

UNIT LOADS

Many commodities can be economically palletized or unitized to facilitate their handling, stowage and protection. Often, packing costs can also be significantly reduced. Pallet and unit loads offer the following additional advantages:

- Requires use of mechanical handling equipment and reduces the manual handling damage hazard since it eliminates the multiple handling of individual items.
- Reduces opportunity for pilferage and theft and permits early detection of tampering.
- Speeds loading and unloading of trailers, boxcars, intermodal containers, barges, ships and aircraft.
- Facilitates application of water-proofing protection to the load: the overwrap applied accompanies the load for the entire journey.
- Reduces incidence of lost or astray items.
- Facilitates checking and inventory of shipment.

PALLETIZING is the assembly of one or more packages on a pallet base and securing the load to the pallet.

PALLETIZING CARGO

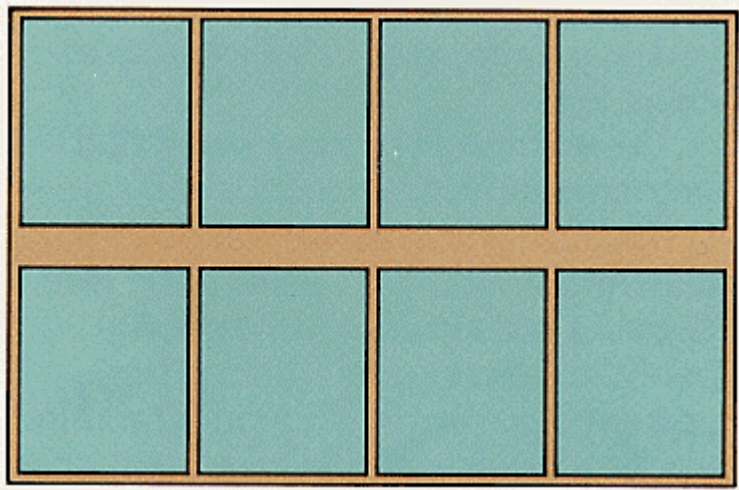
The optimal size of the pallet depends on the internal dimensions of the intermodal container and the form and weight of the packages. Four-way pallets (i.e., those that can be lifted from all sides by a forklift truck), usually make best use of the floor area of a container.

The recommended packing patterns for standard pallet sizes are shown in the following charts.

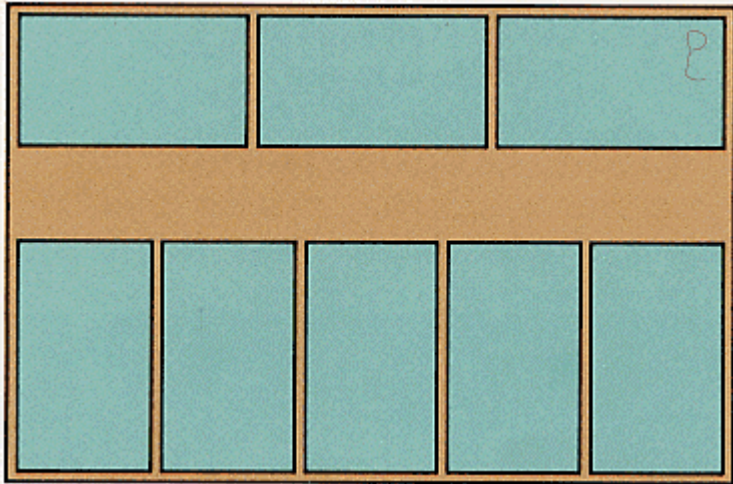
Select the pallet that:

1. Best utilizes the space of the mode of transportation to be used.
2. Best utilizes the package dimensions of the item to be shipped.
3. Limits the weight of the palletized load to 2,200 pounds (1,000 kg).

