



Thank you for volunteering to be a trailer driver for Westfield Competitive Rowing, Inc. (WCRI)! Westfield Crew requires all drivers to be in compliance with WCRI and US Rowing sanctioned procedures & documentation requirements before operating a trailer.

This manual contains the minimum information needed to operate a WCI trailer—this is not an exhaustive list or manual. Keep your own safety and the safety of others in mind.

Towing Your Trailer Safely

Perform a safety inspection before each trip. Make sure that:

- The pin securing the ball mount to the receiver is intact.
- The hitch coupler is secured.
- Spring bar hinges are tight with the safety clips in place (load equalizer or weight distributing hitches).
- Safety chains are properly attached.
- The electrical plug is properly installed.
- Brake Lights, turn signals & License plate light are operational

The tow vehicle must be a proper match for the trailer. If the trailer is properly equipped, it can perform safely under a variety of driving conditions. The tow vehicle should also have enough performance to climb mountain grades without excessive loss of speed. Here are three basic types of trailers:

1. Conventional travel trailers (includes folding camping trailers).
2. Fifth-wheel trailers.
3. Motorcycle, tent, and cargo trailers.

The major difference between the three types of trailers is the way they are hitched.

Conventional Trailers

The ball and coupler hitch is used on a wide variety of tow vehicle and trailer combinations. This hitch consists simply of a ball attached to the rear of the tow vehicle and a coupler (socket) at the tip of a tongue or A-frame attached to the front of the trailer. This hitch is commonly used on recreational trailers.

A load distributing hitch is used for heavier models such as utility trailers, boat trailers, and travel trailers. These load distributing hitches use special equipment to distribute the tongue load to all axles of the tow vehicle and trailer to help stabilize the tow vehicle. Here are some terms you should know when discussing hitch adjustment and in evaluating hitch performance:



- **Receiver:** Hitch platform fitted to the tow vehicle.
- **Ball Mount:** A removable steel component that fits into the receiver. The hitch ball and spring bars (only on load distributing hitches) are attached to it.
- **Sway Control:** A device designed to lessen the pivoting motion between tow vehicle and trailer when a balltype hitch is used.
- **Coupler:** The ball socket at the front of the trailer A-frame that receives the hitch ball.
- **Spring Bars:** Load-leveling bars used to distribute hitch weight among all axles of tow vehicle and trailer in a load distributing ball-type hitch.

Balance

Before you tow a trailer, evaluate trailer weight distribution. Hitch weights for travel trailers should typically be at least 10 percent of the trailer's gross weight for acceptable handling. In some cases it can go to 15 percent or higher. Hitch weight for larger trailers is limited by the capacities of tow vehicles and hitches. The strongest load-distributing hitch is rated for a maximum hitch weight of 1200 pounds. Most passenger car suspensions cannot handle that much weight and the trailer should be towed with a pickup truck or van. Improper weight distribution can cause the trailer to fishtail (sway back and forth across the lane).

Hitch Adjustment

If your hitch weight is less than 10 percent of the gross trailer weight, you can compensate for some of this by loading heavy supplies such as tools and canned goods as far forward as possible. If your trailer's water tank is behind the axle(s), travel with as little water in the tank as possible to reduce weight in the rear. Trailers with water tanks located in front usually handle best when the tanks are full, because the water adds to hitch weight.

Be sure that the spring bars of the load distributing hitch are rated high enough to handle the hitch weight of your trailer, plus a safety margin of at least 10 percent. Check for adequate rear suspension of the tow vehicle. This means that the vehicle sits relatively level prior to hitching the trailer.

Load-distributing hitches are designed to distribute the hitch weight relatively evenly to all axles of the tow vehicle and trailer. The tow vehicle and trailer should be in a level position (attitude) in order for the hitch to do its job properly. Here is how to check:

1. With the tow vehicle loaded for a trip, measure the distance between the vehicle and the ground at reference points, which you can establish, in front and rear. Keep the figures handy for later use.



2. Hitch the trailer and adjust the tension on the spring bars so the tow vehicle remains at roughly the same attitude (i.e., if the rear drops an inch after hitching, the front should also drop an inch).
3. Inspect the trailer to be sure it is level. If not, hitch ball height should be raised or lowered, as necessary. You may need spring bars rated for more weight if you cannot keep the tow vehicle from sagging in the rear.

