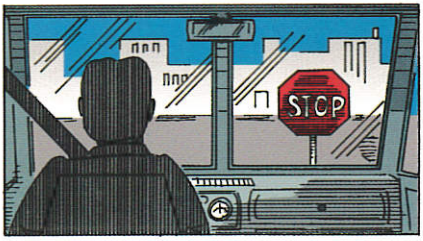
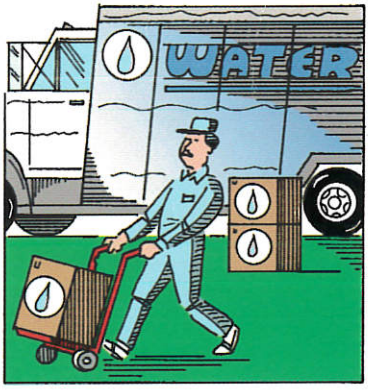
# Keller's
# Route and Delivery Driver's Safety Handbook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# Materials Handling

Moving cargo safely and efficiently involves more than just its transportation down the road. Materials must first be loaded correctly, secured for transport, maintained properly during the trip, and, once at their destination, unloaded safely. Many delivery drivers are responsible for this whole process.

In this chapter we will talk about:

- Safe loading and unloading procedures;
- How to use two-wheel dollies and pallet jacks;
- Methods for securing cargo, including blocking, bracing, dunnage, load locking bars, cargo straps, tiedown assemblies, and tarps;
- Procedures for handling perishable materials; and
- Operating refrigerated vehicles.

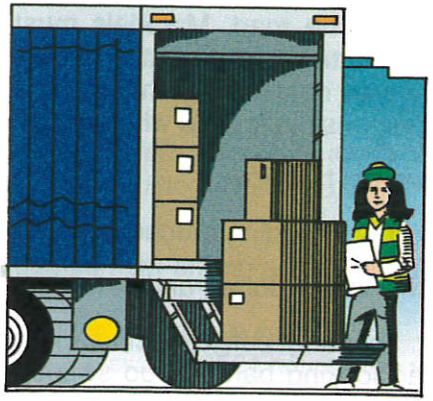
## Loading and Unloading

Loading your vehicle properly is the first key step to ensuring personal and vehicle safety and damage-free deliveries. Proper loading requires skill, forethought, and good judgement.

Your company should have loading guidelines specific for your vehicle and the type of cargo you haul. However, there are general guidelines to keep in mind:

- Every vehicle is designed to carry up to a certain amount of weight. Know and respect the load limitations of your vehicle. Overloading can cause unsafe steering, increased braking distances, and reduced speed control.
- Before loading (or unloading) set your parking brake and chock the wheels to prevent the vehicle from moving.
- Inspect the cargo area before loading. Make sure it is clean and free of debris. Look especially for nails or other sharp items that could damage your cargo.

- Compare your cargo to your bill of lading. Make sure you are loading the proper freight. If there are inconsistencies, contact your supervisor.



- Check the ramp from the vehicle to the dock to be sure it is even and secure.
- Take your delivery order into consideration. Load the vehicle in an order and manner that will allow you to access your first deliveries first.
- If you see a damaged, wet, or leaking package, or an item that is not properly sealed, report it to your supervisor. Either the item should not be loaded or the damage should be documented.
- Distribute your cargo's weight evenly over the length of the vehicle whether it's a full or partial load. An unbalanced load can make vehicle handling unsafe.
- Don't load the cargo unnecessarily high, and always put your heaviest items on the bottom. Keeping the load low will lower your center of gravity and minimize the risk of a rollover on a sharp turn or during emergency maneuvers.
- Pack the items tightly enough to prevent them from shifting around.
- Follow any handling instructions on the cartons, such as "This End Up," or "Fragile."



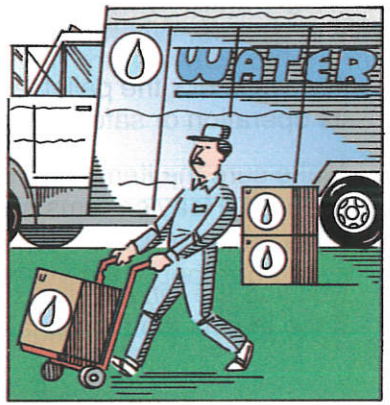
- Leave enough space at the top of the load to facilitate unloading. If you stack the load all the way to the ceiling, it will be impossible to use any type of tools to lift the load and back it out.

Depending on your job, you may use different types of tools for loading and unloading. Two-wheel dollies and pallet jacks are useful aids that can make the physically demanding job of loading and unloading your truck much easier. However, first you must learn how to use these items efficiently and safely.