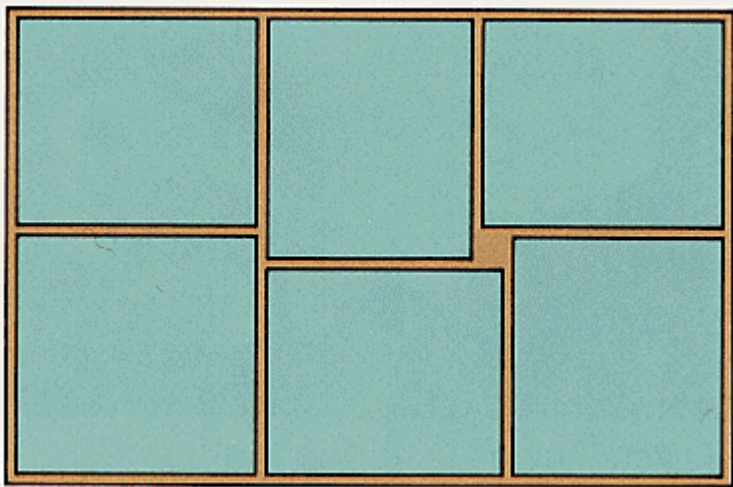
The following images show standard methods of transporting cargo across rivers in North America in the early 19th century



Storage pattern A for pallets.



Storage pattern B for pallets.



Storage pattern C for 4-way pallets only.

Container Stowage

Size of Container	20'			40'			
	Pallet size	Recom- mended pattern	Max. no.	Floor utili- zation %	Recom- mended pattern	Max. no.	Floor utili- zation %
	<i>mm inches</i>						
	1,000 x 800 40" x 32"	A	14	83.2	A	28	81.2
	1,100 x 800 44" x 32"	A	14	91.4	A	28	89.3
	1,100 x 900 44" x 36"	A	12	88.1	A	26	93.3
	1,100 x 1,100 44" x 44"	A	10	99.7	A	20	87.7
	1,100 x 1,400 44" x 55"	A	8	91.3	A	16	89.3
	1,200 x 800 48" x 32"	B/C	11	78.4	B/C	23	80.1
	1,200 x 1,000 48" x 40"	C	10	89.0	B/C	20	87.0

Assemble the individual unit packages on the pallet base without an overhang. Vertically aligned packages provide maximum stacking strength; however, inter-locking patterns afford maximum stability. The load pattern should minimize voids.

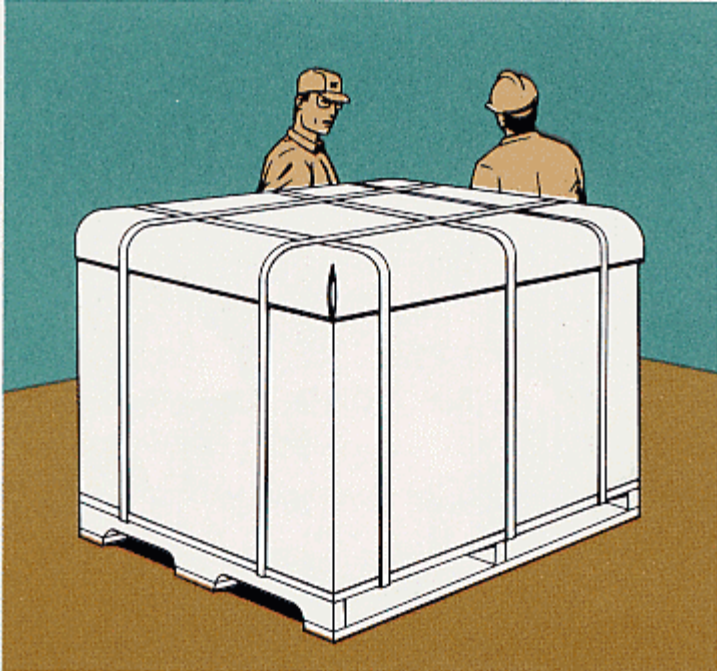
Insert spacers between the rows or layers of irregularly shaped items.

