGE & LOADING

➤ Loading of **battery-powered mobility aids** carried by passengers under provisions of Part 8

→ mobility aids powered by **non-spillable wet batteries**

✓ The **operator** must **verify** that:

☞ the **passenger** has **confirmed** that the batteries are non-spillable wet batteries that **complies** with Special Provision **A67**

☞ their **terminals** are **protected** from **short circuits** (e.g. by being enclosed within a battery container)

☞ each **battery** is either:

- **securely attached** to the mobility aid and the **electrical circuits** are **isolated** following the **manufacturer's instructions**; or

- if the mobility aid is **specifically designed** to **allow it** to be, **removed by the user**, following the **manufacturer's instructions**

☞ a **maximum** of **one spare** battery is carried per passenger

OPERATOR'S RESPONSIBILITIES – STORAGE & LOADING

➤ Loading of **battery-powered mobility aids** carried by passengers under provisions of Part 8

→ mobility aids powered by **non-spillable wet batteries**

Each time a **battery** is **removed** from the mobility aid,
and for each **spare battery**

✓ The **operator** must **ensure** that they are carried in **strong, rigid packagings, protected from short circuit and stowed in the cargo compartment**

« **Notoc ...** »

✓ The **operator** must **inform** the **pilot-in-command** of the **location** of **any mobility aids with installed batteries, removed batteries and spare batteries**

OPERATOR'S RESPONSIBILITIES – STORAGE & LOADING

➤ Loading of **battery-powered mobility aids** carried by passengers under provisions of Part 8

→ mobility aids powered by **spillable wet batteries**

✓ The **operator** must **verify** that:

☞ the battery **terminals** are **protected** from **short circuits** (e.g. by being enclosed within a battery container)

☞ the **battery** is fitted, where feasible, with **spill resistant-vent caps**

☞ **each battery** is:

- securely **attached** to the mobility aid and the **electrical circuits** are **isolated** following the **manufacturer's instructions**; or

- **removed** from the mobility aid following the **manufacturer's instructions** if the mobility aid cannot be **loaded, stowed, secured** and **unloaded** always in an **upright position** or if the mobility aid does not **adequately protect** the battery

OPERATOR'S RESPONSIBILITIES – STORAGE & LOADING

➤ Loading of **battery-powered mobility aids** carried by passengers under provisions of Part 8

→ mobility aids powered by **spillable wet batteries**

If the batteries are **removed**

✓ The **operator** must **carry** them in **strong, rigid** packagings, as follows:

- packagings must be **leak-tight, impervious** to battery fluid and **protected** against being **overturned** by **securing** them to **pallets** or in **cargo compartments** using **appropriate means** of securement

- batteries must be **protected** against **short circuits, secured upright** in these packagings and surrounded by compatible **absorbent** material **sufficient** to **absorb** their **total liquid** contents

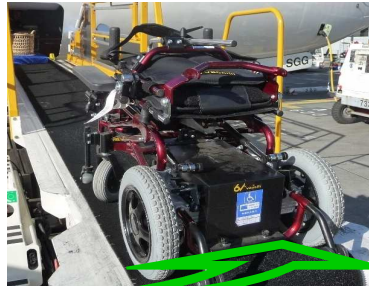
- packagings must be **marked** "*Battery, wet, with wheelchair*" or "*Battery, wet, with mobility aid*" and be **labelled** with a "**Corrosive**" label and with package **orientation labels**

OPERATOR'S RESPONSIBILITIES – STORAGE & LOADING

➤ Loading of **battery-powered mobility aids** carried by passengers under provisions of Part 8

→ mobility aids powered by **spillable wet batteries**

In clear words ...



Or...



« **Notoc ...** »

✓ The **operator** must **inform** the **pilot-in-command** of the **location** of **any mobility aids** with **installed** batteries and **removed** batteries

OPERATOR'S RESPONSIBILITIES – STORAGE & LOADING

➤ Loading of **battery-powered mobility aids** carried by passengers under provisions of Part 8

→ mobility aids powered by **lithium ion batteries**

✓ The **operator** must **verify** that:

☞ the battery **terminals** are **protected** from **short circuits** (e.g. by being enclosed within a battery container)

☞ **each battery** is:

- securely **attached** to the mobility aid and the **electrical circuits** are **isolated** following the **manufacturer's instructions**; or

- **removed** by the user, if the mobility aid is **specifically designed** to **allow it to be**, following the **manufacturer's instructions**

☞ the **removed** battery does not exceed **300 Wh** and that its **spare** battery does not exceed **300 Wh** or its **two spare** batteries do not exceed **160 Wh** each

OPERATOR'S RESPONSIBILITIES – STORAGE & LOADING

➤ Loading of **battery-powered mobility aids** carried by passengers under provisions of Part 8

→ mobility aids powered by **lithium ion batteries**

Each time a **battery** is **removed** from the mobility aid,
and for each **spare battery**

✓ The **operator** must **ensure** that they are **carried** in the **cabin** and **protected** from damage (e.g., by placing each battery in a protective pouch) and the battery **terminals protected** from short circuit (by insulating the terminals, e.g. by taping over exposed terminals)

« **Notoc ...** »

✓ The **operator** must **inform** the **pilot-in-command** of the **location** of **any mobility aids with installed lithium ion batteries, removed batteries and spare batteries**

➤ Loading on a **cargo** aircraft – **Requirements & Accessibility**

✓ Packages or overpacks of DG bearing the “**Cargo aircraft only**” label must be loaded in accordance with one of the following provisions:

