

## EMERGENCY RESPONSE

## Multi-Modal Mishaps

A new manual and related research shows why and how companies should streamline multi-modal shipping.

by Tracie Ross

There is a story behind the story of many of the fines for improper shipping of flammables and other hazardous materials that are posted on some U.S. Department of Transportation Websites. All too frequently, the problem stems from companies familiar with the regulations that govern one mode of transportation (air, ground, or water) attempting to apply them to another.

Indeed, mastering the variances in requirements for shipping flammables from one mode to another can take time, and, to the uninitiated, be rather troublesome. For that reason, we devoted considerable research & development time in the past few years to create a single guide for shipping by multiple modes. This *Multi-Modal Dangerous Goods Manual* now allows the user to compare several modes at one time to determine proper shipping requirements for flammables and other dangerous goods. Presented here are some findings of this R&D project that suggest why and how to streamline multi-modal shipping.

#### Unwieldy Nature of Multi-Modal Regulations

The only constant about dangerous goods/hazardous materials regulations is that they change. And the difficulties of keeping up with regulatory change rapidly multiply when you are talking about multi-modal shipping.

Consider this: The U.S. hazardous mate-

rials shipping regulations codified as 49 CFR Part 100-185 are updated continuously and may need to be monitored daily. The IATA (International Air Transport Association) Dangerous Goods Regulations are updated on a yearly basis. However, the ICAO (International Civil Aviation Organization), IMO (International Maritime Organization), the UN Recommendations on the Transport of Dangerous Goods Model Regulations, and European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR) are updated biannually. Sound confusing? It is, and the sheer volume of information involved provides the underlying rationale for cross-referenced resources on multi-modal shipping.

#### Common Errors in Shipping Flammable Liquids

Industry experts report that most dangerous goods being shipped contain either flammable or corrosive materials. Often, violations in shipping flammables reflect the absence of even the most basic training in what regulations require.

Common to all modes, violations are given when dangerous goods declarations are illegible, when the basic description of the dangerous good is not given in the proper sequence, or when it is not available altogether.

Many lapses reflect the difficulties in mastering the subtleties of regulations when a shipment goes from one mode of trans-

port to another. A common and potentially costly error is the omission of emergency response information and phone numbers required in U.S. shipments by someone using IMO regulations who is unaware of these U.S. requirements.

Another example is that a No. 6 Diesel Fuel shipment (flashpoint 160 degrees F) need not be marked, labeled, placarded, or declared by vessel when offered in non-bulk packaging, where the volumetric capacity is less than 450 L (119 U.S. gallons). However, when offered in bulk packaging such as ISO tank containers, it must be appropriately marked, placarded, and declared.

A similar error stemming from specific differences in regulations governing one mode of transport versus another is the provision in 49 CFR 173.150(f) that permits flammable liquids with flashpoints greater than or equal to 100 degrees F to be reclassified in the United States as a combustible liquid. However, the same materials must be declared and placarded if sent via ocean.

Often it is also difficult to understand the subtle differences between the regulations governing various modes of transport. For example, 49 CFR requires that placards be visible while in transport. While the regulations do not specifically state where placards must be placed, a carrier that applies placards just above the bottom edge of a trailer may do the same for a freight container. When the freight container is then

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placed onto a stack train, the placards are no longer visible because they are concealed by the gondola or car's wall.

#### Pitfalls of Habitual Shipping

Managers that have taken care to automate shipping procedures, so that less-trained staff in shipping departments are not left to interpret and apply regulations on their own, need to re-examine these procedures in light of likely multi-modal mishaps. Mistakes often happen when an unusual shipment is required with which less-experienced staff have no familiarity.

At a minimum, automated shipping instructions need to red-flag employees to seek instructions from managers if and when a new mode of transport is being utilized. A single resource for multi-modal shipping helps managers then quickly dispense correct instructions for the new modes of transport to be utilized.

Recently, for example, a prominent sporting goods manufacturer that transports the greatest share of its goods via ground had a rare air shipment of paint (flashpoint 102 degrees F) to Hawaii. This one can of paint was prepared correctly for shipment by

ground, the standard operating procedure used by their plant, but was lacking the labeling, etc. needed for air transport. The manufacturer was cited by the FAA and a \$39,000 fine was proposed, which did not include the high costs of hiring an emergency response contractor in Hawaii to dispose of the material.

#### WHAT CAN MULTI-MODAL MISHAPS COST YOUR COMPANY? ... DO THE MATH

If your company, like many companies, thinks it is best to stick to the single mode of air transport, think again.

The common rationale is that requirements for air transport are the strictest and if you stick to these, you will always be "safe." Unfortunately, this is not necessarily true—and there also is likely quite a pretty penny being squandered on air transport.

Consider this example, based on quotes from a leading LTL carrier and a popular parcel air delivery service that came up with the following numbers for shipments from Chicago to Los Angeles and Chicago to London.

**Example:** The costs of shipping one 55-gallon drum weighing 480 pounds of a cleaning solution that is classified as a Flammable liquid n.o.s., 3 UN 1993.11 via land or sea, versus making 55 separate air shipments of that same flammable material in one-gallon containers weighing 11 pounds each via passenger air.

Chicago to Los Angeles: one 55-gallon drum by truck, \$399.05 (before company discounts)

Chicago to Los Angeles: 55 one-gallon containers by air, \$103.55 each or \$5,695.25 total

Chicago to London: one 55-gallon drum by ocean, \$352.55 (before company discounts)

Chicago to London: 55 one-gallon containers by air, \$181.54 each or \$9,984.70 total

In other words, if you ship all of this flammable material by air to both Los Angeles and London from Chicago, you are costing your company an extra \$14,928.35. Making the same mistake 10 times costs your company \$149,283.50. Making the same mistake 100 times costs your company \$1,492,835. ■