Adhesives can be used between cartons in a uniform load.

Secure the load tightly and firmly by using horizontal and vertical strapping.

Plastic shrink wrap can be used to stabilize palletized loads and also affords some protection against wetting. Another method used for protecting cargo susceptible to water damage is overwrapping with a barrier material.

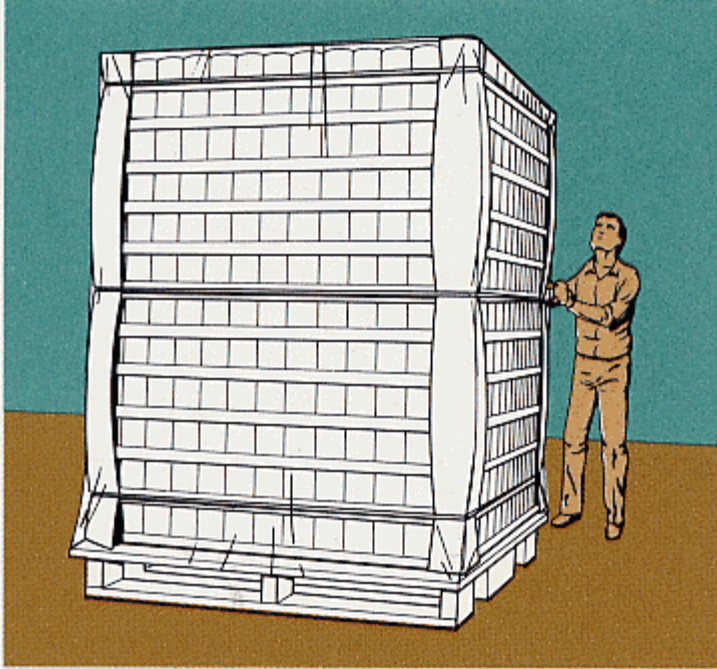
Provide stacking protection to the top of the pallet by using a lumber, plywood or fiberboard cap. Loads that are subject to compression damage must also be supported with vertical framing.