– in a **Class C** aircraft cargo **compartment**

OR

– in a **ULD equivalent** to **Class C** aircraft cargo compartment standards

OR

– in such a manner that in the **event** of an **emergency** involving such DG, a **crew member** or other **authorized person** can **access** to them, and can **handle** and, where size and mass permit, **separate** them from other cargo

OR

– **external carriage** by an **helicopter**

OR

– with the **approval** of the **State** of the **Operator**, for **helicopter** operations, in the **cabin** (see Supplement Part S-7;2.4)

OPERATOR'S RESPONSIBILITIES – STORAGE & LOADING

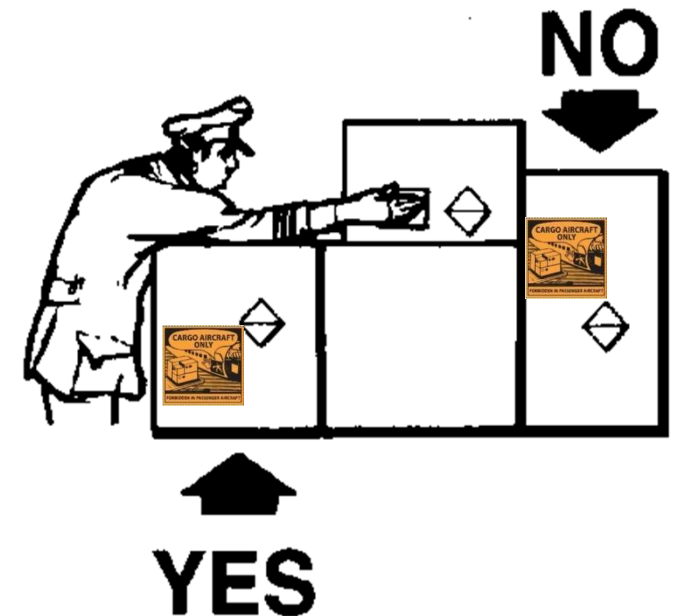
➤ Loading on a **cargo** aircraft – **Requirements & Accessibility**

✓ Accessibility requirements **do not apply to:**

- **Flammable liquids (Class 3), Packing Group III, other than those with a subsidiary risk of Class 8**
- **Toxic Substances (Division 6.1) with no subsidiary risk other than Class 3**
- **Infectious Substances (Division 6.2)**
- **Radioactive Material (Class 7)**
- **Miscellaneous Dangerous Goods (Class 9)**

+ New !!

- **Engines/Machinery UN3528** « **Class 3** »
(flammable liquid powered)
- **Engines/Machinery UN3529** « **Division 2.1** »
(flammable gas powered)



OPERATOR'S RESPONSIBILITIES – STORAGE & LOADING

- Loading on a **cargo** aircraft – **Requirements & Accessibility**
- ✓ Referring to **Doc 9481 AN/928**, Emergency Response Guidance book:
 - **Class A** cargo or baggage compartment: (e.g. small aircrafts, Beech, ATR, ...)
 - **fire** would be easily **discovered** by a **crew member** at his/her station
 - each part of the compartment is **easily accessible in flight**
 - **Class B** cargo or baggage compartment: (e.g. Combi aircrafts)
 - with **sufficient access in flight** to enable a **crew** member to effectively **reach** any part of the compartment with the contents of a **hand fire extinguisher**
 - **no** hazardous quantity of **smoke**, **flames** or **extinguishing agent** will enter any compartment occupied by the **crew** or **passengers**
 - equipped with **smoke** or **fire detector** to give **warning** at the **cockpit**
 - **Class C** cargo/baggage compartment: (not meeting Class A or B requirements):
 - equipped with **smoke** or **fire detector** to give **warning** at the **cockpit**
 - equipped with a **built-in fire-extinguishing** system **controllable from cockpit**
 - means to **exclude smoke**, **flames**, or **extinguishing agent** from any compartment occupied by the crew or passengers
 - means to **control ventilation** and draughts within the compartment as the extinguishing agent used can control any fire starting within the compartment

OPERATOR'S RESPONSIBILITIES – STORAGE & LOADING

- Loading on a **cargo** aircraft – **Requirements & Accessibility**
- ✓ Referring to **Doc 9481 AN/928**, Emergency Response Guidance book:
 - **Class D** cargo or baggage compartment:
 - a fire occurring in it will be completely confined without endangering the safety of the aeroplane or **the occupants**
 - means to **exclude smoke, flames, or noxious gases** from any compartment occupied by the crew or passengers
 - **ventilation** and draughts are **controlled within each compartment** so that any **fire** likely to occur in the compartment will **not progress** beyond safe limits
 - consideration is given to the **effect of heat** within the compartment on adjacent critical parts of the aeroplane
 - **Class E** cargo or baggage compartment: (main deck of cargo aircrafts)
 - equipped with **smoke** or **fire detector** to give **warning** at the **cockpit**
 - means of **shutting off ventilating airflow** from the compartment, **controls** for these means are **accessible** to the flight crew in the **cockpit**
 - means to **exclude smoke, flames, or noxious gases**, from the **cockpit**
 - required crew **emergency exits accessible** under any cargo loading conditions

OPERATOR'S RESPONSIBILITIES – STORAGE & LOADING

➤ Loading on a cargo aircraft – Requirements & Accessibility

✓ Referring to **Doc 9481 AN/928**, Emergency Response Guidance book:

