What's New: IATA Dangerous Goods Regulations 51st Edition

The 51st edition of the IATA Dangerous Goods Regulations, now available, will take effect 1 January 2010. This edition consolidates changes introduced through ICAO's addendum to the 2009-2010 edition of the Technical Instructions, as well as those agreed to by the IATA Dangerous Goods Board.

Also included is an appendix listing the impending regulatory changes to take effect in 2011 with the publication of the 2011-2012 edition of the ICAO Technical Instructions and the 52nd edition of the DGR.

This article is aimed at giving you an understanding of the changes as well as some insight into the reasons for those changes.

Section 2 – Limitations

Two new provisions have been added to the items listed in Subsection 2.3: Dangerous Goods Carried by Passengers or Crew and Table 2.3.A

- **Carbon dioxide, solid (dry ice):** The provisions for carbon dioxide, solid have been clarified to identify that marking and the design of packages to permit the release of carbon dioxide gas applies to both checked and carry-on baggage.
- **Cigarette lighters:** A note has been added under the provisions permitting passengers to carry a cigarette lighter to identify that "Blue flame"; or "cigar" lighters are not permitted. These types of lighters produce a very intense, focused flame that is capable of cutting through metal. For that reason, these lighters will not be permitted for carriage.

Section 3 – Classification

3.1.4.3 Has been added to identify that certain explosives identified as Division 1.4S in the List of Dangerous Goods must successfully pass the new Test Series 6(d) as set out in Part I of the UN Manual of Tests and Criteria. This requirement applies to demonstrate that in the event the explosive article is initiated there is no hazardous effect outside the package.

Section 4 – Identification

4.1.3.1 – Classification and assignment of a proper shipping name for mixtures and solutions has been amended to indicate that a mixture or solution of a predominant substance may contain trace amounts of other dangerous goods and still be classified and assigned to the UN number and proper shipping name of the predominant substance.

In Subsection 4.2: List of Dangerous Goods, there are several revisions:

The format of Table 4.2 has been revised to remove the dashes from columns G and H when dangerous goods are not permitted in Limited Quantities and instead insert the word "Forbidden" across G/H as is done for columns I/J and K/L when substances or articles are forbidden on passenger aircraft and Cargo Aircraft Only.

Amendments to the List of Dangerous Goods include:

- the addition of special provision A165 assigned to:
  - UN 0323, **Cartridges, power device**;
  - UN 0366, **Detonators for ammunition**;
  - UN 0441, **Charges, shaped**;
  - UN 0445, **Charges, explosive, commercial**;
  - UN 0455, **Detonators, non-electric**;
  - UN 0456, **Detonators, electric**;
  - UN 0460, **Charges, bursting, plastics bonded**; and
  - UN 0500, **Detonator assemblies, non-electric**
- excepted quantity code E0 has been removed from all radioactive material in excepted package entries to avoid confusion. These entries are still not permitted as dangerous goods in excepted quantities, however the provisions for radioactive material, excepted package as set out in 10.3.11 do apply.

Section 4.4 – Special Provisions

- A130 – for radioactive material, excepted package that also meets the definitions and criteria of other classes or divisions as defined in Section 3, the substance must be classified in accordance with the requirements applicable to the other risk. An example for how this should be described on the Shipper's Declaration is shown in the special provision.
- A165 – against eight 1.4S explosives entries requires that for these items the new Test Series 6(d) as set out in Part I of the UN Manual of Tests and Criteria must be completed for transport aboard a passenger aircraft.

Section 5 – Packing

5.0.1.4 has a note added that identifies that before a packaging is re-used that the closure instructions from the manufacturer as required by 6.0.1.4 must be met.

Packing Instructions

- 650 – The wording for the information to be included on the Air Waybill has been revised to include the number of packages. This standardizes the information to be shown on the Air Waybill with that for dangerous goods in excepted quantities, dry ice, etc. that don't require a Shipper's Declaration.
- 965 – 970 – Based on the numerous questions on the transport of lithium batteries and lithium battery-powered equipment, the lithium battery packing instructions have been reformatted to more clearly set out the applicable requirements. The packing instructions are now set out into 3 main sections:

1. General requirements applicable to all batteries to which the packing instruction applies;
2. Section I fully regulated, Class 9, battery provisions; and
3. Section II excepted, small, battery provisions that once met, no other provisions of the Regulations apply.