### Two-Wheel Dollies

A dolly is a simple piece of equipment that will let you haul several items at one time or move heavier items with greater ease. Although its a simple device, if not used carefully it can crush toes, injure ankles, strain backs and damage cargo.

To use a dolly properly:




- Make sure the load is securely stacked and balanced. If so, tip the load forward slightly and push the "tongue" of the dolly completely under the load.
- The load should not limit your view. If you cannot see above and around the items, split the load if possible and make multiple trips.
- Test the load by moving it a short distance. You want to be sure it can be moved without shifting or falling.
- Once you're certain you can move the load safely, check your path to make sure no people or obstacles are in your way.
- Use your leg muscles to move the dolly. Keep your back straight and use one hand to steer and the other to balance the load.

- Do not try to push the dolly too fast.
- Make sure the floor is clean and flat before lowering the load.
- When lowering the load, use your leg muscles, not your back, to set the load on the floor.

When it's time to put the dolly in your vehicle, tip the top forward so it rests on the vehicle's floor. Then, lift the bottom and slide it into the vehicle. Once it's in, tip the dolly upright again and secure it so it won't move while you are driving.

### Pallet Jacks

When you must move cargo on pallets, you may use a pallet jack. Hand pallet jacks are best for short distances and on low grades. Powered pallet jacks are useful for heavier loads or when you have to move cargo greater distances.

Although relatively easy to use, pallet jacks must be used carefully to be safe. When using a pallet jack:

- Always check the pallet jack for any defects that might affect its operation or safe use.
- Make sure the items on the pallet are properly balanced and secured. Heavier items should be on the bottom with lighter ones on the top.
- Position the forks well into the pallet before raising the load. If the load is too heavy, take some of the items off.



When moving with the pallet jack, you should almost think of the task like operating in traffic. Your chief concern is not to collide with any person or obstacle.

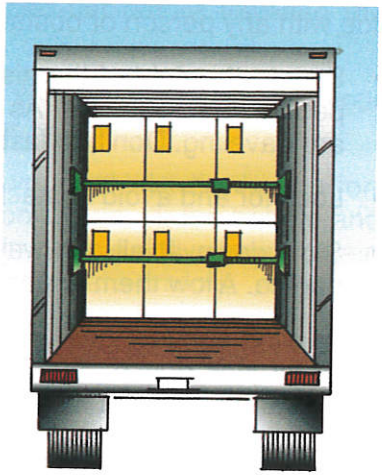
- Stay to the right of the aisle and keep a safe distance from people and obstacles. As you move, face the direction you are traveling. Don't go faster than a normal walking speed.
- Look for and avoid obstacles or debris on the floor.
- Slow down at all doorways and intersections and look for people. Allow them to pass first.
- At blind corners, use your horn to warn other people. If the pallet jack doesn't have a horn, listen for oncoming traffic and announce in a loud voice that you are coming through.
- If you must move close to an obstruction, put the pallet jack in reverse. Operating in reverse will give you better control and visibility.
- If you go into an elevator, back the pallet jack in. This way you can be sure you are safely in the elevator before the doors start to close.

## Cargo Securement

Once your cargo is properly loaded, you need to take steps to secure it. Shifting cargo can be easily damaged and is also a safety hazard. In a vehicle with an open cargo area, the load may also fall or blow into the roadway, becoming a hazard to other drivers, if not properly secured.

## General Securement Procedures

Your company is likely to have procedures for load securement that are specific to your type of vehicle and cargo. However, here are some general guidelines:



- Only use devices that are specifically designed for cargo securement. Use them in the manner they are intended to be used.
- If you use ladders, steps, or handholds while securing cargo, make sure they are properly positioned and in good repair.
- If your vehicle is equipped with side racks and holding posts, make sure they are higher than the load, in place, and well secured.
- Use appropriate personal protective gear, such as a hard hat or shoes with steel toes, when securing or unfastening a load.
- Never place a load against a closed door or rack if opening the door or rack will cause the load to fall.
- If someone else loads your vehicle, you should still check to make sure the load is properly distributed and secure.
- Check the securing devices periodically while on the road. The tension from the devices may compress the load and cause the devices to loosen.
- If your vehicle weighs 10,001 pounds or more or carries a placardable amount of hazardous materials, you are required to inspect the vehicle's cargo and load securing devices within 25 miles of starting your trip. You must also inspect the load every time you change duty status, after you've driven 3 hours, or after you've driven 150 miles, whichever comes first.



## Securement Methods and Devices

If the cargo completely fills the enclosed area of your delivery truck, it should be fairly secure. However, if the cargo doesn't fill the whole area, or if your cargo is not enclosed on all sides, you will need to use securement devices to make sure the materials do not shift during travel.

