



TRANSPORTATION

TALES OF TERROR:

How to avoid trailer-towing disasters

Story by Dave Luebben
Illustrations by Sherline Products, Inc.

Recently, traveling up a mountain on an interstate highway, I came upon the barely recognizable remains of a loaded trailer. It had come disconnected from its hitch, jumped a guardrail and been smashed to smithereens.

Engineers from manufacturing companies tell chilling stories of trailer owners' mishaps and dangerous practices. Consider trailers so overloaded that tires are squeezed half flat and trailer tongues bend under the weight. Shimmying trailers fishtail down the highway with their tires squalling in agony, while trailers with their aloof noses pointed 15 degrees up in the air can't make proper contact with their too-high hitches. And black trailers with no running lights loom ahead in the night as frightfully as Darth Vader.

Many circuit artists tow trailers, ranging from small two-wheelers to huge, fifth-wheel gooseneck versions. On the surface, it seems simple enough: Find a trailer that doesn't appear too large for your towing vehicle, attach it with a decent trailer hitch and drive happily off into the sunset. But in reality, this scenario is loaded with insidiously deceptive perils. Or, in plain English, you'll live to regret it — if you're lucky.

Conversation overheard between two trailer owners

"I may have a torque problem."

"Engine?"

"No, lug nuts. Found loose ones when the sway started."

"You check weights?"

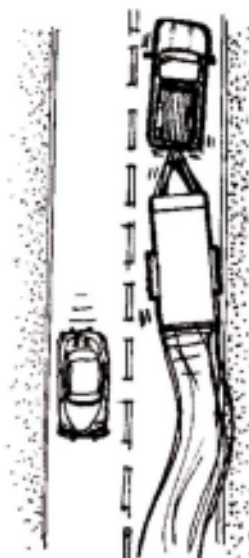
"No, I have a weight-distributing hitch."

"Still ought to check tongue weight and gross combined weight. Are your trailer brakes surge or electric?"

"Electric with a new breakaway switch. Got it when I had the transmission cooler installed."

Does this all make sense to you? If not, you might need more information before charging down the road pulling a trailer — even if you have done it before. It gets complicated in a hurry, and the limited space of this article only permits hitting the high spots. But the Web sites mentioned in this story and in the accompanying list will point you in the right direction.

Logically, you could start with a knowledgeable professional in the field, perhaps someone at a qualified trailer dealer. But if that



Swaying results from any number of loading, rigging and driving mistakes. Very serious, it easily can put your tow vehicle into a wild, out-of-control slither across both lanes and beyond. If it starts to occur, slow down immediately. Then get off the road as soon as possible to determine the cause and correct the problem.

person knows his or her stuff, you are likely to become mired in jargon. So learn some terminology first. Let's start with a few key definitions related to some weighty subjects.

Base curb weight: A vehicle's weight, including a full fuel tank and its standard equipment.

Cargo weight: The weight of a vehicle's passengers and cargo (doesn't include the base curb weight).

Payload: A vehicle's allowable weight of cargo and passengers.

Gross vehicle weight (GVW)*: The base curb weight plus the cargo weight.

Gross axle weight (GAW)*: The total weight placed on an axle on the vehicle or trailer.

Gross combined weight (GCW)*: The weight of the loaded tow vehicle plus the weight of the loaded trailer.

Tongue weight*: The amount of the trailer's weight transferred to a tow vehicle through the trailer tongue or gooseneck.

Breakaway Switch: A device that automatically applies electric brakes if the trailer suddenly separates from the towing vehicle.

* Vehicles and/or trailers are rated. For example, GVWR stands for Gross Vehicle Weight Rating. These ratings are found on the vehicle or trailer and should never be exceeded.