Section 6 – Packaging Specifications and Performance Tests

- 6.0.4.1 the note requiring the UN specification mark to be embossed or printed directly on a package has been amended to allow other forms of marking. A recommended practice to include contact information when the marks are not printed or embossed has also been added. Handwritten specification marks are still not permitted.

Section 7 – Marking and Labeling

- **7.1.4.2** has been clarified to show exactly which markings need to be on the outside of an overpack.
- **7.1.5.1(d)** has been modified to clarify what is meant by "identical dangerous goods contents".
- **7.1.5.1(j)** has been added to include the environmentally hazardous substance mark requirements.
- **7.1.6.3** has been modified to clarify when the marking requirements for packages containing environmentally hazardous substances, liquid or solid (UN 3077 or UN 3082) is not applicable. A note has been added to indicate that other regulations, e.g., International Maritime Dangerous Goods Code, may require the mark on packages containing substances other than UN 3077 and UN 3082.

Section 8 – Documentation

- **8.1** a new example, Figure 8.1.O, has been added, to show the appropriate method for describing a quantity of material that is a radioactive excepted package, that also meets the classification criteria of another class or division, as set out in Special Provision A130.

Section 10 – Radioactive Material

- **10.7.1.4** has been clarified to show exactly which markings need to be on the outside of an overpack containing radioactive material.
- **10.8.3.9.3** has been modified to show the required sequence for package dimensions (L)ength x (W)idth x (H)eight for packages categorized as II-Yellow or III-Yellow and the desired method has been added to example 10.8.E.

Appendix H – Impending Changes

The content of Appendix H in this edition includes all of the reformatted packing instructions that will come into effect 1 January 2011 for Classes 3, 4, 5, Division 6.1, Classes 8 and 9 as well as an indication of the other regulatory changes that will come into effect from 1 January 2011.

The regulatory changes indicated are based on the changes that have been agreed by the United Nations Subcommittee of Experts and that have been adopted into the 16th revised edition of the Recommendations on the transport of dangerous goods (Model Regulations) as well as those that have been agreed for adoption by the ICAO Dangerous Goods Panel into the 2011-2012 edition of the Technical Instructions.

The contents of Appendix H include:

- **Training records**. The retention period for training records has been revised to require that the employer must retain records of dangerous goods training for a minimum of thirty-six months from the most recent training completion date.
- **Dangerous Goods in Operator's Property**. The provisions are revised in the 51st edition to specifically permit operators to have and use in the aircraft electronic devices such as credit card readers, personal entertainment systems and electronic flight bags containing lithium batteries and also spare lithium batteries for these devices, provided the batteries do not exceed 2 g for lithium metal batteries or 100 Wh for lithium ion batteries.

The operator must establish and document conditions for the carriage use of the devices and for the spare batteries in the operator's operations and/or other appropriate manuals. Any transport of spare electronic devices containing lithium batteries or of spare lithium batteries must be in accordance with the applicable provisions of the DGR.

- **Dangerous Goods in Limited Quantities**. The 16th revised edition of the UN Model Regulations has revised provisions for the transport of dangerous goods packed in limited quantities. For the surface transport modes, road, rail and maritime, there will be a new marking that will be applied to packages containing dangerous goods packed according to the limited quantity provisions. The mark will be as shown below and will replace the existing marking that applies to limited quantities when shipped by surface modes of transport. The size of the marking is 100 mm x 100 mm (4"x 4"), except where the package is too small to bear the full size mark where the mark may be reduced to 50 mm x 50 mm (2"x 2").

Marking for packages containing limited quantities (surface transport)

Air transport will adopt the same mark, except that the center of the mark will contain the symbol "Y". This mark will replace the current "limited quantity" or "LTD QTY" marking that must be applied to limited quantity packages. The current requirement for the full marking of the UN number and proper shipping name and the application of hazard labels on the package will still apply for air transport. The size of the air transport limited quantity mark is the same as for surface transport.

