



Securing Your Freight:

BLOCKING & BRACING TECHNIQUES

A PUBLICATION OF KNICHEL LOGISTICS

www.knichellogistics.com

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INTRODUCTION

Protect your investment.

The information contained within this booklet is meant to serve as a guideline and manual to help prevent costly freight claims. After reading the information provided, you will better understand the appropriate methods to secure your freight, learn how to properly plan your load, and recognize how crucial proper blocking and bracing really is.

At Knichel Logistics, we follow the transportation and insurance industry guidelines when issues of blocking and bracing and freight claims are at hand. In a perfect world, your product would arrive exactly how it was made and loaded. Unfortunately, we do not live in a perfect world and this is where a booklet full of valuable information will keep you up to speed to help improve your transportation experience.

So please take the time to look through the pages of this informative guide to achieve a better understanding of what steps you need to take to ensure that your freight is secured. The key to faultless transportation is knowledge. The better informed you are, the more satisfying your transportation experience will be.

Below are links to other helpful information regarding blocking & bracing:

- <http://www.knichellogistics.com/customers/blocking-and-bracing/>
- https://www.up.com/customers/shipment_quality/intermodal/blocking_bracing/index.htm
- <http://www.intermodal.com/index.cfm/resource-center/information-kits/blocking-bracing/>



Section One

WAYS TO PROTECT YOUR SHIPMENT

PROTECTING YOUR SHIPMENT

Who is responsible for what?

- **Customers are responsible for ensuring that all loads are properly secured** for the transportation of product! If traveling by rail, they must be prepared according to the AAR Intermodal loading guide, or as approved by individual railroads.
- **Shippers are responsible for inspecting equipment prior to loading** to ensure that it is suitable to protect and preserve the product during transit. Although the shipper makes the ultimate decision whether or not a container or trailer is suitable for loading their product, Knichel Logistics does have a pre-trip process that is required of all contracted carriers that pick-up shipments for Knichel in order to ensure the equipment they bring to the shipper meets the qualifications of the product that will be loaded. This process significantly reduces the incidents where unsuitable containers/trailers are brought into our shippers for loading.
- Loads that shift in transit because they were not properly prepared for shipment, including blocking and bracing, air bags, shrink wrap, etc., will be adjusted at the customer's expense.
 - An important step to protect yourself is to take a picture of the load from the rear of the container once the product is finished being loaded and secured.
 - If you have any questions or would like a rail representative to come to your facility to go over proper blocking and bracing procedures or loading information, please contact us at 724-449-3300 and we will make the arrangements.

PROTECTING YOUR SHIPMENT

Inspection of equipment & load planning.

Inspection and Selection of Equipment.

The equipment supplier has a responsibility to furnish trailers and containers which are clean, have sound roofs, sides, end walls, smooth floors, and snug fitting doors. Any exception is cause for rejection. The shipper also has a responsibility to inspect the trailer to see that it is suitable to carry lading safely to the destination.

If the trailer furnished is not suitable for loading, but the shipper elects to load it, then the shipper is responsible to properly prepare the trailer prior to loading (e.g. covering holes in walls).

Load Planning.

When planning your shipment (this is important!), refer to these five loading steps to minimize a claim:

1. Plan your load to prevent damage to lading and equipment. Lading that is already damaged is not to be loaded.
2. Plan your load so that crosswise void space is minimized. Use appropriate filler material or bracing to maintain vertical alignment and to prevent cross-wise movement.
3. Secure incomplete layers of lading to prevent movement.
4. Fill length-wise space with lading, approved filler material, or appropriate blocking and bracing. Do not use void filler material or pallets as a bulkhead.
5. Weight must be evenly distributed side-to-side and end-to-end.



Section Two

MAXIMUM WEIGHTS, DISTRIBUTION & LADING CAPACITY

MAX WEIGHTS & DISTRIBUTION

Follow these AAR specified weight regulations!

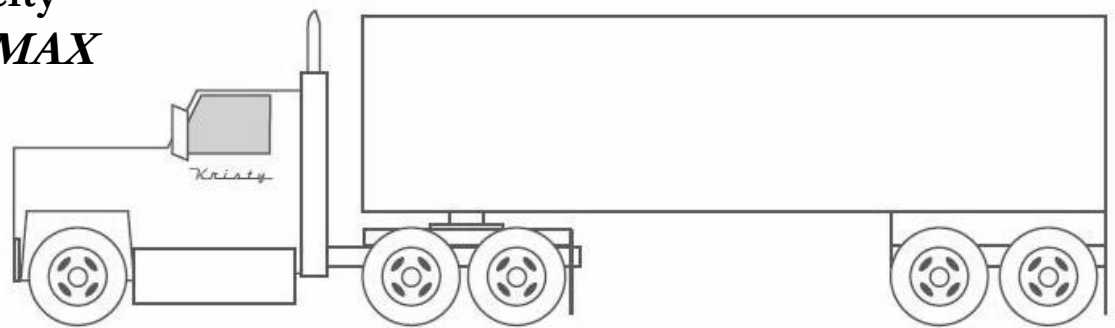
1. Lading weight in trailers must be evenly distributed cross-wise and length-wise with no more than 25,000 lbs. per 10 linear feet.
2. Weight of lading and trailer must conform to all federal, state, provincial, and local regulations for both origin and destination.
3. The load weight must not exceed the limit as stated on the manufacturer's plate for TOFC (trailer on freight car).
4. For COFC (container on freight car), the combined weight of the container and lading may not exceed the specified weights below for each container length:

Container Length	Maximum Gross Weight
53'	67,200 lbs. (container, chassis, product)
48'	67,200 lbs. (container, chassis, product)
45'	67,200 lbs. (container, chassis, product)
40'	67,200 lbs. (container, chassis, product)
20'	52,900 lbs. (container, chassis, product)

LADING CAPACITY

Single stacked intermodal/truckload trailer.