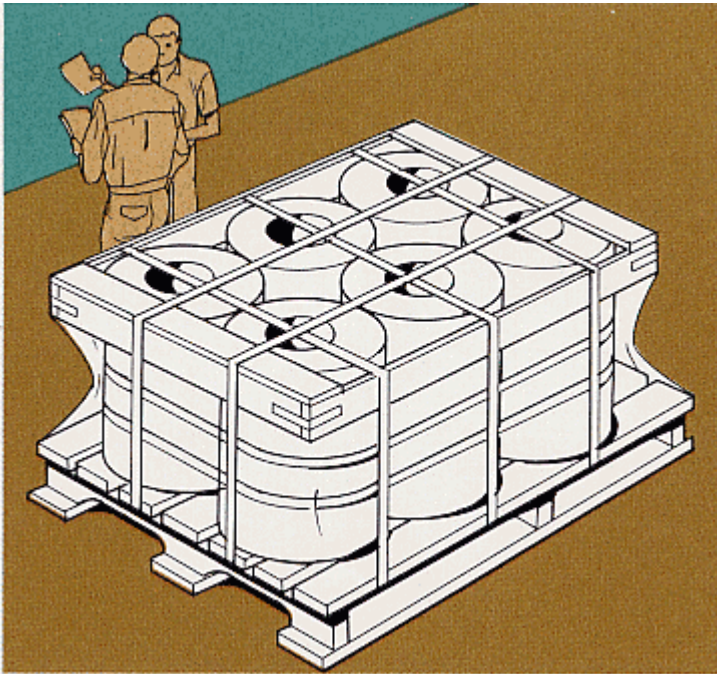
Palletized Consolidation Container



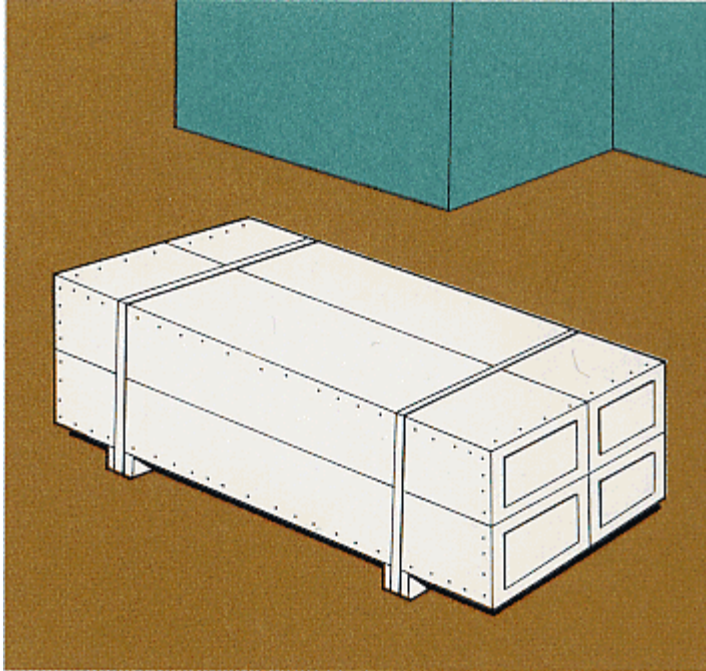
Palletized Load of Bagged Cargo



Shrink Film Overwrap of Palletized Load



Palletized Drum Load



Unitized Load

UNITIZING CARGO

Unitizing is the assembly of one or more items into a compact load, secured together and provided with skids and cleats for ease of handling.

Assemble individual items into one unit by bolting, nailing or strapping together.

Provide vertical cleats on sides of load to facilitate handling by cargo slings.

Provide water damage protection by using plastic shrink wrap or stretch wrap on individual items before assembly into unit load.

Apply shrink wrap or stretch wrap to entire load.

Use waterproof paper or plastic film overwrap.

The American National Standards Institute (ANSI) publishes a guide to aid manufacturers, consumers and the general public in selecting unit-load and transport-package sizes to efficiently fit within truck trailers, intermodal containers, or railroad box-cars. Unit load stacking patterns are also presented.

ANSI can be contacted at:

1430 Broadway
New York, NY 10018
Reference ANSI MH10

Security

Cargo security worldwide must be improved if theft and related losses are to be reduced. Losses range from the pilferage of individual items of cargo to the theft of a 40-foot container or the hijack of a tractor/trailer. Although the latter cannot be ignored, the majority of incidents involve cargo taken from transportation facilities by personnel authorized to be there and on vehicles controlled or similarly authorized by management. There is also a growing sense of the vulnerability of ship and ports/harbors to criminal and terrorist violence.

The task at hand is to establish and maintain a cargo security program, providing organizational, physical and procedural standards.

The Department of Transportation handbook entitled Guidelines for the Physical Security of Cargo, revised and up-dated by the National Cargo Security Council, is intended to assist responsible management within the entire transportation network. Clearly not regulatory in nature, the Guidelines, nonetheless, reflect latest state-of-the-art technologies and are strongly encouraged and suggested by prudence. An effective

cargo security system can be modeled upon them. Copies of this publication are available through the Council's office.

In some cases, attaining and implementing these recommended practices may entail substantial expense. However, they have proven to be effective. Conversely, "bargain basement" measures may provide a false sense of security and an open invitation to theft/pilferage. Experience demonstrates that the decrease in cargo loss, i.e., loss of profit dollars, far outweighs the expense of taking recommended security measures.

Several other organizations have pledged their support to making the ports of the world safe and secure. They are positioned to offer "local" solutions/ approaches.