→ **Class A** cargo compartments are **small cargo compartments** that may be **located between the flight deck** and the **passenger cabin** or **adjacent to the galley area** or at the **back of the aircraft**

→ **Class B** cargo compartment is usually much **larger than a Class A** cargo compartment and can be **located in an area remote from the flight deck**. Class B cargo compartments are found on **“combi”** aircraft between the flight deck and the passenger cabin or behind the passenger cabin at the rear of the aircraft

→ **Class C** cargo compartment may have **two fire extinguishing systems**, enabling a **second charge** of extinguishant to be fired into the cargo compartment some time **after** the fire has initially been controlled by the **first charge**

→ Instead of being equipped with fire detection and extinguishing systems, **Class D** cargo compartments are designed to control a fire by **severely restricting the supply of oxygen**. Class D cargo compartments are to be found **under the passenger cabin floor** on **most jet transport aircraft**. However, it must be appreciated that certain dangerous goods are themselves oxygen producers. Therefore, it cannot be assumed that a fire in a Class D cargo compartment will necessarily self-extinguish

→ **Class E** cargo compartment normally comprises the **entire main deck** compartment of a **cargo aircraft**

OPERATOR'S RESPONSIBILITIES – STORAGE & LOADING

➤ Loading on a **cargo** aircraft – **Requirements & Accessibility**

✓ Referring to **Doc 9481 AN/928**, Emergency Response Guidance book:

→ **Conventional passenger** aeroplanes are usually fitted with either **Class C** or **Class D** cargo compartments under the passenger cabin

→ **Cargo** aeroplanes are usually fitted with a **Class E main deck** cargo compartment and with **Class D and/or Class C underfloor** cargo compartments

→ **“Combi”** aeroplanes are usually fitted with a **Class B main deck** cargo compartment, either in front or behind the passenger cabin and with a **Class C and/or Class D** cargo compartment **under the floor**

→ **Smaller commuter** aeroplanes, if not fitted as a conventional passenger one with a **Class D** cargo compartment, could be equipped with only a **Class A** cargo compartment, usually positioned in the area adjacent to the flight deck

→ **Helicopters** are capable of carrying freight either in the **main cabin** (in a **Class A** cargo compartment) or under the cabin floor

The cargo compartment **under the floor** has **no classification** and the compartment is not capable of withstanding fire for any length of time. Some helicopters have cargo compartments which are at the rear of the aircraft and which are inaccessible from inside the helicopter. These cargo compartments are usually small and they are not fitted with any fire detection systems, extinguishing systems or liners

OPERATOR'S RESPONSIBILITIES – STORAGE & LOADING

➤ Securing of DG

✓ The operator must:

– **secure** dangerous goods **in the aircraft** in a manner that will **prevent any movement**

– **protect** the packages of DG from **being damaged**, including by the movement of baggage, mail, stores or other cargo

✓ For packages or overpacks containing **radioactive material**, the **securing** must be adequate to ensure that the **separation** requirements are met **at all times**.



OPERATOR'S RESPONSIBILITIES – STORAGE & LOADING

➤ Identification of ULD containing DG - TAG

✓ Each unit load device containing **DG** requiring hazard label must display an identification tag on its **exterior** indicating **DG** are contained **within the ULD**, **unless** those hazard class labels are themselves visible

✓ It must be **legibly marked** with the **primary** and **subsidiary** hazard **class(es)** or **division(s)** numbers of the DG

✓ If the ULD contains **CAO goods**, tag **must indicate** that the ULD can be loaded only on a cargo aircraft (or CAO label visible)

✓ When placed inside a **protective tag holder**, the **information** on the identification tag must be **legible** and **visible**

*Note: The tag must be **removed** from the ULD **immediately** after the **DG** have been **unloaded**.*

DHL		CONTAINER / PALLET
		No.
DESTINATION		
NET WEIGHT (Kg)		
TARE WEIGHT (Kg)		
TOTAL		
LOADED	FLIGHT	POSITION ON A/C
TRANSFER AT	FLIGHT	POSITION ON A/C
CONTENTS		
REMARKS		

Handwritten text in the 'REMARKS' field: ICE
C.I.9

➤ Inspection for damage or leakage – decontamination

- ✓ It is the **operator's responsibility** to ensure all packages, overpacks or ULD containing DG are **not loaded** onto an aircraft **unless inspection** has been performed **immediately prior to loading** and found **free** from evidence of **leakage** or **damage**
- ✓ If **evidence** of damage or leakage is **found**, the **position** where the DG or ULD was stowed on the aircraft must be **inspected** for damage or contamination and any **contamination removed**
- ✓ If baggage or cargo **not identified** as containing DG has been contaminated and if it is suspected that DG may be the cause of the contamination, the operator must take reasonable steps to:
 - **identify** the nature and source of the **contamination** before proceeding with the loading of the contaminated baggage/cargo
 - **isolate** the baggage/cargo and take appropriate steps to **nullify** any identified **hazard** before the baggage/cargo is transported further by air

OPERATOR'S RESPONSIBILITIES – INSPECTION & DECONTAMINATION

➤ Inspection for damage or leakage – decontamination

- ✓ In case of **infectious substance damage** or **leakage**, operator must:
 - **avoid handling** the package or keep handling to a **minimum**
 - **inspect adjacent packages** for contamination and put aside any that may have been contaminated
 - **inform** the appropriate **public health** authority or **veterinary authority** and **provide information** on any other **countries of transit** where persons may have been exposed to danger
 - **notify** the **shipper** and/or the **consignee**
- ✓ In case of **radioactive material** damage or **leakage**:
 - **access** to the package must be **restricted** and a **qualified person** must **assess** the extent of **contamination** and the resultant **radiation** level of the package
 - **aircraft** must be **decontaminated** by a **qualified person** and must not be re-used unless the contamination and radiation level are under limits fixed



