Chapter 1

≠ # PROVISIONS FOR DANGEROUS GOODS CARRIED BY PASSENGERS AND CREW

Parts of this Chapter are affected by State Variations BR 10, MO 3, US 15, VE 9, VE 10; see Table A-1

≠ ## 1.1 DANGEROUS GOODS CARRIED BY PASSENGERS AND CREW

≠ 1.1.1 Passengers and crew are forbidden to carry dangerous goods either as or in carry-on baggage, checked baggage or on their person unless the dangerous goods are:

a) permitted in accordance with Table 8-1; and

b) for personal use only.

+ *Note 1.— The following dangerous goods may be commonly carried by passengers on other modes of transport, however, they are prohibited either as or in carry-on baggage, checked baggage or on the person:*

a) personal medical oxygen devices that utilize liquid oxygen;

b) electroshock weapons (such as tasers) containing dangerous goods such as explosives, compressed gases, lithium batteries, etc.;

c) "strike anywhere" matches;

d) lighter fuel and lighter refills;

e) premixing burner lighter (see the Glossary of Terms in Attachment 2) without a means of protection against unintentional activation; and

f) battery-powered lighters powered by a lithium ion or lithium metal battery (such as laser plasma lighters, tesla coil lighters, flux lighters, arc lighters and double arc lighters) without a safety cap or means of protection against unintentional activation.

+ *Note 2.— Exceptions found in these Instructions are not reproduced in Table 8-1. The following dangerous goods are not subject to these Instructions:*

a) Radio-pharmaceuticals contained within the body of a person as the result of medical treatment; and

b) Energy efficient lamps when in retail packaging and intended for personal or home use (see 1;2.6).

+ *Note 3.— States may implement additional restrictions in the interest of aviation security.*

1.1.2 Except for the reporting provisions of 7;4.4 and 7;4.5, the provisions of these Instructions do not apply to the dangerous goods permitted by Table 8-1 when those dangerous goods are:

a) carried by passengers or crew for personal use only;

≠ b) contained in baggage that has been separated from its owner during transit (for example, mishandled baggage such as lost baggage or improperly routed baggage); or

c) contained within items of excess baggage sent as cargo as permitted by 1;1.1.5.1 h).

1.1.3 The entry in Table 8-1 that most appropriately describes the item or article must be selected.

Note.— For instance, electronic cigarettes must meet the requirements of the entry for "Battery-powered portable electronic smoking devices" not the entry for lithium batteries or non-spillable batteries.

1.1.4 An item or article that contains multiple dangerous goods must meet all applicable entries.

Note.— For instance, the restrictions and conditions for entries 1) and 14) of Table 8-1 apply to an avalanche backpack that contains lithium batteries and gas cartridges.

1.1.5 Baggage intended to be carried in the cabin that is placed in the cargo compartment must only contain dangerous goods permitted in checked baggage. When baggage intended as carry-on is taken by the operator and placed into the cargo compartment for carriage, the operator must confirm with the passenger that dangerous goods which are only permitted in carry-on baggage have been removed.

1.1.6 Any organization or enterprise other than an operator (such as a travel agent), involved in the air transport of passengers, should provide passengers with information about the types of dangerous goods which they are forbidden to carry aboard an aircraft. This information should consist of, as a minimum, notices at those locations where there is an interface with the passengers.

1.1.7 Where provision is made for the purchase of tickets via the Internet, information on the types of dangerous goods which a passenger is forbidden to carry aboard an aircraft should be provided in either text or pictorial form and should be such that ticket purchase cannot be completed until the passenger, or a person acting on their behalf, has indicated that they have understood the restrictions on dangerous goods in baggage.

1.1.8 The Organization for the Prohibition of Chemical Weapons (OPCW) and government agencies listed in Table 8-2 may carry instruments containing dangerous goods in accordance with Table 8-2.

1.1.9 Except for the reporting provisions of 7;4.4 and 7;4.5, the provisions of these Instructions do not apply to the dangerous goods permitted in accordance with Table 8-2 when those dangerous goods are:

a) carried by staff members of the OPCW on official travel or government agencies listed in Table 8 2 on official travel;

≠ b) contained in baggage that has been separated from its owner during transit (for example, mishandled baggage such as lost baggage or improperly routed baggage); or

c) contained within items of excess baggage sent as cargo as permitted by 1;1.1.5.1 h).

1.1.10 Active devices must meet defined standards for electromagnetic radiation to ensure that the operation of the devices does not interfere with aircraft systems.

