

DANGEROUS GOODS PANEL (DGP)

NINETEENTH MEETING

Montreal, 27 October to 7 November 2003

**GUIDANCE MATERIAL FOR THE SECURITY MANUAL FOR
SAFEGUARDING CIVIL AVIATION AGAINST
ACTS OF UNLAWFUL INTERFERENCE**

(Presented by G.A. Leach)

1. BACKGROUND

1.1 At DGP-WG/03, a small ad-hoc working group undertook to provide guidance on dangerous goods in cargo for inclusion in the *Security Manual for Safeguarding Civil Aviation Against Acts of Unlawful Interference* (Doc 8973). The following is offered to the Panel for consideration of suitability for inclusion in that manual:

DANGEROUS GOODS IN AIR CARGO

1. Certain articles and substances are classified as "dangerous goods" by the ICAO *Technical Instructions for the Safe Transport of Dangerous Goods by Air*. The transport by air of dangerous goods in air cargo has been undertaken for many years. They are regularly and routinely carried all over the world and the requirements of the Technical Instructions are intended to ensure that this carriage does not put an aircraft and its occupants at risk during a flight. Although the primary task of personnel carrying out the duties of airport security screeners will be the detection of prohibited items, they also have a role to play in the safety of aviation by detecting dangerous goods in cargo which may be being shipped when not in compliance with the Technical Instructions.

2. The Technical Instructions list over 3000 dangerous goods, which are all assigned to one of nine hazard classes, some of which are sub-divided into Divisions, due to the wide range of the Class. The Classes/Divisions denote the type of hazard - i.e.:

Class 1 *Explosives*

- Division 1.1 substances and articles which have a mass explosion hazard
- Division 1.2 substances and articles which have a projection hazard but not a mass explosion hazard
- Division 1.3 substances and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard
- Division 1.4 substances and articles which present no significant hazard
- Division 1.5 very insensitive substances which have a mass explosion hazard
- Division 1.6 extremely insensitive articles which do not have a mass explosion hazard

Class 2 *Gases*

- Division 2.1 flammable gases
- Division 2.2 non-flammable, non-toxic gases
- Division 2.3 toxic gases

Class 3 *Flammable Liquids*

Class 4 *Flammable Solids and Reactive Substances*

- Division 4.1 flammable solids
- Division 4.2 substances liable to spontaneous combustion
- Division 4.3 substances which, in contact with water, emit flammable gases

Class 5 *Oxidisers and Organic Peroxides*

- Division 5.1 oxidising substances
- Division 5.2 organic peroxides

Class 6 *Toxic and Infectious Substances*

- Division 6.1 toxic (poisonous) substances
- Division 6.2 infectious substances

Class 7 *Radioactive Materials*

Class 8 *Corrosive Substances*

Class 9 *Miscellaneous Substances and Articles*

3. Some of the classes of dangerous goods may appear to have security implications e.g. explosives (ammunition, rocket motors etc), toxic material (cyanide, arsenic etc) and radioactive material (plutonium etc). However, provided the requirements of the Technical Instructions, and any other applicable requirements are met (e.g. Article 35 of the Chicago Convention requires States to place controls on the carriage by air of munitions of war which may or may not meet the criteria of dangerous goods), such items may legitimately be carried on an aircraft as air cargo.

4. The Classes are not in any order of precedence - i.e.: explosives of Class 1 are not necessarily more dangerous than corrosives of class 8; each Class / Division has an inherent risk which needs to be recognised. Provision is made within some classes and divisions (i.e. Classes 3, 4, 8, 9 and divisions 5.1 and 6.1) for the identification of the degree of danger and this is by assignment to a Packing Group based on specified criteria i.e.:

Packing Group I	great danger
Packing Group II	medium danger
Packing Group III	minor danger

5. Many dangerous goods have more than one hazard - e.g.: benzyl bromide is both corrosive and toxic. When classifying dangerous goods, there is a system of deciding which is the primary hazard and which the subsidiary risk(s). This system has been devised for use when transporting dangerous goods; in the event of leakage, spillage, package damage, etc, any subsidiary risk should not be regarded as being less important since it may have the same potential as the primary hazard for causing injury or damage.