OPERATOR'S RESPONSIBILITIES – PROVISION OF INFORMATION

➤ Information to Pilot-In-Command (PIC) – NOTOC

✓ **As early as practicable before departure** of the aircraft, but **in no case later** than when the **aircraft moves** under its **own power**, the operator must:

- **provide** the **PIC** with accurate and **legible written** or **printed** information concerning dangerous goods that are to be carried as cargo

- **provide** personnel with responsibilities for operational control of the aircraft (e.g. the **flight operations officer**, **flight dispatcher**, ...) with the **same information** that is required to be provided to the PIC (e.g. a copy of the written information provided to the PIC)

- Each **operator must specify** the **personnel** (job title or function) to be provided this information in their **operations manual** and/or **other appropriate manuals**

- For **helicopter** operations, with the **approval** of the **State** of the **Operator**, the **information** provided to the pilot-in-command **may be abbreviated** (see Supplement Part S-7;4.8)

OPERATOR'S RESPONSIBILITIES – PROVISION OF INFORMATION

➤ Information to Pilot-In-Command (PIC) – NOTOC

✓ Information **must** include: (general case)

- the **date** of the flight - the **air waybill number**
 - the **proper shipping name** and **UN Number** or **ID number**
 - the **class** or **division risk**, and **subsidiary risk(s)**
 - the **packing group**
 - the **number of packages** and their **exact loading location**
 - the **net quantity**, or **gross mass** if applicable, of **each package**
 - for **radioactive** material the **number of packages**, their **category**, their **transport index (TI)** and their **exact loading location**
 - whether the package must be carried on **cargo aircraft only (CAO)**
 - the **aerodrome** at which the package(s) is to be **unloaded**
- ✓ For **UN 1845 (dry ice)**, information **may be replaced by** the **UN number**, **proper shipping name**, **class**, **total quantity in each hold** on the aircraft and the **aerodrome** at which the package(s) is to be **unloaded** need to be provided
- ✓ For **UN 3480 (Lithium ion batteries)** and **UN 3090 (Lithium metal batteries)**, information **may be replaced by** the **UN number**, **proper shipping name**, **class**, **total quantity at each specific loading location**, and whether the package must be carried on a **cargo only aircraft** need to be provided

OPERATOR'S RESPONSIBILITIES – PROVISION OF INFORMATION

➤ Information to Pilot-In-Command (PIC) – NOTOC

✓ Information provided to the PIC:

– **must** include a **signed** confirmation from the **person responsible for loading** the aircraft that there was **no evidence** of any **damage** or **leakage**

– **should** be presented on a **dedicated form** (not by means of air waybills, dangerous goods transport documents, invoices, etc ...)

✓ **PIC must signed** a copy

✓ **NOTOC must be readily available** to the **PIC** during **flight**

✓ **A copy of the NOTOC must be retained** on the **ground**, and must be readily **accessible** to responsible **ground personnel until after** the **arrival** of the flight

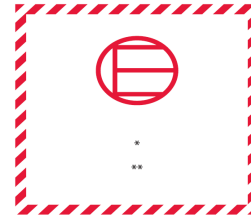
SPECIAL LOAD - NOTIFICATION TO CAPTAIN																
Station of Loading		Flight Number		Date		Aircraft Registration		Prepared by						Emergency contact Name and phone number		
DANGEROUS GOODS																
Station of Unload	Air Waybill Number	Proper Shipping Name			Class or Div. for Class 1 compart. Grp.	UN or ID Number	Sub Risk	DRILL CODE	Number of Packages	Net. Qty or Tra. Index. per Pack.	Radioactive Mat. Categ.	UN Packing Group	IMP Code	CAO	Loaded	
															ULD ID	POSITION
OTHER SPECIAL LOAD																
Stat. of Unload	Air Waybill Number	Contents and Description			Number of Packages	Quantity		Supplementary Information				Code		Loaded		
														ULD ID	POSITION	
Loading Supervisor's Signature		Captain's Signature :				Other information										

OPERATOR'S RESPONSIBILITIES – PROVISION OF INFORMATION

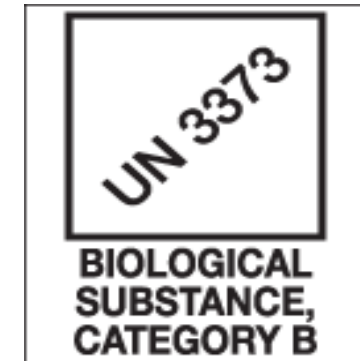
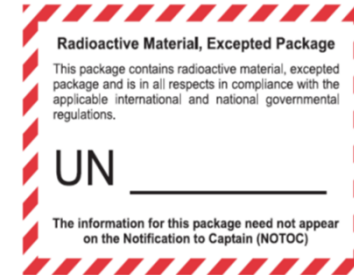
➤ Information to Pilot-In-Command (PIC) – NOTOC

✓ DG which **need not to appear on the information** provided to the PIC:

– **Excepted DG**



– **Radioactive Material, excepted packages**



– **Biological Substances, Category B – UN3373**

– **Magnetized Material – UN2807**



– **Genetically modified organisms and micro-organisms – UN3245**

– **Lithium-Ion/Lithium-Metal Batteries**, meeting requirements of Packing Instructions **965 to 970 section II** – **UN3480 – UN3481 – UN3090 – UN3091**

