

# **TRAILER LOADING AND TOWING GUIDE**

**Don't let your trip end like this.**



**THE FACTS ON SAFE LOADING AND TOWING  
KNOW YOUR WEIGHT LIMITS.**

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## INTRODUCTION

Hitch systems, towing packages, tongue weight, and driving permits—there's a lot more to towing a trailer than just hitching up and taking off down the road. This is designed to help you make safe decisions while towing a trailer. The following are topics that will be covered in this guide:

- Things to consider if you already have a tow vehicle
- The importance of trailer manufacturer's tow ratings
- How to measure the weight of a trailer
- The hitching, breaking, and wiring systems that connect tow vehicles with trailers
- Tire safety
- Proper loading and weight distribution of cargo and equipment
- Pre departure checklist
- Safety tips for driving with a trailer

This brochure is not a substitute for the technical information found in manufacturers' towing guides and vehicle owner's manuals. Its purpose is to give you some basic information about factors to consider when towing, and equipment you will need to ensure your safety and that of your passengers, as well as the safety of other people on the road.

## RESOURCES

North American Trailer Dealer Association  
6860 Gulfport Blvd. #116  
St. Petersburg FL 33707  
727-360-0304  
727-231-8356 Fax

National Association of Trailer Manufacturers  
(NATM)  
2945 SW. Wanamaker Drive, Suite A  
Topeka, KS 66614-5321  
785-271-0208  
785-271-0166 Fax  
[www.natm.com](http://www.natm.com)

Recreation Vehicle Industry Association (RVIA)  
1896 Preston White Drive  
P.O. Box 2999  
Reston, VA 20195-0999  
703-620-6003  
703-620-5071 Fax  
[www.rvia.org](http://www.rvia.org)

National Marine Manufacturers Association  
(NMMA)  
200 East Randolph Drive, Suite 5100  
Chicago, IL 60601-6528  
312-946-6200  
312-946-0388 Fax  
[www.nmma.org](http://www.nmma.org)

For questions regarding your tow vehicle, please contact your automobile dealer or manufacturer.

## Manufacturers' Tow Vehicle Ratings

Manufacturers' tow vehicle ratings address tongue weight as well as the individual, combined, and fully loaded weights at which a tow vehicle can safely tow a trailer:

- Amount the tow vehicle may weigh when fully loaded, or **gross vehicle weight rating (GVWR)**.
- Weight a vehicle can tow. This figure may vary depending on the vehicle's equipment, such as a manual or automatic transmission and whether the vehicle is equipped with four-wheel drive.
- Permissible combined weight of the tow vehicle, trailer, passengers, equipment, fuel, etc., that the vehicle can handle, or **gross combination weight rating (GCWR)**.
- Weight a single axle can carry, or **gross axle weight rating (GAWR)**.

Manufacturers consider the loaded weight of a trailer when specifying **tongue weight**—the amount of the trailer's weight that presses down on the trailer hitch. Too little tongue weight can cause the trailer to sway. Too much tongue weight can cause many problems, including not enough weight on the front wheels of the tow vehicle.

When this occurs, the tow vehicle will be less responsive to steering. A weight-distributing hitch can remedy this problem by transferring weight to the front axle of the tow vehicle. Manufacturers also establish the gross axle weight and provide a rating that denotes the maximum weight a single axle can carry. Knowing these weights will help you when it is time to load your trailer. Remember that the gross axle weight rating listed on the tow vehicle's certification label must not be exceeded.

## CONNECTING THE TRAILER TO THE TOW VEHICLE

The trailer towing industry has developed a classification system that differentiates hitches according to the amount of weight they can tow. This system addresses tongue weight and total weight. Keep in mind that within each classification, there are numerous hitches made by a variety of manufacturers. Make sure the hitch has provisions for the connection of **safety chains**, which are required by most states. When connected, safety chains should have some slack to permit sharp turns but should not drag on the road. In addition, they should cross under the trailer tongue to help prevent the tongue from dropping to the road in the event the trailer separates from the tow vehicle.

**WIRING:** Federal law requires trailers to have taillights, brake lights, side marker lights, turn signals, and side and rear reflectors. Some trailers also have backup lights. To provide power to these lights, a four-way (or more) **connector** is hooked into the tow vehicle's electrical system. Many tow vehicle manufacturers offer a 7-way connector that may include an electric brake signal, (Make sure your tow vehicle wiring connection matches the electrical connector of the trailer). Because the wiring systems of many tow vehicles use separate wires for turn signals and stop lights, you may need to purchase a taillight converter. This converter will combine these wires so that they can be connected to the trailer lighting system. Most factory-installed towing packages include a trailer wire harness that will perform this function if required. If you tow more than one type of trailer, you also may need to purchase an adapter to accommodate differences in the wiring systems.

## **TIRE SAFETY**

All your trailer tires should be the same type, size, and construction—do not mix biasbelted and radial tires. In selecting tires for your trailer, buy the size, type, and load range found on the trailer's certification label or in the owner's manual. Keep in mind that tires have a load rating that indicates the amount of weight they can carry safely. As with your tow vehicle, always maintain proper tire pressure and replace worn tires. Remember—your tow vehicle tires may require a higher tire pressure for towing, especially heavy loads.