6. Depending on the level of hazard and the type of aircraft which is to be used for carriage, the Technical Instructions limits the quantity of dangerous goods per package; with very few exceptions, there are no limitations per aircraft. Furthermore, the Technical Instructions broadly provides for the carriage of dangerous goods in four categories i.e. they may be:

- i) permitted for carriage on both passenger and cargo aircraft;
- ii) permitted for carriage on cargo aircraft only;
- iii) forbidden on both passenger and cargo aircraft in normal circumstances but may be carried with the approval or exemption of the states concerned;
- iv) forbidden for carriage by air under any circumstances.

7. With few exceptions dangerous goods must be packaged for air transport. The Technical Instructions contain general packing requirements and specific packing methods, which show the packagings permitted. They also give the specifications for those packagings and their testing.

IDENTIFICATION OF DANGEROUS GOODS

8. There are two primary tools that can be used to help identify the presence of dangerous goods:

Marking — Although the Technical Instructions requires various markings to be applied to packages of dangerous goods, it is the proper shipping name (the specific or generic name of the chemical or item) and corresponding UN number (a four digit number prefixed by "UN") are the means of identifying what is contained in a package;

Labelling — There are 2 types of labels which a package of dangerous goods may bear:

Hazard warning labels, according to the dangerous goods contained within;

Handling labels. There are four of these; orientation arrows, magnetized material, cargo aircraft only and cryogenic liquid.

Attachment A shows an example of a correctly marked and labelled package. Examples of hazard warning and handling labels are shown at Appendix 24 Attachment B.

DECLARATION OF DANGEROUS GOODS

9. Most dangerous goods must be declared to the operator in the form of a Dangerous Goods Transport Document, which is commonly referred to by industry as the "Shipper's Declaration". This document is completed by the shipper and provides details of the dangerous goods e.g. the proper shipping name, UN number; it also contains a certification by the shipper that all applicable requirements have been complied with. It is usually attached to the corresponding air waybill. Failure of a consignment to be accompanied by a shipper's declaration will result in the consignment being regarded as "undeclared" dangerous goods, which the operator is required to report to the State in which the goods were discovered.

10. The format usually used for the Dangerous Goods Transport Document / Shipper's Declaration is that set down in the IATA Dangerous Goods Regulations (See attachment B).

ACCEPTANCE FOR AIR TRANSPORT

11. Once a shipper has completed the preparation for air transport the dangerous goods are forwarded to either the operator or a handling agent. The Technical Instructions require that an acceptance check be carried out on packages of dangerous goods and their documents, which is sufficiently comprehensive to ensure that the packages are not damaged and are in a fit state for carriage, and that both the packages and the documents appear to comply with all applicable requirements; the checks on the package are based on the external appearance and it is not opened.

TRAINING

12. The Technical Instructions requires agencies engaged in the security screening of cargo to receive dangerous goods training commensurate with their responsibilities. As a minimum, the subjects with which security personnel should be familiar are as follows:

General philosophy — a background to the subject, including what dangerous goods are;

Limitations — alleviations exist for dangerous goods needed for the operation of the aircraft; and for those to provide medical aid in flight;

Labelling and marking — the labels and markings on packages that identify the contents;

Provisions for passengers and crew — what passengers and crew can and cannot have in their baggage;

Emergency procedures — reporting of dangerous goods incidents and accidents, actions in emergencies.

INCIDENT REPORTING

13. The Technical Instructions requires the operator to report the following:

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 damage.

Note — "*Serious injury*" is defined by ICAO as an injury which is sustained by a person in an accident and which:

- a) requires hospitalisation 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.

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 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.

Undeclared or misdeclared dangerous goods — when dangerous goods are discovered in cargo which are not accompanied by a dangerous goods transport document.

The reporting of the above is the responsibility of the operator. Consequently, if such occurrences are discovered by security staff, they should be reported in the first instance to the operator, as well as the emergency services, if appropriate.