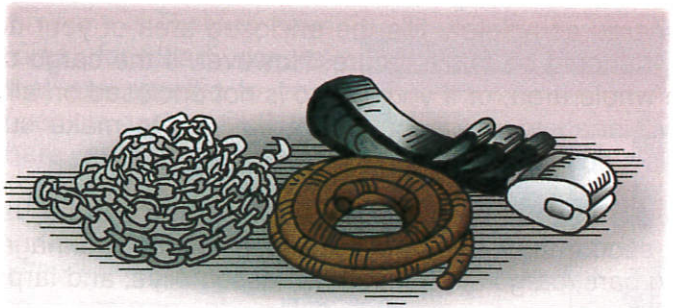
There are several methods and devices that can be used for cargo securement, such as blocking, bracing, dunnage, load locking bars, cargo straps, tiedown assemblies, and tarps.

**Blocking and bracing.** Blocking is a cargo securement procedure where you fit blocks snugly against the cargo's front, back, or sides to prevent the cargo from sliding. Normally, blocking is secured to the cargo deck or sides. Bracing (putting pressure on a piece of cargo to keep it in place) is generally used between cargo and the trailer ends or sides to keep an object stationary.

**Dunnage.** Dunnage is filler material used in the empty spaces between cargo. Dunnage keeps the cargo from shifting. Wood, cardboard, airbags, extra pallets, bubblewrap, and plastic are types of material used as dunnage.

**Load locking bars.** Load locking bars can be used vertically or horizontally. The bars have rubber feet that are placed against the vehicle walls or ceiling and floor. The bars are placed snugly against the cargo and then tightened with a jacking device until they are tightly wedged in place against the cargo.

**Cargo straps.** Some vehicles have tracks in the cargo compartment that accommodate cargo straps. The straps are hooked into the tracks and then tightened in front of or around the cargo which has been placed against the vehicle wall and/or back.



**Tiedown assemblies.** If you drive a vehicle with an open cargo compartment, you may use tiedowns, such as belts, straps, chains, or ropes, to secure your cargo. If you use tiedowns:

- Always check the rated load limit of the tiedown to make sure it's the proper strength for your load.
- Use at least one tiedown for every 10 feet of cargo. Always use at least two tiedowns.
- Before using, check the tiedowns for signs of wear or weakness. Don't use tiedowns that have been knotted or repaired.
- Place the tiedowns flat on the load and secure them to the vehicle using hooks, bolts, rails, rings, or other approved devices. The tiedowns should be tight against the load, but not so excessively tight that they damage the load.
- After use, store tiedowns in a clean, dry space.

**Tarps.** If you carry freight in an open cargo area, you may need to use a tarp. Tarps prevent loose material from blowing or falling out of a vehicle. They can also be used to protect cargo from the weather. If you use a tarp, make sure it fully covers your load and is secured at all securing points. While traveling, check your mirrors frequently to make sure the tarp has not become loose.



## Perishable Materials

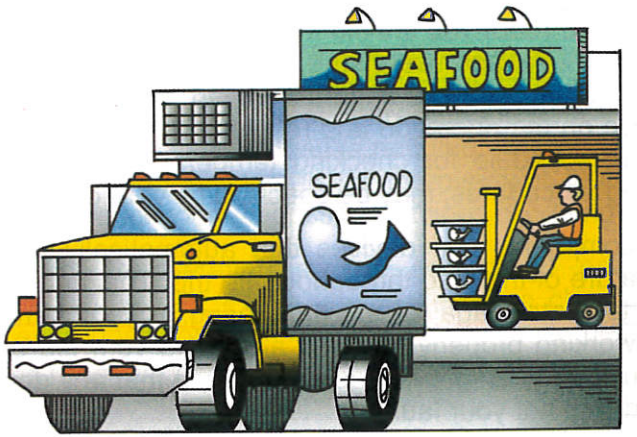
If the cargo you deliver is perishable, such as meat, produce, or frozen foods, you will have added responsibilities for taking care of your freight. These products often have to be maintained in a very narrow temperature range. If the cargo comes out of that temperature range, because of mechanical malfunction or driver error, the whole load may be ruined.

Drivers of perishable products must learn special procedures for loading the product, know how to maintain the product while on the road, and properly monitor and operate the specialized refrigeration unit ("reefer") on the vehicle. If you haul perishable products, your company should have instructions specific for your refrigerated vehicle and the product you haul. However, the following section outlines some general guidelines.

### Loading Concerns

While loading your refrigerated vehicle, you have two major concerns: temperature and air flow.

**Temperature.** Refrigerated trucks have special cooling units and are lined and insulated for precise temperature control. However, while they can maintain temperatures, they are usually not able to significantly lower them. This means the product on your vehicle must be cooled to the proper temperature before it is loaded.



Find out from your company what the proper pre-cooled temperature is for your load. If you haul different commodities, this will vary depending on the product.