➤ Information to be provided:

✓ Operator must provide:

- **information** to flight crews and other employees in the **operations manual** (or other appropriate manuals) as will enable them to carry out **their responsibilities** with regard to the transport of DG
- This information **must include instructions** as to the **action to be taken** in the **event of emergencies** involving dangerous goods
- ✓ In case of **in-flight emergency**, the **PIC must**, as soon as the situation permits, **inform** the appropriate **air traffic services** unit, for the information of aerodrome authorities, of any DG carried as cargo on board the aircraft
- this information **should include the proper shipping name** and/or **UN number**, the **class/division** and, for **Class 1**, the **compatibility group**, any identified **subsidiary risk(s)**, the **quantity** and the **location** on board the aircraft, **or a telephone number** where a **copy** of the information provided to the pilot-in-command **can be obtained**

OPERATOR'S RESPONSIBILITIES – PROVISION OF INFORMATION

➤ Reporting of Dangerous Goods Accidents and Incidents

- ✓ **Operator** must **report DG accidents and incidents** to the appropriate **authorities** of the **State** of the **Operator** and the **State** in which the **accident or incident occurred** (depending of the **eventual State Variations to be applied**)

Note - This includes incidents involving DG that are not subject to all or part of these Instructions through application of an exception or of a special provision

➤ Reporting of Undeclared or Misdeclared Dangerous Goods

- ✓ **Operator** must **report** any occasion when **undeclared or misdeclared** dangerous goods are **discovered in cargo or mail**
- ✓ Report must be made to the appropriate authorities of the **State** of the **Operator** and the **State** in which **this occurred**
- ✓ This **includes as well** DG not permitted under 8;1.1.1 (**DG carried by passengers or crews**) when discovered, either in the baggage or on the person, of passengers or crew members

➤ Reporting of Dangerous Goods Occurrences

- ✓ **Operator** must **report DG occurrences** to the **State** of the **Operator** and the **State** of Origin

OPERATOR'S RESPONSIBILITIES – PROVISION OF INFORMATION

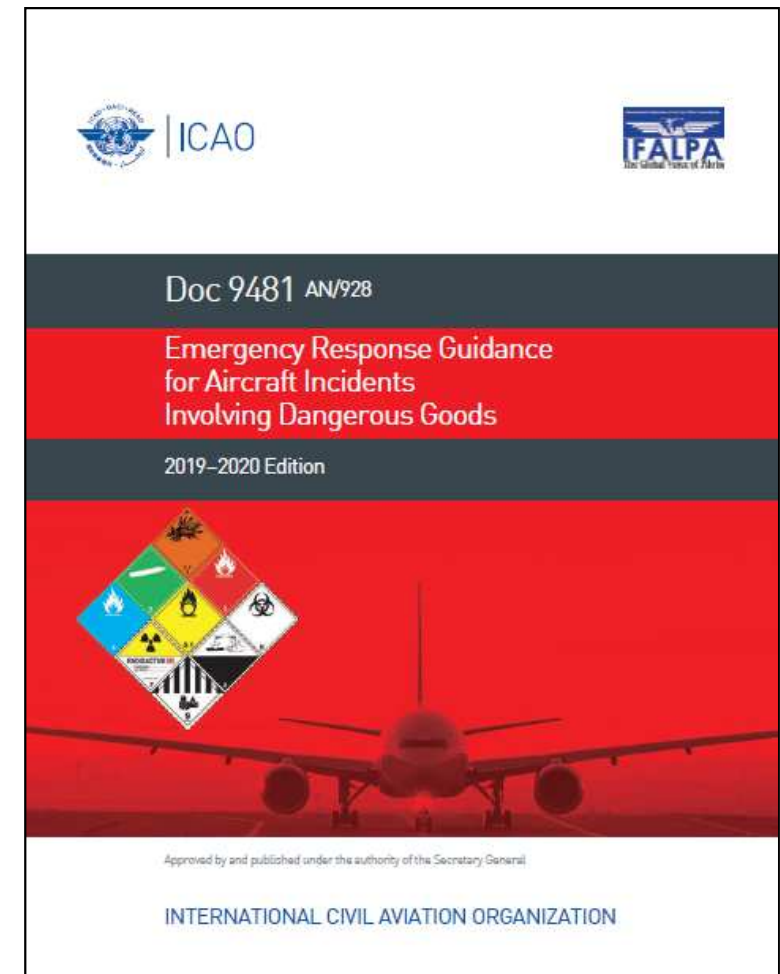
➤ Emergency Response Information

✓ **Operator must ensure that appropriate information is immediately available at all times for use in emergency response to accidents and incidents involving DG**

✓ **The information must be available to the PIC and can be provided by:**

– **the ICAO document Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods (Doc 9481 AN/928, usually called “red book”)**

– **or any other document which provides appropriate information concerning the dangerous goods on board**



