By Eric F. Greenberg, Attorney-at-law

Packaging as cargo: out the door, but not out of mind

If you design or manufacture retail product packaging, you might not give much thought to what happens to it once it's out of your facility. But rest assured, lots of people are giving that topic lots of thought. Probably, you should, too.

The protection of freight while being shipped is the subject of some regulation, some private standards, and a fair amount of civil litigation when things go wrong.

There are a number of techniques available for assuring that cargo stays put while it's moving within a container or vehicle. These include so-called blocking and bracing techniques, in which objects are strategically placed within a shipping container or vehicle so as to prevent it from shifting or moving around during transport, or the use of objects such as straps, stretch wrap, air bags, dunnage, or retaining bars to make cargo sit still. "Stretch hooding" and "shrink hooding" are sometimes used to keep loads on pallets stable.

Getting this wrong can result in sometimes quite substantial damage to the cargo, or to the vehicles or shipping equipment, and, in the worst cases, personal injuries or deaths.

When cargo is damaged or people are injured by cargo, the question of who was legally responsible for making it safe becomes a key issue. After all, the party responsible would be liable for damages for the injuries to people or damage to property. Transportation contracts commonly contain provisions laying out the responsibility as between the parties.

For special types of cargo, including hazardous materials and large machines and others, the U.S. Department of Transportation regulations require specific instructions for safe transport.

The Federal Motor Carrier Safety Administration, part of the Department of Transportation, has had newer cargo securement rules in place since 2002, and they place obligations on motor carriers in interstate commerce. The rules call for cargo to be secured sufficiently to withstand three distinct forces: 0.8 gravity deceleration in the forward direction; 0.5 gravity rearward; and 0.5 gravity laterally.

Because of the potential for personal injury and enormous money damages, and probably because there are so many different available techniques for securing cargo, the topic has inspired extensive exploration by academics, as well. Ask around among college packaging professors and before long they will point you to their published studies aimed at improving the art.

One such study, in the *Journal of Applied Packaging Research* from 2014, whose five authors included consultant Dr. Paul Singh, and Dr. Jay Singh (no relation) of Cal Poly State University, confirmed the importance of "packaging and loading methods to reducing damage and risk of injury," because "Loads will shift inside truck, rail and intermodal container shipments if void spaces exist after the loading process."

To prevent problems, they point to proper design and use of pallets, as well as cargo securement. Notably, they say that "Packages, boxes, and crates should be designed to permit top loading of lighter and smaller freight on top to optimize shipping densities," and that not doing so could lead to damage and injury as well as tariff surcharges. The paper discusses the packaging requirements for specific commodities that are set forth by U.S. regulators in the National Motor Freight Classification, and the authors advise that packaging should meet those standards, at a minimum.

Paul Singh, PhD, who has been a frequent expert witness in lawsuits over transport injuries and damages, says that while government regulations indicate that the carrier will typically have responsibility for proper loading and packaging, there are situations in which the packaging manufacturer and shipper might be legally responsible, and in general manufacturers and shippers should strive to meet the appropriate "standard of care," and thereby help prevent damage or injury.

Carriers and their drivers generally have an obligation to assure cargo in a commercial vehicle is properly distributed and adequately secured. On the other hand, if you as the shipper have sealed the container so the carrier or driver can't inspect it, then you might have responsibility to assure it's been properly secured. This is something you might well do to prevent theft or otherwise to protect the cargo, for example in compliance with the Customs Trade Partnership Against Terrorism (CTPAT) import program for protection of imported goods.

Dennis Young of the Michigan State University School of Packaging has also examined and consulted on numerous cargo scenarios and disputes, and he makes the point that all the effort put into cargo securement helps assure safety, certainly, but is also important to help reduce damage to goods that could lead to rejection by consumers even if it doesn't create danger or injury.

Kurt Riemenschneider of Highlight Industries, Inc., which builds unit-load testing equipment and provides testing and training services, says brand owners "don't know the issues they have regarding securement," and "shippers need to do more testing of final packaging."

He notes that European authorities recently put in place load stability requirements that are in effect in many countries, and will be effective soon in the EU, that require loads to be tested and certified as compliant with requirements for withstanding g-forces. He thinks it's possible that similar requirements will spread to the U.S. before long.

Packaging makers and shippers who aren't already thinking about what they can do to help assure their products' safe transportation are probably well advised to start. Load securement materials and procedures cost more than nothing, of course, but almost certainly cost less than losses that might burden your company as a result of product damage or personal injuries. **PW**

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