Safety chains are required for travel trailers. Safety chains are not required for fifth-wheel trailers. The purpose of safety chains is to prevent the trailer from separating from the tow vehicle in event of hitch failure such as a hitch ball that has loosened. The chains should be crossed in an "X" fashion below the ball mount, with enough slack that they do not restrict turning or allow the coupler to hit the ground.

Breakaway switches are also required for any trailer having a gross weight of 1500 lbs. or more and manufactured after December 31, 1955. They are designed to activate trailer brakes if the tow vehicle becomes separated from the trailer. One end of the breakaway switch is attached to an electrical switch on the trailer frame and the other end is looped around a stationary hitch component on the tow vehicle. If the two vehicles become separated, the cable pulls a pin inside the breakaway switch and applies full power from the trailer battery to the trailer brakes.

Even though hitch component failure is rare, the breakaway switch and the safety chains must be in good working order.

The tongue length on the trailer is generally twice the trailer wheel width but no more than six feet from the axle to the end of the tongue. Good design will allow for good sway control. If the tongue is too short, the trailer will sway. If too long, the trailer will be sluggish and cut corners when turning.

Sway Control

You should have good trailer handling if the weight and hitch adjustments are correct. However, the coupling between a tow vehicle and trailer should also prevent side to side motion for best possible towing comfort and safety. If you detect sway in your trailer, stop and check to see if the load has shifted. Check for suspension problems and make sure the tires and wheels are secure and inflated properly. Be sure the trailer hitch is secure. A small reduction in tire air pressure or a slight increase in tongue weight may help. A sway control device should be included when the hitch is installed. This device helps give the tow vehicle and trailer a "one-vehicle" feel. There are two basic types of sway control systems available:

- Friction bar—slides in and out and is activated by the motion of the vehicles. When you brake or turn, the trailer weight compresses the bar which then compresses the trailer against the tow vehicle.



- Dual cam sway control—usually works better for large trailers with heavy tongue weights. The cam action is applied to the spring of the trailer to reduce sway and shifts the weight forward. It also adjusts weight shifts which allows the trailer to follow the tow vehicle.

Trailer Lights

Trailers are required to have reflectors, tail lights, brake, and license plate lights. Also, signal lights are required if the tow vehicle lights are hidden. Trailers over 80 inches wide must have clearance lights. Most manufacturers comply with these requirements, however, it is up to you to be sure that all lights operate correctly.

Trailer Brakes

Brakes are required on any trailer coach or camp trailer having a gross weight of 1500 lbs. or more. Usually the braking capacity on tow vehicles is good, however, it may not be good enough to safely stop the several hundred to several thousand additional pounds that your trailer weighs. Most conventional and fifth-wheel trailers have electric brakes, activated by a controller in the tow vehicle. The controller automatically coordinates the tow vehicle and trailer braking so the two systems work together when the brake pedal is applied.

The controller can also be helpful in stabilizing a trailer that sways because of bad road conditions. Manually applying the trailer brakes by using the hand lever on the controller will restabilize a trailer that is likely to sway.

Folding camping trailers and boat trailers are usually fitted with surge brake systems which operate separately from the tow vehicle's brakes. Surge brakes are applied by a mechanism attached to the receiver/ball connection. As the tow vehicle slows, the forward motion of the trailer compresses the mechanism which in turn applies the trailer brakes.

Trailer Backing

Backing a trailer can be frustrating for inexperienced owners. The most important item to remember is that the trailer will go in the opposite direction of the tow vehicle. It is helpful to have another person help you back the trailer.

Here are two methods for backing trailers:

1. Turn the vehicle's wheels to the right to make the trailer go left, and vice versa.
2. Put your hand at the bottom of the steering wheel. The trailer will go in the same direction your hand moves (moving your hand to the right will cause the trailer to go right, and vice versa).



Westfield Competitive Rowing, Inc.

Westfield Crew Trailer Operator Procedure

Sharp steering wheel corrections will cause the trailer to jackknife and may cause damage to the rear of the tow vehicle or the front of the trailer.

Conclusion

A good understanding of trailer safety and lots of driving practice will help you operate your vehicle with greater confidence and enjoyment.

Be safe and enjoy your travels.