OPERATOR'S RESPONSIBILITIES – PROVISION OF INFORMATION

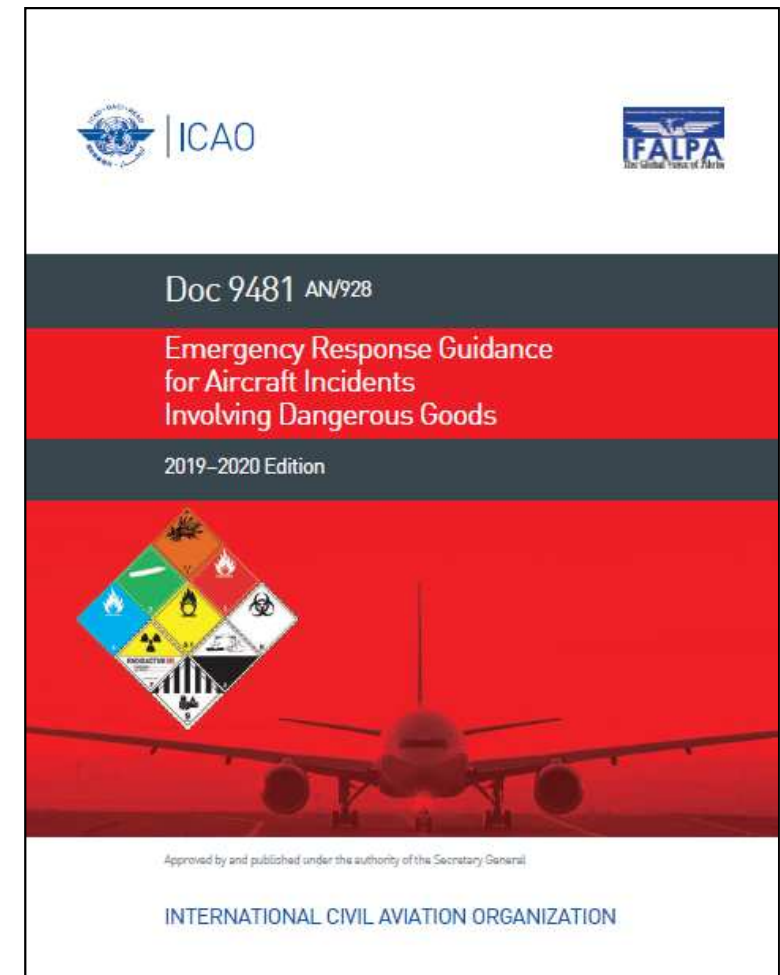
➤ Emergency Response Guidance Book

✓ Mainly, it **provides** :

- **Classification and location of Cargo compartments (Class A to E)**
- **Examples of DG Checklists for technical crew, as well for cabin crew**
- **Emergency response “Drill Codes”**

➤ Drill Code

✓ For each **proper shipping name** and **UN Number**, the “drill code” is composed by a **numeral** and **one or two additional letters**, as shown in **Table 4-1 Aircraft Emergency Response Drills** (at the end of “red book”)



OPERATOR'S RESPONSIBILITIES – PROVISION OF INFORMATION

➤ Emergency Response Guidance Book

Table 4-1

DRILL NO.	INHERENT RISK	RISK TO AIRCRAFT	RISK TO OCCUPANTS	SPILL OR LEAK PROCEDURE	FIREFIGHTING PROCEDURE	ADDITIONAL CONSIDERATIONS
1	Explosion may cause structural failure	Fire and/or explosion	As indicated by the drill letter(s)	Use 100% oxygen; no smoking	All agents according to availability; use standard fire procedure	Possible abrupt loss of pressurization
2	Gas, non-flammable, pressure may create hazard in fire	Minimal	As indicated by the drill letter(s)	Use 100% oxygen; establish and maintain maximum ventilation for "A", "I" or "F" drill letter	All agents according to availability; use standard fire procedure	Possible abrupt loss of pressurization
3	Flammable liquid or solid	Fire and/or explosion	Smoke, fumes and heat, and as indicated by the drill letter(s)	Use 100% oxygen; establish and maintain maximum ventilation; no smoking; minimum electricity	All agents according to availability; no water on "W" drill letter	Possible abrupt loss of pressurization
4	Spontaneously combustible or pyrophoric when exposed to air	Fire and/or explosion	Smoke, fumes and heat, and as indicated by the drill letter(s)	Use 100% oxygen; establish and maintain maximum ventilation	All agents according to availability; no water on "W" drill letter	Possible abrupt loss of pressurization; minimum electricity if "F" or "H" drill letter
6	Oxidizer, may ignite other materials, may explode in heat of a fire	Fire and/or explosion, possible corrosion damage	Eye, nose and throat irritation; skin damage on contact	Use 100% oxygen; establish and maintain maximum ventilation	All agents according to availability; no water on "W" drill letter	Possible abrupt loss of pressurization
8	Toxic*, may be fatal if inhaled, ingested, or absorbed by skin	Contamination with toxic* liquid or solid	Acute toxicity, effects may be delayed	Use 100% oxygen; establish and maintain maximum ventilation; do not touch without gloves	All agents according to availability; no water on "W" drill letter	Possible abrupt loss of pressurization; minimum electricity if "F" or "H" drill letter
7	Radiation from broken/unshielded packages	Contamination with spilled radioactive material	Exposure to radiation, and personnel contamination	Do not move packages; avoid contact	All agents according to availability	Call for a qualified person to meet the aircraft
8	Corrosive, fumes disabling if inhaled or in contact with skin	Possible corrosion damage	Eye, nose and throat irritation; skin damage on contact	Use 100% oxygen; establish and maintain maximum ventilation; do not touch without gloves	All agents according to availability; no water on "W" drill letter	Possible abrupt loss of pressurization; minimum electricity if "F" or "H" drill letter