>

≠ **Table 8-1. Provisions for dangerous goods carried by passengers and crew**

Dangerous Goods	Location: Checked baggage	Location: Carry-on baggage	Approval of the operator(s) is required	Restrictions
Batteries				
1) Lithium batteries (including portable electronic devices)	Yes (except for g) and h))	Yes	(see c) and d))	a) each battery must be of a type which meets the requirements of each test in the UN *Manual of Tests and Criteria*, Part III, subsection 38.3; b) each battery must not exceed the following: — for lithium metal batteries, a lithium content of 2 g; or — for lithium ion batteries, a Watt-hour rating of 100 Wh; c) each battery may exceed 100 Wh but not exceed 160 Wh Watt-hour rating for lithium ion with the approval of the operator; d) each battery may exceed 2 g but not exceed 8 g lithium content for lithium metal for portable medical electronic devices with the approval of the operator; ≠ e) for portable electronic devices containing batteries: — measures must be taken to prevent unintentional activation and to protect the devices from damage; — the devices should be carried as carry-on baggage; however, if carried as checked baggage, the devices must be completely switched off (not in sleep or hibernation mode) if the batteries exceed: — for lithium metal batteries, a lithium content of 0.3 g per device; or — for lithium ion batteries, a Watt-hour rating of 2.7 Wh per device; f) batteries and heating elements must be isolated in portable electronic devices capable of generating extreme heat, which could cause a fire if activated, by removal of the heating element, battery or other components; g) spare batteries, including power banks: — must be carried as carry-on baggage; and — must be individually protected so as to prevent short circuits (by placement in original retail packaging or by otherwise insulating terminals, e.g. by taping over exposed terminals or placing each battery in a separate plastic bag or protective pouch); h) baggage equipped with a lithium battery(ies) exceeding: — for lithium metal batteries, a lithium content of 0.3 g; or — for lithium ion batteries, a Watt-hour rating of 2.7 Wh must be carried as carry-on baggage unless the battery(ies) is removed from the baggage, in which case the battery(ies) must be carried in accordance with g); i) no more than two spare batteries meeting the requirements of c) or d) may be carried per person.

Dangerous Goods	*Location*		*Approval of the operator(s) is required*	*Restrictions*
	Checked baggage	*Carry-on baggage*		
2) Non-spillable wet, nickel-metal hydride, and dry batteries	Yes	Yes	No	a) for a non-spillable battery: i) must meet the requirements of Special Provision A67; ii) each battery must not exceed a voltage of 12 volts and a Watt-hour rating of 100 Wh; iii) each battery must be protected from short circuit by the effective insulation of exposed terminals; iv) no more than two spare batteries per person may be carried; and v) if contained in equipment, the equipment must be either protected from unintentional activation, or each battery must be disconnected and its exposed terminals insulated; b) for a dry battery or nickel-metal hydride battery, each battery must comply with Special Provision A123 or A199, respectively; and c) batteries and heating elements must be isolated in battery-powered equipment capable of generating extreme heat, by removal of the heating element, battery or other components.
3) Battery-powered portable electronic smoking devices (e.g. e-cigarettes, ecigs, ecigars, epipes, personal vaporizers, electronic nicotine delivery systems)	No	Yes	No	a) if powered by lithium batteries, each battery must comply with restrictions of 1) a), b) and g); b) the devices and/or batteries must not be recharged on board the aircraft; and c) measures must be taken to prevent unintentional activation of the heating element while on board the aircraft.

Dangerous Goods	*Location*		*Approval of the operator(s) is required*	*Restrictions*
	Checked baggage	*Carry-on baggage*		
4) Mobility aids (e.g. wheelchairs) powered by: – spillable batteries; – non-spillable wet batteries; – dry batteries; – nickel-metal hydride batteries; or – lithium ion batteries	Yes	(see e))	Yes	a) for use by passengers whose mobility is restricted by either a disability, their health or age, or a temporary mobility problem (e.g. broken leg); b) the passenger should make advance arrangements with each operator and provide information on the type of battery installed and on the handling of the mobility aid (including instructions on how to isolate the battery); c) in the case of a dry battery or nickel-metal hydride battery, each battery must comply with Special Provision A123 or A199, respectively; d) in the case of a non-spillable wet battery: i) each battery must comply with Special Provision A67; and ii) a maximum of one spare battery may be carried per passenger; e) in the case of a lithium ion battery: i) each battery must be of a type which meets the requirements of each test in the *UN Manual of Tests and Criteria*, Part III, subsection 38.3; ii) when the mobility aid does not provide adequate protection to the battery: — the battery must be removed in accordance with the manufacturer's instructions; — the battery must not exceed 300 Wh; — the battery terminals must be protected from short circuit (by insulating the terminals, e.g. by taping over exposed terminals); — the battery must be protected from damage (e.g. by placing each battery in a protective pouch); and — the battery must be carried in the cabin; iii) a maximum of one spare battery not exceeding 300 Wh or two spare batteries not exceeding 160 Wh each may be carried. Spare batteries must be carried in the cabin. *Note.— When the lithium battery(ies) remain installed in the mobility aid, there is no Watt-hour limit.*