- The Port Security Committee of the American Association of Port Authorities is attempting to combat cargo theft by initiating discussions between transportation entities, insurance carriers, port management and law enforcement on the present state of affairs in cargo security. It has been concluded that cargo theft can be controlled effectively only when all concerned parties communicate with each other, and understand that cargo theft damages the profit potential, prestige and credibility of everyone within the industry.
- The International Association of Chiefs of Police is also strongly committed to the cargo crime battle. The Cargo Security committee of this association has provided training seminars and other aids to law enforcement and industry personnel involved in cargo security. They have assisted in the development of specialized training courses through the United States Federal Law Enforcement Training Center at Glynco, Georgia.
- On the global scene, the International Association of Airport and Seaport Police has addressed the problem by developing a truly international team of port law enforcement managers and directors capable of coordinating cargo theft investigations around the world. The IAASP is also committed to assisting the United Nations on the world's cargo security situation, and has offered its services, expertise and other resources to help all nations deal with the problem.

Additional information relative to the aforementioned services and capabilities can be made by writing to the following addresses:

ATTN: National Cargo Security Council
1945 Old Gallows Road
Suite 580
Vienna, VA 22182

ATTN: Port Security Committee
American Association of
Port Authorities
1010 Duke Street
Alexandria, VA 22314

ATTN: Cargo Security Committee
International Association of
Chiefs of Police
1110 Glebe Road
Arlington, VA 22201

ATTN: General Secretariat
International Association of Airport and Seaport Police
580-2755 Lougheed Highway
Port Coquitlam
British Columbia
Canada V3B5Y9

Although the pattern of maritime fraud, including insurance fraud, documentary fraud and charter party defaults, continues to decrease, significant opportunities still exist due to prevailing economic and political conditions. "Fraudsters" continue to exploit embargoes and countries where increasing trade activity is not matched with improvements in local infrastructures.

The International Chamber of Commerce's International Maritime Bureau (IMB) continues to work toward the prevention and control of fraud and related suspect practices. They can be reached at:

Maritime House
1 Linton Road
Barking, Essex 1G11 8HG
United Kingdom
44-81-591-3000 (Phone)
44-81-594-2833 (FAX)
Telex: 89564921MB LDNG

Note: Systems that integrate a powerful x-ray source with a vapor detection device now enable Customs or relevant port authority personnel to quickly examine cargo without the need to unload and unpack conveyance, container or pallet. Shippers should be advised that the high energy x-ray capable of penetrating fully loaded ISO containers can adversely affect goods, inter alia, live tissue, unexposed photographic material, certain raw materials for the manufacture of film and some pharmaceuticals. In these instances, manifests should be declared as to contents and bills of lading clausued "DO NOT X-RAY" Having the local representative or consignee attend during clearance operations is a further positive step.

Suggestions for Valuable Shipments (Air)

In planning the shipment of valuable cargo, seek a level of security comparable to the security you know you require for your own premises.

Select a tariff designed for the movement of valuable goods and abide by its recommendations.

Make advance booking with a carrier for shipment so consignees may be on alert for arrival.

Tender shipment to carrier not more than 3 hours prior to the scheduled departure of the flight for which advance arrangements have been made.

Notify the consignee to accept delivery of the shipment at destination within 3 hours after scheduled arrival time of flight.

Avoid shipping when consignment will arrive at destination on weekends or holidays.

When delays in acceptance of valuable merchandise are anticipated e.g., when weekend or holiday arrivals are unavoidable, arrange for special handling such as transportation via an armored vehicle or placement in a suitable repository.

Adhere to minimum package dimensions. Most tariffs provide for minimum package size of one cubic foot.

Use only new, well-constructed packaging for your product.

Clear and complete delivery and handling instructions should appear on at least three surfaces of the exterior shipping package.

Eliminate all product identification on the exterior of shipping package.

Avoid shipping on a routine schedule and report suspected theft quickly.