## **LOADING AND WEIGHT DISTRIBUTION**

Your ability to handle and control your tow vehicle and trailer is greatly improved when the cargo is properly loaded and distributed. Refer to your tow vehicle and trailer owner's manuals to find out how to:

- Balance cargo weight from side to side
- Distribute cargo weight evenly along the length of the trailer
- Secure and brace all items to prevent them from moving during travel
- Adjust the height of the tow vehicle/trailer interface
- Apply load leveling (weight distributing) hitch bars

Most trailers and tow vehicles should be level (parallel to the ground) during travel. Check the instructions from your trailer manufacturer to make sure this is correct for your combination of vehicles.

## SAFETY TIPS FOR DRIVING WITH A TRAILER

Take time to practice before driving on main roads and never allow anyone to ride in or on the trailer. Before you leave, remember to check routes and restrictions on bridges and tunnels. Consider the following safety tips each time you drive with a trailer.

**General Handling:** Use the driving gear that the manufacturer recommends for towing. Drive at moderate speeds. This will place less strain on your tow vehicle and trailer. Trailer instability (sway) is more likely to occur as speed increases. Avoid sudden stops and starts that can cause skidding, sliding, or jackknifing. Avoid sudden steering maneuvers that might create sway or undue side force on the trailer. Slow down when traveling over bumpy roads, railroad crossings, and ditches. Make wider turns at curves and corners. Because your trailer's wheels are closer to the inside of a turn than the wheels of your tow vehicle, they are more likely to hit or ride up over curbs. To control swaying caused by air pressure changes and wind buffeting when larger vehicles pass from either direction, release the accelerator pedal to slow down and keep a firm grip on the steering wheel.

**Braking:** Allow considerably more distance for stopping. If you have an electric trailer brake controller and excessive sway occurs, activate the trailer brake controller by hand. Do not attempt to control trailer sway by applying the tow vehicle brakes; this will generally make the sway worse. Always anticipate the need to slow down. To reduce speed, shift to a lower gear and press the brakes lightly.

## **Acceleration and Passing:**

- When passing a slower vehicle or changing lanes, signal well in advance and make sure you allow extra distance to clear the vehicle before you pull back into the lane.
- Pass on level terrain with plenty of clearance. Avoid passing on steep upgrades or downgrades.
- If necessary, downshift for improved acceleration or speed maintenance.
- When passing on narrow roads, be careful not to go onto a soft shoulder. This could cause your trailer to jackknife or go out of control.

## **Downgrades and Upgrades:**

- Downshift to assist with braking on downgrades and to add power for climbing hills.
- On long downgrades, apply brakes at intervals to keep speed in check. Never leave brakes on for extended periods of time or they may overheat.
- Some tow vehicles have specifically calibrated transmission tow-modes. Be sure to use the tow-mode recommended by the manufacturer.

## **Backing Up:**

- Put your hand at the bottom of the steering wheel. To turn left, move your hand left. To turn right, move your hand right. Back up slowly. Because mirrors cannot provide all of the visibility you may need when backing up, have someone outside at the rear of the trailer to guide you whenever possible.
- Use slight movements of the steering wheel to adjust direction. Exaggerated movements will cause greater movement of the trailer. If you have difficulty, pull forward and realign the tow vehicle and trailer and start again.

## **Parking:**

- Try to avoid parking on grades. If possible, have someone outside to guide you as you park. Once stopped, but before shifting into Park, have someone place blocks on the downhill side of the trailer wheels. Apply the parking brake, shift into Park, and then remove your foot from the brake pedal. Following this parking sequence is important to make sure your vehicle does not become locked in Park because of extra load on the transmission. For manual transmissions, apply the parking brake and then turn the vehicle off in either first or reverse gear.
- When uncoupling a trailer, place blocks at the front and rear of the trailer tires to ensure that the trailer does not roll away when the coupling is released.
- An unbalanced load may cause the tongue to suddenly rotate upward; therefore, before uncoupling, place jack stands under the rear of the trailer to prevent injury.

## PRE DEPARTURE SAFETY CHECKLIST

Before driving, make sure your vehicle maintenance and trailer maintenance are current. This is very important because towing puts additional stress on the tow vehicle. (Review the next section of the brochure for an overview of maintenance requirements.)

- Check and correct tire pressure on the tow vehicle and trailer.
- Make sure the wheel lug nuts/bolts on the tow vehicle and trailer are tightened to the correct torque.
- Be sure the hitch, coupler, draw bar, and other equipment that connect the trailer and the tow vehicle are properly secured and adjusted.
- Check that the wiring is properly connected—not touching the road, but loose enough to make turns without disconnecting or damaging the wires.
- Make sure all running lights, brake lights, turn signals, and hazard lights are working.
- Verify that the brakes on the tow vehicle and trailer are operating correctly.
- Check that all items are securely fastened on and in the trailer.
- Be sure the trailer jack, tongue support, and any attached stabilizers are raised and locked in place.
- Check load distribution to make sure the tow vehicle and trailer are properly balanced front to back and side to side.

- Check side and rear view mirrors to make sure you have good visibility.
- Check routes and restrictions on bridges and tunnels.
- Make sure you have wheel chocks and jack stands.