Dangerous Goods	Location: Checked baggage	Location: Carry-on baggage	Approval of the operator(s) is required	Restrictions
Flames and fuel sources				
5) Cigarette lighter Small packet of safety matches	No	(see b))	No	a) no more than one per person; b) must be carried on the person; c) must not contain unabsorbed liquid fuel (other than liquefied gas); and d) if a cigarette lighter is powered by lithium batteries, each battery must comply with restrictions of 1) a), b) and g) and 3) b) and c).
6) Alcoholic beverages containing more than 24 per cent but not more than 70 per cent alcohol by volume	Yes	Yes	No	a) must be in retail packagings; and b) no more than 5 L total net quantity per person. *Note.— Alcoholic beverages containing not more than 24 per cent alcohol by volume are not subject to any restrictions.*
7) Internal combustion engines or fuel cell engines	Yes	No	No	Measures must be taken to nullify the hazard. Refer to Special Provision A70 for more information.
8) Fuel cells containing fuel	No	Yes	No	a) fuel cell cartridges may only contain flammable liquids, corrosive substances, liquefied flammable gas, water reactive substances or hydrogen in metal hydride;
Spare fuel cell cartridges	Yes	Yes	No	b) refuelling of fuel cells on board an aircraft is not permitted except that the installation of a spare cartridge is allowed; c) the maximum quantity of fuel in any fuel cell or fuel cell cartridge must not exceed: — for liquids 200 mL; — for solids 200 g; — for liquefied gases, 120 mL for non-metallic fuel cell cartridges or 200 mL for metal fuel cell or fuel cell cartridges; and — for hydrogen in metal hydride, the fuel cell or fuel cell cartridges must have a water capacity of 120 mL or less; d) each fuel cell and each fuel cell cartridge must conform to IEC 62282-6-100 Ed. 1, including Amendment 1, and must be marked with a manufacturer's certification that it conforms to the specification. In addition, each fuel cell cartridge must be marked with the maximum quantity and type of fuel in the cartridge; e) fuel cell cartridges containing hydrogen in metal hydride must comply with the requirements in Special Provision A162; f) no more than two spare fuel cell cartridges may be carried by a passenger;

Dangerous Goods	*Location*		*Approval of the operator(s) is required*	*Restrictions*
	Checked baggage	*Carry-on baggage*		
				g) fuel cells containing fuel are permitted in carry-on baggage only; h) interaction between fuel cells and integrated batteries in a device must conform to IEC 62282-6-100 Ed. 1, including Amendment 1. Fuel cells whose sole function is to charge a battery in the device are not permitted; i) fuel cells must be of a type that will not charge batteries when the portable electronic device is not in use and must be durably marked by the manufacturer: "APPROVED FOR CARRIAGE IN AIRCRAFT CABIN ONLY" to so indicate; and j) in addition to the languages which may be required by the State of Origin for the markings specified above, English should be used.
Gases in cylinders and cartridges				
9) Cylinders of oxygen or air required for medical use	Yes	Yes	Yes	a) no more than 5 kg gross mass per cylinder; b) cylinders, valves and regulators, where fitted, must be protected from damage which could cause inadvertent release of the contents; c) advance arrangements recommended; and d) the pilot-in-command must be informed of the number of oxygen or air cylinders loaded on board the aircraft and their loading location(s).
10) Cartridges of Division 2.2 worn for the operation of mechanical limbs	Yes	Yes	No	Spare cartridges of a similar size are also allowed, if required, to ensure an adequate supply for the duration of the journey.
11) Cartridge of hydrocarbon gas contained in hair styling equipment	Yes	Yes	No	a) no more than one per person; b) the safety cover must be securely fitted over the heating element; and c) spare cartridges must not be carried.
12) Cartridges of Division 2.2 with no subsidiary hazard fitted into a self-inflating personal safety device, intended to be worn by a person, such as a life-jacket or vest	Yes	Yes	Yes	a) no more than two personal safety devices per person; b) the personal safety device(s) must be packed in such a manner that they cannot be accidentally activated; c) must be for inflation purposes; d) no more than two cartridges are fitted into each device; and e) no more than two spare cartridges per device.
13) Cartridges of Division 2.2 with no subsidiary hazard for other than a self-inflating personal safety device	Yes	Yes	Yes	a) no more than four cartridges per person; and b) the water capacity of each cartridge must not exceed 50 mL. *Note.— For carbon dioxide, a gas cartridge with a water capacity of 50 mL is equivalent to a 28 g cartridge.*