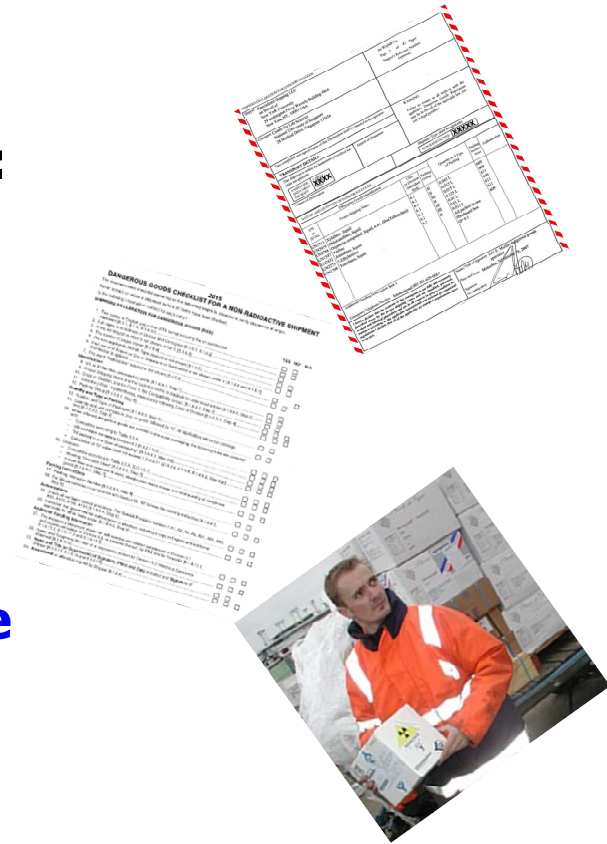
DRILL NO.	INHERENT RISK	RISK TO AIRCRAFT	RISK TO OCCUPANTS	SPILL OR LEAK PROCEDURE	FIREFIGHTING PROCEDURE	ADDITIONAL CONSIDERATIONS
9	No general inherent risk	As indicated by the drill letter	As indicated by the drill letter	Use 100% oxygen; establish and maintain maximum ventilation if "A" drill letter	All agents according to availability	None
10	Gas, flammable, high fire risk if any ignition source present	Fire and/or explosion	Smoke, fumes and heat, and as indicated by the drill letter	Use 100% oxygen; establish and maintain maximum ventilation; no smoking; minimum electricity	All agents according to availability	Possible abrupt loss of pressurization
11	Infectious substances may affect humans or animals if inhaled, ingested or absorbed through the mucous membrane or an open wound	Contamination with infectious substances	Delayed infection to humans or animals	Do not touch. Minimum re-circulation and ventilation in affected area	All agents according to availability. No water on "W" drill letter	Call for a qualified person to meet the aircraft
12	Fire, heat, smoke, toxic and flammable vapour	Fire and/or explosion	Smoke, fumes, heat	Use 100% oxygen; establish and maintain maximum ventilation	All agents according to availability. Use water if available	Possible abrupt loss of pressurization; consider landing immediately
DRILL LETTER	ADDITIONAL RISK	DRILL LETTER	ADDITIONAL RISK			
A	ANAESTHETIC	S	SPONTANEOUSLY COMBUSTIBLE OR PYROPHORIC			
C	CORROSIVE	W	IF WET GIVES OFF TOXIC* OR FLAMMABLE GAS			
E	EXPLOSIVE	X	OXIDIZER			
F	FLAMMABLE	Y	DEPENDING ON THE TYPE OF INFECTIOUS SUBSTANCE, THE APPROPRIATE NATIONAL AUTHORITY MAY BE REQUIRED TO QUARANTINE INDIVIDUALS, ANIMALS, CARGO AND THE AIRCRAFT			
H	HIGHLY IGNITABLE					
I	IRRITANT / TEAR PRODUCING	Z	AIRCRAFT CARGO FIRE SUPPRESSION SYSTEM MAY NOT EXTINGUISH OR CONTAIN THE FIRE; CONSIDER LANDING IMMEDIATELY			
L	OTHER RISK LOW OR NONE					
M	MAGNETIC					
N	NOXIOUS					
P	TOXIC* (POISON)					

* Toxic has the same meaning as poison.

OPERATOR'S RESPONSIBILITIES – PROVISION OF INFORMATION

➤ Retention of documents/information

- ✓ The **operator** must **ensure** that **at least one copy** of:
 - the dangerous goods transport documents (**DGD**)
 - the **acceptance checklist**
 - the **identification** of the **person** who performed the **acceptance check**
 - the written **information** to the **pilot-in-command** (usually called **NOTOC**)



is **retained** for a **minimum period** of **three months after the flight**, and **available** to the appropriate **national authority** upon **request**

SPECIAL LOAD - NOTIFICATION TO CAPTAIN																				
Station of Loading		Flight Number	Date	Accused Registration	Prepared by					Emergency contact Name and phone number										
DANGEROUS GOODS																				
Station (ICAO)	Air Waybill Number	Proper Shipping Name		UN or ID Number	UN or ID Number	SA Risk	ORR CODE	Number of Packages	UN ORR Code UN ORR Code	Radioactive Mat. Class	UN Mat. Class	SAF Code	QAC	Loaded UN ORR Code	Weight kg/lbs					
OTHER SPECIAL LOAD																				
Station (ICAO)	Air Waybill Number	Station to which Shipped		Quantity	Shipment description					Date		Loaded UN ORR Code		Position						
Loading Supervisor's Signature		Captain's Signature			Other Information															