Marking for packages containing limited quantities (air transport)

- **List of Dangerous Goods**. There will be a number of new UN number/proper shipping-name entries that will come into effect from 1 January 2011. These include new UN numbers and/or proper shipping names for:
  - **Alkali metal dispersion, flammable, Alkaline earth metal dispersion, flammable (UN 3482)**. The new UN number is introduced to specifically provide for formulations that pose a flammable subsidiary risk. Associated with introduction of these two entries, the current special provision A147 has been changed to not used. A147 is currently assigned against UN 1391, **Alkali metal dispersion** and **Alkaline earth metal dispersion**, which requires that substances with a flash point of 60°C or less must be shown with a Class 3 subsidiary risk.
  - **Calcium hypochlorite, dry, corrosive** and **Calcium hypochlorite mixture, dry, corrosive**, with > 39% available chlorine (8.8% available oxygen) **(UN 3485), Calcium hypochlorite mixture, dry, corrosive**, with > 10% but ≤ 39% available chlorine **(UN 3486), and Calcium hypochlorite hydrated, corrosive** and **Calcium hypochlorite hydrated mixture, corrosive**, with ≥ 5.5% but ≤ 16% water (UN 3487). The new UN numbers are introduced to specifically provide for formulations that pose a corrosive subsidiary risk. Associated with introduction of these entries, the current special provision A135 has been changed to not used. A135 is currently assigned against **UN 1748, Calcium hypochlorite, dry** and **Calcium hypochlorite mixture, dry**, with >39% available chlorine (8.8% available oxygen), UN 2208, **Calcium hypochlorite mixture, dry**, with > 10% but ≤ 39% available chlorine and **Calcium hypochlorite hydrated** and UN 2880, C**alcium hypochlorite hydrated mixture**, with ≥ 5.5% but ≤ 16% water, which requires that substances meeting the criteria of a corrosive substance must be shown with a Class 8 subsidiary risk.
  - **Engine, fuel cell, flammable gas powered, Engine, fuel cell, flammable liquid powered, Vehicle, fuel cell, flammable gas powered and Vehicle, fuel cell, flammable liquid powered (UN 3166)**. The emerging fuel cell technologies, particularly for use in motor vehicles, have created the need for additional entries to the list of dangerous goods.

- **Special Provisions**. There will be a number of new and amended special provisions that will come into effect from 1 January 2011. These include:
  - A44 has been revised to show that the packing group assigned to the kit as a whole must be the most stringent packing group assigned to any individual substance contained in the kit and that packing group must be shown on the shipper's declaration for dangerous goods. This incorporates the provisions of special provision A802, which becomes "Not Used" in 2011.
  - A130 has been further revised to clarify that radioactive material in excepted package with a subsidiary risk must be assigned based on the quantity of material. When the substance meets the criteria for dangerous goods in excepted quantity, the substance is shipped in packages meeting the requirements of 2.7.6. All other requirements of 10.0.1.5 must be met, without reference to the other class. When the substance does not meet the criteria for dangerous goods in excepted quantity it must be classified according to the predominant subsidiary risk.
  - A144 has been revised to show that if the conditions of A144 are met for Protective Breathing Equipment (PBE), then the requirements of Special Provision A1 do not apply.
  - A167 – A173 are new special provisions that apply to Ammonium bromates, chlorates, chlorites and permanganates and further define those entries.
- **Packing Instructions**. New packing instructions will be assigned to the entries for Chlorosilanes. As well, a number of the existing packing instructions will be revised. These include:
  - PI 377. Will apply to chlorosilanes, liquid, flammable, corrosive in Packing Group II. This new packing instruction aligns with the UN Model Regulations and addresses the particular properties of chlorosilanes.
  - PI 681. Will apply to chlorosilanes, liquid, toxic. This new packing instruction aligns with the UN Model Regulations and addresses the particular properties of chlorosilanes.
  - PI 876. Will apply to chlorosilanes, liquid, corrosive on Cargo Aircraft Only. This new packing instruction aligns with the UN Model Regulations and addresses the particular properties of chlorosilanes.
  - PI Y963. Will apply to ID8000. This means that ID8000, Consumer Commodity is now a limited quantity packing instruction, allowing it to be moved more harmoniously on all modes of transport. It also means that packages conforming to this packing instruction will need to bear the new limited quantity marking.