DANGEROUS GOODS IN AIR MAIL

14. It is very common for air transport to be used for the carriage of air mail, both domestically and internationally. There is an almost total prohibition on dangerous goods in air mail, the only dangerous goods

permitted being infectious substances (which may be accompanied by carbon dioxide solid (dry ice) as a refrigerant) or very low activity radioactive material, such that no labelling will be required, further details of which can be obtained from the operator. However, there have been incidents caused by undeclared dangerous goods, primarily in parcels, which have been given to operators for carriage (eg: leakages from wet batteries, flammable liquids etc). Consequently, security staff should be alert to the possibility of undeclared dangerous goods in air mail.

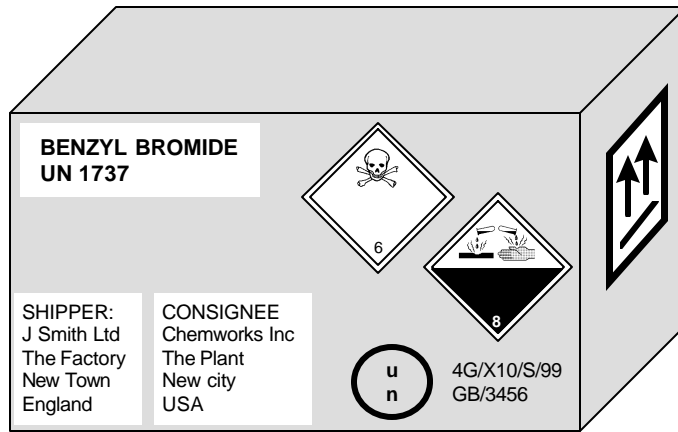
OPENING PACKAGES CONTAINING DANGEROUS GOODS

15. During the course of their duties, security staff may be consider opening packages consigned as cargo. However, packages of dangerous goods should only be opened in exceptional circumstances and then only with extreme caution, with the assistance of specialist qualified persons if appropriate.

16. The majority of packages of dangerous goods will have been subjected to a stringent test regime in a particular configuration i.e. tests will have been undertaken with the inner packagings and furniture in a specific way. Consequently, should a package of dangerous goods be opened and no reason is found to prevent it's onward transport, it must be re-packed and sealed in exactly the same way in which it had been offered for transport. This may require the assistance of the shipper. Failure to do so may result in a dangerous goods incident at a later point in the journey

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APPENDIX A



APPENDIX B

SHIPPER'S DECLARATION FOR DANGEROUS GOODS

Shipper		Air Waybill No.					
		Page of Pages					
		Shipper's Reference Number <i>(optional)</i>					
Consignee		<i>For optional use for Company logo name and address</i>					
Two completed and signed copies of this Declaration must be handed to the operator.		WARNING					
TRANSPORT DETAILS This shipment is within the limitations prescribed for: <i>(delete non-applicable)</i>		Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties. This Declaration must not, in any circumstances, be completed and/or signed by a consolidator, a forwarder or an IATA cargo agent.					
<table border="1"> <tr> <td>PASSENGER AND CARGO AIRCRAFT</td> <td>CARGO AIRCRAFT ONLY</td> </tr> </table>		PASSENGER AND CARGO AIRCRAFT	CARGO AIRCRAFT ONLY	Airport of Departure:			
PASSENGER AND CARGO AIRCRAFT	CARGO AIRCRAFT ONLY						
Airport of Destination:		Shipment type: <i>(delete non-applicable)</i> <input type="checkbox"/> NON-RADIOACTIVE <input type="checkbox"/> RADIOACTIVE					
NATURE AND QUANTITY OF DANGEROUS GOODS							
Dangerous Goods Identification							
Proper Shipping Name	Class or Division	UN or ID No.	Packing Group	Subsidiary Risk	Quantity and type of packing	Packing Inst.	Authorization
Additional Handling Information							
I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.						Name/Title of Signatory Place and Date Signature <i>(see writing above)</i>	