➤ Provision of Information – Cargo Acceptance Areas

➤ **Operator** or the operator's **handling agent** must ensure that **notices** giving information about the transport of DG are sufficient in number, **prominently displayed** and provided at a **visible location(s)** at the **cargo acceptance points** to alert shippers/agents about any dangerous goods that may be contained in their cargo consignment(s)

✓ These notices **must** include **visual examples** of dangerous goods, including batteries



➤ Information to Passengers

- ✓ **Operators** must **inform** passengers about DG which are **forbidden** to transport aboard an aircraft, and those which **may be** carried in accordance with **Part 8;1.1.2 (DG carried by passengers & crew)**, through a **notification system** which must be **described** in their **operations manual** and/or **other appropriate manuals**
- ✓ This system must **guarantee**, without involvement of another person, that **the** passenger has been **presented** with the **information** (**including an acknowledgement**)
- ✓ The **information** must be **provided**:
 - at the **point of ticket purchase** or made **available** in **another manner** to passengers **prior** to boarding pass **issuance**; **and**
 - at **boarding pass issuance**, or when no boarding pass is issued, **prior** to **boarding** the aircraft

Note.— The information may be provided in text or pictorial form, electronically, or verbally, as described in the operator's manuals

➤ Information to Passengers

✓ **Operator** (or the **operator's handling agent**) and the **airport operator** must ensure that **information** (including visual examples) on the types of DG which passenger are **forbidden** to transport aboard an aircraft **is communicated effectively to them** at each place of an airport:

- where tickets are issued
- where boarding passes are issued
- where passenger baggage is dropped off
- where aircraft boarding areas are maintained
- where any other location where passengers are issued boarding passes and/or checked baggage is accepted

✓ These information **should** be provided by operators on their **websites** or **any other sources** of information, **prior** to the **boarding pass issuance** process

➤ **Passengers check-in procedures**

- ✓ **Operators' check-in staff** must be **adequately trained** to assist them in **identifying** and **detecting** dangerous goods carried by passengers other than as permitted in 8;1.1.2
- ✓ With the aim of preventing DG which passengers are not permitted to have, from being taken aboard an aircraft in their baggage or on their person, **check-in staff should seek confirmation** from a passenger that they are not carrying dangerous goods that are not permitted, and seek further confirmation about the contents of any item where there are suspicions that it may contain dangerous goods that are not permitted (e.g. through a **questionnaire**)
- ✓ This process is to be the same for organization or enterprise accepting **excess baggage** consigned as **cargo**

➤ Provisions to Aid Recognition of Undeclared Dangerous Goods

✓ **Must** be **provided** to following staff (and be readily available to them):

☞ **Cargo:** in charge of reservations/sales/acceptance

☞ **Pax:** in charge of reservations/sales/check-in

information about:

– **general descriptions** that are **often used** for **items** in **cargo** or in passengers' **baggage** which may contain DG

– **other indications** that DG **may be** present (e.g. labels, markings)

– **DG** may be carried by passengers in accordance with **Table 8-1**

✓ A **list** of general descriptions which, experience has shown, often apply to such items, is shown in Chapter 6 of Part 7

➤ Provisions to Aid Recognition of Undeclared Dangerous Goods

aircraft on ground (AOG) spares — may contain explosives (flares or other pyrotechnics), chemical oxygen generators, unserviceable tire assemblies, cylinders of compressed gas (oxygen, carbon dioxide or fire extinguishers), fuel in equipment, wet or lithium batteries, matches

automobile parts/supplies (car, motor, motorcycle) — may include engines, including fuel cell engines, carburettors or fuel tanks that contain or have contained fuel, wet or lithium batteries, compressed gases in tire inflation devices and fire extinguishers, air bags, flammable adhesives, paints, sealants and solvents, etc.

battery-powered devices/equipment — may contain wet or lithium batteries.

breathing apparatus — may indicate cylinders of compressed air or oxygen, chemical oxygen generators or refrigerated liquefied oxygen

camping equipment — may contain flammable gases (butane, propane, etc.), flammable liquids (kerosene, gasoline, etc.) or flammable solids (hexamine, matches, etc.)

swimming pool chemicals — may contain oxidizing or corrosive substances

switches in electrical equipment or instruments — may contain mercury

tool boxes — may contain explosives (power rivets), compressed gases or aerosols, flammable gases (Butane cylinders or torches), flammable adhesives or paints, corrosive liquids, lithium batteries, etc.

torches — micro torches and utility lighters may contain flammable gas and be equipped with an electronic starter. Larger torches may consist of a torch head (often with a self-igniting switch) attached to a container or cylinder of flammable gas

➤ Helicopter Operations

- ✓ These operations are **different** compared with **aeroplanes**, and full **provisions** of the Instructions are **not appropriate** or necessary (remote locations, mountainous areas, unnamed or construction sites, etc ...)
- ✓ **State** of the **Operator** may grant an **approval** in order to permit the carriage of DG without all of the requirements being fulfilled
- ✓ DG loaded for **open external carriage**: consideration should be given to the **type** of **packaging used** and to the **protection** of those packagings from the **effects of airflow** and **weather** (e.g. rain or snow)
- ✓ DG carried **suspended**: operator must ensure that consideration is given to the **dangers of static discharge upon landing** or **release** of the **load**
- ✓ When helicopters are **carrying passengers**, in accordance with **Supplement Part S-7;2.2.4**, the **State** of the **Operator** may grant an **approval** to permit the carriage of dangerous goods either:
 - in the **cabin**, when **DG** are **associated with** and **accompanied by** the **passengers**
 - in **cargo compartments** that do not meet the **Class requirements**

Thank you for your attention



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