



Dangerous Goods DGR Loading

Issue 5 – April 2014

Lithium Batteries to be banned from passenger aircraft bellies?

The ICAO Dangerous Goods Panel has proposed that the carriage of lithium metal batteries as cargo on passenger aircraft be prohibited, effective 1 January 2015

[Cargo Facts Article](#)

[Air Cargo World Article](#)



Mishandling Dangerous Goods

In May 1996 a cargo loader placed boxes containing 144 out-of-

Every Cargo Handler within the Airfreight industry actively involved in the handling of Dangerous Goods (DGR) MUST be trained and certificated to a certain level of competence. This should be regularly refreshed (currently every 2 years) so staff are kept up to date throughout the airfreight industry concerning the handling and loading of DGR.

Dangerous Goods are articles or substances that are capable of posing a risk to Health, Safety or to Property or the Environment and which are shown in the list of dangerous goods in these regulations or which are classified according to these regulations.

The Regulations state that ALL PERSONS involved in the handling of Cargo and Baggage and any other area connected with the transportation of dangerous goods MUST be trained. The aim of the training is to ensure that all shipments of dangerous goods are properly and fully prepared by knowledgeable and experienced personnel.

The consequences of this ruling not being adhered to by Airlines and Cargo Warehouses can be catastrophic and very costly to all concerned if there's an aircraft delay or more importantly an incident occurring during flight. Staff who build these ULDs (Unit Load Device) sign the 'Pallet Tag' (A ticket affixed to the ULD detailing the contents,

date oxygen generators, loosely packed in double wrap, around an aircraft tyre in the cargo hold. As the aircraft moved towards to runway, one of the oxygen generators started burning. This then spread to all of the oxygen generators and as the surface of the metal generator got hotter, the box and double wrap caught fire. The aircraft crashed, killing all on board.

Dangerous Goods Awareness

[DGR Training Video](#)

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Rules, Regulations & Responsibilities
[Issue 1](#)

DGR Checking
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Questions?

If you have any questions on the topics discussed here mail us at:

marketing@hermes-cargo.com

weight, destination etc) to confirm not only the weight is correct but also the ULD is correctly built up.

Where DGR is concerned there are many additional factors that have to be checked. Within the 9 classes of DGR signified by a series of labelling, there are also strong stipulations that Shippers must follow to correctly package these substances in conjunction with the law. This is covered in the accompanying documentation that also has to be checked by a fully trained DGR specialist and both package/s and documentation must also be fully checked before any cargo is allocated to a flight. Any of these requirements that do not match the commodity loaded or documented in each package is refused and the customer must collect the goods and correct any issue highlighted before transportation by air is permitted.

Certain DGR is deemed too dangerous due to the amount in each package to travel on a passenger aircraft, so the option here is to load these shipments onto a CAO Cargo Aircraft Only (Main Deck and Lower Deck is all cargo). DGR can be transported as liquids, solids or gases so the packaging must be created in accordance to the DGR regulations. Any untrained warehouse workers should complete a visible check before acceptance for any damage or leakage. If not the cost for re-packaging, depending on the substance loaded within, can be costly to the company that incorrectly accepted the goods into the warehouse.



When

everything is done according to the requirements many ULDs travel daily around the world, correctly loaded and built up for flight without any problems - however it only takes one short cut in the process that could escalate to a major aircraft incident.



The build up of DGR can contain many different classes and providing these classes are loaded in accordance with regulations there is minimal chance of any incident happening. Staff are trained to use a 'Compatibility Chart' which details all the loading requirements for all classes for transportation by air. At this point both cargo and documentation have been checked but shipments should

More information?

For comprehensive information from IATA on the Dangerous Goods Regulations visit their website:

www.iata.org



Upcoming Air Cargo Events



Air Cargo China
17-19 June 2014,
Shanghai

Air Cargo Ground
Handling Conference
17-19 September 2014,
Milan, Italy



TIACA ACF
7-9 October, Seoul

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always be visibly re-checked before build up commences, as damage can occur during storage/movement within the warehouse. If there's any doubt then the shipment does not fly.

ULDs containing packages with large amounts of DGR and loaded onto a Cargo Aircraft have to be loaded so these packages are 'accessible' during flight in the event of any incident occurring during flight. This is why the holds (Lower Deck - Main Deck are the passengers) of a passenger aircraft are known as 'inaccessible holds' meaning there is no way to gain access to anything loaded here during flight and also why such smaller amounts of Dangerous Goods are allowed on such aircraft types.

There is a lot of skill and expertise in building such Main Deck ULDs to make every carton 'accessible' during flight. This is done by building 'gangways' between each row of goods built therefore making each carton accessible in the event of leakage etc. Remember these shipments are built on the main deck so the flight crew have immediate access to all cargo loaded on the main deck providing such gangways are created.

There are specific ULDs made for such purposes. This image shows the walkways between each row of dangerous goods. Certain ULDs are built with additional tie-down rails solely for the purpose of creating walkways therefore making the cargo accessible during flight.



The loading of these ULDs is then done using the Compatibility Chart. Once staff are trained in DG and using the chart, the process begins by determination of DG classes, how much of each have you to safely load before the building and securing of such ULDs are complete. Companies create their own charts but the end result and requirements must always be the same.

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Contact Us

Tel: +44 (0)1344 667006

Email: [Marketing](mailto:Marketing@hermes-cargo.com)

www.hermes-cargo.com

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Table 9.3.A Segregation of Packages (IATA DGR 9.3.2)										
Hazard Label	Hazard Labels									
	1 excluding 1.4S	1.4S	2	3	4.2	4.3	5.1	5.2	8	
1 excluding 1.4S	Note 1	Note 2	X	X	X	X	X	X	X	X
1.4S	Note 2	-	-	-	-	-	-	-	-	-
2	X	-	-	-	-	-	-	-	-	-
3	X	-	-	-	-	-	X	-	-	-
4.2	X	-	-	-	-	-	X	-	-	-
4.3	X	-	-	-	-	-	-	-	-	X
5.1	X	-	-	X	X	-	-	-	-	-
5.2	X	-	-	-	-	-	-	-	-	-
8	X	-	-	-	-	X	-	-	-	-

Notes: (Notes 1 & 2 listed above, refer IATA Dangerous Goods Regulations 9.2.2.2 & 9.3.2.2.4)

1. An "x" at the intersection of a row and a column indicates that packages containing these classes/division of dangerous goods must be segregated. A "-" at the intersection of a row and a column indicates that packages containing these classes/divisions of dangerous goods do not require segregation.

2. Division 4.1 and Classes 6, 7 & 9 are not included in Table 9.3.A as they do not require segregation from any other class or division.

Here is an example of cargo with too much weight loaded on top of DG drums causing the disfigurement.



Although there are many stringent checks to follow when accepting or loading DG, it is important to remember that cartons, drums or crates can only be secured by what you can visibly see - loaders have no idea of the contents and more importantly how it has been loaded which is why such checks are created.

Doing the job properly and professionally will ensure that this is not your fault!