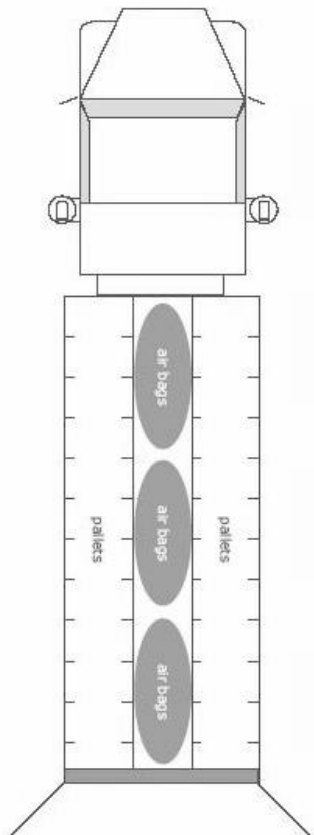
Total Capacity
80,000 lbs. MAX



Steering Axle
12,000 lbs. MAX

Drive Axle
34,000 lbs. MAX

Rear Axle
34,000 lbs. MAX



Blocking and Bracing Suggestions:

- No voids in front and rear of unit
- Floor should be lined if on slip-sheets
- Walls should be lined to protect product from rubbing
- Product stretch-wrapped to the pallets
- Air bags or core-filler between pallets
- 2 x 4's to lock pallets in place at rear

Remember! The railroads will NOT honor any claim if the product is not properly blocked and braced.



Section Three

SECURING YOUR PRODUCT IN THE CONTAINER

UNITIZATION

Wooden pallets, slip sheets & incomplete layers.

Unitization should not be overlooked - by grouping smaller similarly sized products into a larger unit, a stronger unit is created.

On Wooden Pallets:

- Arrange for palletized units with unit-to-unit contact with no overhang of the product.
- Fill any length-wise under-hang on pallets.
- Make height and width dimensions of the faces of the filler material as near as possible the same as the dimensions of the faces of the units they will be separating.

On Slip Sheets:

- Ensure units have unit-to-unit contact length-wise in trailer. Fill any length-wise void to provide a solid face for applying a means of security.
- Minimize cross-wise void and maintain vertical alignment.

Incomplete Layers:

- Avoid incomplete layers whenever possible. When incomplete layers have to be loaded, use full face and height bulkhead for light-weight commodities. For heavier commodities, unitize the rear portion of the incomplete layer to the bottom layer. Unitize with appropriate bulkheads and protection between straps and the lading.
- Separate different type packaging length-wise by use of plywood or fiberboard sheets of sufficient enough height to protect the tallest stack of product.
- Use fillers to take up cross-wise space in trailer to prevent movement in the load.
- Use separators when commodities are loaded in more than one layer. Use separator material to provide an even base for the upper layer. Generally 1/2" plywood sheets or other suitable material may be used. Use fiberboard protection between separator material if units consist of bags or bales.

MATERIALS TO USE

Wood, nails, disposable inflatable dunnage.

Wood:

- Use properly seasoned lumber.
- Do not use rotted or decayed lumber. Do not use lumber with knots or knotholes. Check for splits that will effect holding strength or possibly interfere with nailing.
- Select appropriately sized lumber for the weight, size, and nature of the commodity to be secured.

Nails:

- Do not nail into the walls of the trailer itself. Toe nailing is not permitted.
- Drive nails into the side grain of the lumber. Drive all nails straight at a 90 degree angle to the floor.
- Stagger nails to prevent the wood from splitting. Position nails about 5” apart.
- Use nails of such length to develop the necessary holding power through penetration into trailer floor and other blocking and bracing members.

Disposable Inflatable Dunnage:

- Width of bag should fit the height of the load. Length of bag should cover two units of lading.
- Approved filler material must be used if cross-wise void exceeds 12” after inflating bag.
- Use buffer material between bag and lading to distribute outward pressure evenly against lading.
- Position bag 1” off of the trailer floor and pallet to prevent chafing.
- Inflate bags to 2.0-2.5 psi. Check pressure with an air gauge to be sure.

REAR DOORS

When to use them and when you shouldn't.

Trailer/container doors may NOT be used to secure loads under this circumstance:

- Doors may not be used for securement if lading is rigid, very dense, or shaped such that the area of door contact is minimal. Secure lading to prevent length-wise movement.

Trailer/container doors MAY be used to secure loads under these circumstances:

- Doors of vehicles meeting AAR m931 and m930 specifications can be used to restrain lading under the following conditions:
 1. The load consists of multi-unit lading such as boxes of food stuff, tissue or soft paper products, furniture, appliances, etc., not exceeding 40,000 lbs., covering a minimum of 60% of the door area and evenly distributed throughout the vehicle.
 2. Lading must be loaded tight, length-wise and cross-wise, flush to the rear doors of the vehicle, allowing no room for movement. If any void exists, fill space with approved dunnage material.
 3. The doors must fit squarely, the hinges must be tight, and locking bars must be in good condition and functioning properly.



GET BLOCKING & BRACING RIGHT

By blocking and bracing your product properly, you are creating a safety net for your business. The effort is *well worth* not having to deal with freight claims. For more information, click below or contact us at 724-449-3300.

[MORE INFO HERE](#)

