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The publication *Safe Stowage*, prepared by External Affairs and International Trade Canada, deals with the proper methods of efficient and effective stowage.

## **Handling Techniques According to Freight**

There are three general kinds of freight, each requiring different handling techniques:

- bulk freight;
- unit load freight; and
- containerized freight.

### **1. Bulk Freight**

#### **a. Definition**

Bulk freight is freight which, due to its physical properties, cannot or should not be packaged in anything less than the transportation unit itself.

#### **b. Examples**

Examples include grains and ores; forest products; steel and other processed metal products; cars, trucks and other transportation equipment; machinery and other industrial equipment of a size which cannot be packaged or containerized.

#### **c. Handling Techniques**

Handling involves direct loading into transport vehicles or vessels using facilities and equipment provided on the vessel or at the loading site.

Bulk freight can be handled only by carriers equipped to do so. Special loading operations and facilities are required. The knowledge of those who handle the product, rather than a knowledge of the product itself, is important where bulk freight is concerned.

### **2. Unit Load Freight**

#### **a. Definition**

Unit load freight involves one or more packages secured to a pallet or skid or other "unitizing" device,

such that it can be handled, loaded and secured as a single unit.

The objective of unit load freight is to save labour and time while simultaneously providing security. The unit load cuts handling operations down to a minimum by moving a large number of packages by mechanical means. Strapping and packaging merchandise together reduces pilferage and breakage.

#### **b. Examples**

Examples include almost any commodity which is bagged, boxed, in cartons, crated, wrapped or stacked, or which can be loaded onto pallets, built up on skids, and/or braced.

#### **c. Handling Techniques**

Handling involves equipment such as forklift trucks, cranes, slings, etc.

Unit loads are often secured to pallets by horizontal and vertical strapping. Shrink-and-stretch plastic wrappings are used to stabilize and protect palletized loads. Stacking protection for the top of the load is accomplished with a lumber or plywood cap. Loads susceptible to compression are supported with vertical framing. In some cases, the entire pallet load may be encased in a cardboard or fibreglass enclosure.

*i. Palletizing Guidelines.* Factors to bear in mind for securing and protecting goods in unit loads include:

- wherever possible, goods should be secured to pallets in bonded fashion;
- goods should be placed with weight evenly distributed, with heavier weights at the bottom and lighter ones at the top;
- goods should not overhang the pallet;
- in some instances, goods will require independent securing before being placed on the pallet;
- strapping should be two-way for complete securing and should be placed so that it cannot be broken by normal use of a forklift truck;
- metal-to-metal contact should be avoided by insertion of wood, cardboard or cloth to prevent slipping;