Check and record the temperature of several units of your cargo before loading. If the temperature is not in the required range, contact your supervisor.

In addition to pre-cooling the cargo, your vehicle should also be pre-cooled to the proper temperature before loading. Make sure the vehicle is thoroughly cooled by taking temperature readings of the inside walls and floor. The readings should be the same or very close.

**Air flow.** Air flow is another chief concern when loading. To stay cool, the air must be able to circulate among the product. In many vehicles, the airflow typically begins at the evaporator air outlet and travels through a duct which disperses it along the walls and to the rear of the vehicle. On the route back, the air travels under and through the load, then up inside the front bulkhead where the whole process begins again. Ribbed flooring helps ensure smooth airflow.

When loading, you must position the items so that the air can circulate freely. The cargo should be kept away from the walls and placed so there's a small amount of space between the cartons. Pallets are useful for improving circulation because they allow for return air space under the load.

### On the Road

While on the road, you should periodically check the temperature of your load and make sure it is within the specified range for your product. This is important, even if you are keeping a close eye on the operation and readings of the refer unit itself. An exact schedule for checking temperatures, and perhaps recording procedures, may be specified by your company.

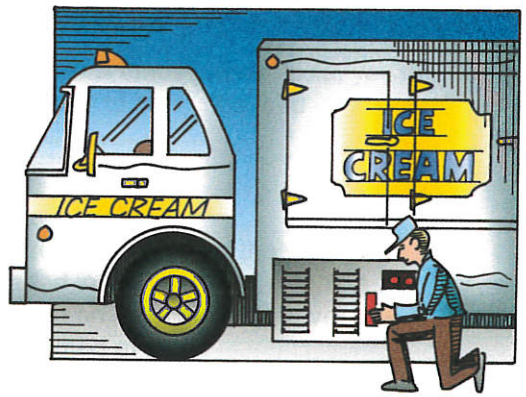
Some companies use devices that automatically record the temperature of the load throughout the trip. This unit is usually locked to protect against any tampering. If your refrigeration unit is working properly and you are doing your job correctly, these monitors can provide good evidence that any damage to the load was not your fault.



### Operating the Reefer Unit

Refrigerated vehicles have a separate power source and fuel supply for the cooling unit. This unit must be inspected and maintained to ensure proper operation. Your company will probably have specific instructions for these procedures, but following are some general guidelines:

- Always check the condition and operation of the refrigeration unit before you go to pick up a load.




- If the temperature is set below 40° F, defrost the unit about a half hour after loading by pressing the manual defrost switch. This defrosting will remove the ice build-up on the evaporator grill and prevent the loss of air circulation.
- Compare the thermostat setting with the actual temperature in the cargo unit after you've traveled long enough for the system to have cycled between high- and low-speed operation several times. The temperatures should be within a few degrees of each other. If they're not, find out why, and keep checking at frequent intervals for improvement. Get the system serviced as soon as possible if things don't improve.
- Check the refrigeration system and cargo periodically throughout the day. When you make these checks, keep your eyes open for ice-build up, and manually defrost the unit, as necessary.

Driver _____
Instructor_____
Date _____
Location _____

## Materials Handling Review

1. What is a step you should take before loading a vehicle?
   a. Set the parking brake and chock your wheels
   b. Inspect the cargo area of your vehicle
   c. Compare the cargo to be loaded against the bill of lading
   d. All of the above

2. If someone else loads your vehicle, you are not responsible and you don't have to check the load.
   a. True
   b. False

3. Cargo should be:
   a. Loaded in the front of the vehicle
   b. Loaded in the back of the vehicle
   c. Loaded on each side of the vehicle
   d. Distributed evenly

4. When operating a pallet jack:
   a. You have the right-of-way at all intersections – other people should stop for you!
   b. You should balance pallets on the tips of the fork
   c. Go as fast as possible so you can get the load on quickly
   d. Slow down at doorways and intersections and watch for people

5. Cargo that is not properly secured is both a safety hazard and likely to become damaged:
   a. True
   b. False

6. Drivers governed by the federal safety rules must check their load and securement devices:
   a. Within the first 25 miles of their trip
   b. Every time they change duty status
   c. Every 3 hours or 150 miles
   d. All of the above

7. Which of these would you *not* use to secure cargo:
   a. Blocking and bracing
   b. Load locking bars
   c. Duct tape
   d. Cargo straps

8. Refrigerated vehicles have powerful cooling units that can bring down temperatures quickly.
   a. True
   b. False

9. Temperature and _____are primary concerns when loading a refrigerated truck.
   a. Air flow
   b. Pressure
   c. Surge
   d. Color

10. Once a refrigerated truck is loaded, it's unnecessary to check the temperature again.
    a. True
    b. False