Dangerous Goods	*Location*		*Approval of the operator(s) is required*	*Restrictions*
	Checked baggage	*Carry-on baggage*		
14) Cartridges and cylinders of Division 2.2 with no subsidiary hazard contained in an avalanche rescue backpack	Yes	Yes	Yes	a) no more than one avalanche rescue backpack per person; b) the backpack must be packed in such a manner that it cannot be accidentally activated; c) may contain a pyrotechnic trigger mechanism which must not contain more than 200 mg net of Division 1.4S; and d) the airbags within the backpack must be fitted with pressure relief valves.
Radioactive material				
15) Radioisotopic cardiac pacemakers or other medical devices	n/a (see restrictions)	n/a (see restrictions)	No	Must be implanted into a person or fitted externally as the result of medical treatment.
Mercury				
16) Small medical or clinical thermometer which contains mercury	Yes	No	No	a) no more than one per person; and b) must be in its protective case.
Other dangerous goods				
17) Non-radioactive medicinal articles (including aerosols), toiletry articles (including aerosols) and aerosols in Division 2.2 with no subsidiary hazard	Yes	Yes	No	a) no more than 0.5 kg or 0.5 L total net quantity per single article; b) no more than 2 kg or 2 L total net quantity of all articles (e.g. four aerosol cans of 0.5 L each) per person; c) release valves on aerosols must be protected by a cap or other suitable means to prevent inadvertent release of the contents; and d) the release of gas must not cause extreme annoyance or discomfort to crew members so as to prevent the correct performance of assigned duties.
18) Dry ice	Yes	Yes	Yes	a) no more than 2.5 kg per person; b) used to pack perishables that are not subject to these Instructions; c) the package must permit the release of carbon dioxide gas; and d) when carried as checked baggage, each package must be marked: i) "DRY ICE" or "CARBON DIOXIDE, SOLID"; and ii) the net weight of dry ice or an indication that the net weight is 2.5 kg or less.
19) Cartridges in Division 1.4S (UN 0012 or UN 0014 only)	Yes	No	Yes	a) no more than 5 kg gross mass per person; b) must be securely packaged; c) must not include ammunition with explosive or incendiary projectiles; and d) allowances for more than one person must not be combined into one or more packages.
20) Permeation devices	Yes	No	No	Instructions on how to package permeation devices for calibrating air quality monitoring equipment are found in Special Provision A41.

Dangerous Goods	*Location*		*Approval of the operator(s) is required*	*Restrictions*
	Checked baggage	*Carry-on baggage*		
21) Non-infectious specimens in flammable solutions	Yes	Yes	No	Instructions on how to package and mark specimens are found in Special Provision A180.
22) Refrigerated liquid nitrogen	Yes	Yes	No	Must be contained in insulated packagings (e.g. dry shippers) that would not allow the build-up of pressure and be fully absorbed in a porous material so that there is no free liquid that could be released from the packaging. Refer to Special Provision A152 for more information.
23) Dangerous goods incorporated in security-type equipment, such as attaché cases, cash boxes, cash bags, etc.	Yes	No	Yes	The security-type equipment must be equipped with an effective means of preventing accidental activation and the dangerous goods incorporated in the equipment must meet the conditions of Special Provision A178.

Table 8-2. Provisions for instruments carried by OPCW and government agencies

Dangerous goods	*Location*		*Approval of operator(s) the is*	*Restrictions*
	Checked baggage	*Carry-on baggage*		
1) Instruments containing radioactive material (i.e. chemical agent monitor (CAM) and/or rapid alarm and identification device monitor (RAID-M))	Yes	Yes	Yes	a) the instruments must not exceed the activity limits specified in Table 2-14 of these Instructions; b) must be securely packed; and c) must be carried by staff members of the Organization for the Prohibition of Chemical Weapons (OPCW) on official travel.
2) A mercurial barometer or mercurial thermometer	No	Yes	Yes	a) must be carried by a representative of a government weather bureau or similar official agency; b) must be packed in a strong outer packaging, having a sealed inner liner or a bag of strong leakproof and puncture-resistant material impervious to mercury, which will prevent the escape of mercury from the package irrespective of its position; and c) the pilot-in-command must be informed of the barometer or thermometer.