Towing and Driving Special Vehicles	Fact Sheet 13.2 continued Content Information

Backing a Trailer

Backing a trailer can be difficult for new trailer operators. It is best to avoid backing if possible, but sometimes backing is necessary, so drivers should learn to do it. There are two different ways to back a trailer.

1. **Backing by turning the steering wheel in the direction driver wants to turn:**

   Try this easy method to help control direction while backing up a trailer. Typically used when you can see over your shoulder through the rear window.

   - Back slowly and look directly over your shoulder through the rear window (without using your mirrors), unless you cannot see out your rear window
   - Keep your left hand at the bottom of the steering wheel, with your right arm over back of passenger seat
   - To move the trailer left, move your hand to the left
   - To back to the right, move your hand to the right
   - If the trailer starts to jackknife, which forms a V-shape between the trailer and towing vehicle, stop, pull ahead to straighten out; then begin again. Once you start to go correctly, follow the trailer around. Turning the steering wheel too far or holding the steering wheel in a turned position too long can cause the trailer and vehicle to jackknife.

2. **Backing by turning the steering wheel in the opposite direction:**

   Typically used when you cannot look directly over your shoulder. When using this method you must use the mirrors. When backing, the driver will turn the steering wheel in the opposite direction s/he wants the vehicle to go.

   - To back to the left, turn the steering wheel to the right
   - Straighten the wheel
   - Turn the wheel in the opposite direction
   - Straighten the wheel as the trailer responds to the towing vehicle's action
   - Turn the steering wheel to the right
   - Straighten the wheel and back the towing vehicle and trailer

Equipment, Connecting and Loading a Trailer Properly	Fact Sheet 13.3 continued Content Information

Connecting and Disconnecting a Trailer

The car-trailer combination must be securely connected via the hitch and coupler, with safety chains and breakaway chain (on trailers with brakes) properly attached. A good general rule is: when you begin trailer hookup, always finish the process without pausing or stopping to do something else. Otherwise, you may forget to complete the connection properly.

Ball and coupler combinations vary, but all should be tight, and checked periodically to maintain tightness. Hitch balls vary in size (1-7/8", 2" or 2-5/16") and should be mated to the same size coupler or to a coupler that fits multiple sizes.

To connect the trailer:

1. Lift the coupler onto the ball
2. Tighten hand wheel
3. Jiggle on coupler and push back on trailer, tighten hand wheel until very tight and have good connection
4. Attach safety chains by crisscrossing chains and wrapping them through the holes on the hitch, adjust slack and secure safety hooks
5. Connect the lights

Safety chains – permanently attached to the trailer tongue should be crossed beneath the coupler and connected to the hitch or to a frame member of the tow vehicle. Allow enough slack for turns but make sure the chains do not drag on the ground.

The breakaway chain will activate trailer brakes if disengagement of the trailer from the hitch or car occurs. This chain also should be hooked to a frame member or the hitch. Use slightly less slack than the safety chains.

Electrical connections should be made according to instructions so that trailer brake lights, turn indicators and other lights function properly.

Regardless of the elements of your car-trailer combination, make a step-by-step checklist to follow in properly connecting the system. This checklist can be followed—in reverse order—to disconnect the system.

Equipment, Connecting and Loading a Trailer Properly | **Fact Sheet 13.3 continued** Content Information

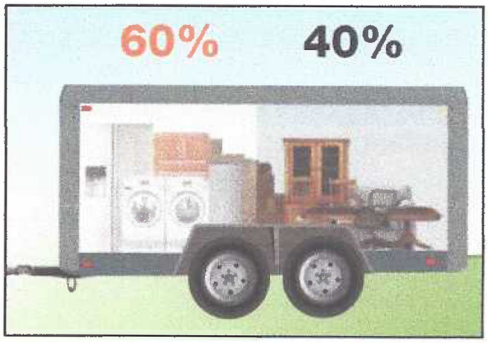
Loading a Trailer Properly

Stay under the limits

Many SUVs and cars with rear seat room for three passengers allow a total rear seat and cargo area maximum load of 650 lbs. As part of a car-trailer combination, trailer tongue weight is added to the rear of the car and adjustments may need to be made, because the allowed 650 lbs. is reduced by the value of the trailer tongue weight. As more weight is added to the rear of an already front-heavy car, the handling characteristics start to change. To minimize the amount of this handling change, drivers should minimize the amount of weight (cargo and passengers) carried in the rear area of the car. Reducing this load is best accomplished by placing the heaviest passenger to the front seat and the lighter passengers and cargo or no passengers and cargo in the rear seat and trunk of the vehicle.

Trailers should be loaded more heavily in front so that approximately 5 to 15 percent (depending on type of trailer) of their total weight is carried on the tow car hitch. Never load the vehicle beyond the owner's manual limits when towing a trailer and be sure to include trailer tongue weight as part of the load.

Load trailers heavier in front



The total weight of the load should not exceed the weight capacity of the trailer. Trailers must be loaded heavier in front or the trailer will sway violently, called whipping. Arrange 60 percent of the weight in the front half of the trailer and 40 percent in the rear. Distribute the weight equally from side to side. Keep the center of gravity low, with heavy items (including books) on the floor of the trailer, not packed on top. Keep the center of gravity forward (approximately 10 percent of the loaded trailer weight on the tow-car hitch). If your specific trailer has different loading instructions, be sure to follow those instructions.

Be sure trailer is level

Walk around to see if the tow vehicle and trailer are level after loading. The tow vehicle and trailer should be about parallel to the ground, or the tow vehicle may dip slightly in the rear due to tongue weight. Too much weight in the rear of the trailer will lift the rear of the towing vehicle and cause whipping. Too much weight in the front of the trailer will raise the towing vehicle's front end excessively.

Unit 13 Words to Know Definitions Page

Fact Sheet 13.4
Content Information

Coupler – connecting device mounted at the front of the trailer tongue that connects directly to the hitch ball on the car

Down time – the period between one and five p.m., when drivers should plan to take a break when driving

Highway hypnosis – when the driver becomes hypnotized by constant staring ahead on the roadway, which may result in driving in a dulled, drowsy or trancelike condition, usually occurs when driving on rural expressways with little traffic and high speeds for long periods of time

Hitch ball – ball shaped part of the hitch, which connects to the coupler

Increased following distance – when driving large vehicles or towing a trailer drivers should increase their following distance one second for each additional 10 feet beyond 15 feet of overall vehicle and trailer length

Jackknife – forms a V-shape between the trailer and towing vehicle and may occur when backing a trailer

Large vehicle considerations – the effects of the driver's ability to accelerate, turn and slow down when driving large vehicles or towing a trailer

Navigation system – electronic device to help with directions while driving, which can be useful if the driver takes precautions to prevent driver distractions

Safety chains – one end attaches permanently to the trailer tongue, the other end attaches to the car's hitch, which keeps a connection should the trailer detach

Tongue – part of the trailer which extends forward from the trailer body and includes the coupler

Towing – the process of pulling a trailer with a chain, line, bar or some other form of couplings

Trailer hitch – a device, mounted on the rear of the vehicle, attaches a trailer to the tow vehicle, and is the point of connection between the tow vehicle and trailer