Gross Trailer Weight Classifications	
Classification	Maximum Weight in Pounds
Class I	Up to 2,000 pounds
Class II	2,000-3,500 pounds
Class III	3,500-5,000 pounds
Class IV	5,000-8,000 pounds
Class V	8,000-10,000 pounds
Gross Trailer Weight (GTW) includes	

But cargo weight and space are not the only factors. How this weight relates to and affects the towing vehicle and other components is also important. All the weight definitions listed above come into play, and each part of your system has maximum ratings. So axle weight affects the tires, and the trailer's total loaded weight has a bearing upon both the hitch's towing capacity and the maximum tongue weight. That in turn has a critical relationship to the towing capacity of the ball. "The leg bone's connected to the knee bone," and on and on.

For more information, try the trailer loading and towing guide, available free as a PDF download from Sherline Products, Inc., www.sherline.com/lmbook1.pdf. (The URL is case sensitive, and the final character before the PDF is the numeral 1.) Sherline manufactures scales for determining tongue weight (usually 10 to 15 percent of gross trailer weight), another critically important factor as you attempt to wed the trailer to the towing vehicle. But the guide goes far beyond that and is a comprehensive reference to most important issues involved with trailer towing.

One way to evaluate quality when purchasing a trailer is to look for the following National Association of Trailer Manufacturers (NATM) decal. The association works to improve the trailer industry through the promotion of compliance with federal regulations and selected industry standards.

Think twice before you get hitched

No, it isn't only about picking out a trailer hitch. There is a vital and inseparable relationship between the trailer and the towing vehicle, as well as the gear required to marry them. Let's look at trailers first.

Besides the capability of the towing vehicle, two factors influence trailer size. What is its capacity in cubic feet and how much weight will it hold? Just because a trailer accepts your cargo's bulk doesn't mean it will carry the tonnage of all that stuff. One trailer manufacturer reported that a customer complained his trailer was only half full when the tongue bent and the tires flattened. It seems the weighty cargo totaled 13,000 pounds in a trailer rated for 3,000 pounds. Undoubtedly, the load was only slightly more dense and thick than the trailer owner's head.

Following is a table showing classifications of trailers by Gross Trailer Weight (GTW). This measurement not only provides a maximum weight for trailer and load, but also is used to rate hitches. These standard classifications are used by both trailer and vehicle manufacturers to assist in your matchmaking.

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Give me a brake

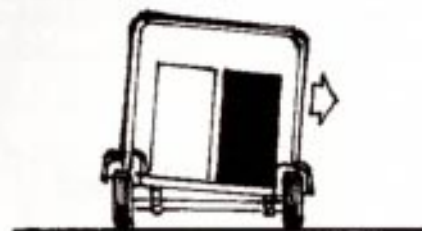
Every state sings its own song about brakes, with some requiring brakes on trailers over 3,000 pounds and others beginning at 1,000. So you need to check legal requirements with the Department of Motor Vehicles in each state that you plan to travel through.

Electric brakes are commonly used for utility trailers but not on boat trailers, as they are subject to water damage and corrosion. Instead, hydraulic surge brakes are typical. In both cases, federal law dictates that any trailer requiring a brake system must also have a breakaway system to activate brakes if the trailer separates from its towing vehicle.

Can you pull your weight?

Smaller cars can pull light-weight trailers. But as you near 2,000 pounds, only full-sized cars like the rear-wheeled Ford Crown

Victoria or Mercury Marquis should be considered. Larger trailers require a large truck or SUV. Other factors, such as engine size, transmission, brakes and rear-axle gear ratios, are also important. Dealers can order vehicles with special towing packages that include upgraded radiators, transmissions, batteries and other custom items, such as weight-distributing trailer hitches.



Leaning due to uneven loading of heavy items can cause fishtailing and create handling problems during turns.

Manufacturers assign vehicle-towing capacities. Two information sources are www.trailerlife.com/output.cfm?id=42175 and www.campinglife.com/towrating. Study these and other recommended sites to determine which vehicle-trailer combination is right for you.

On the road

Obviously, the trailer's additional weight and wind resistance significantly reduce miles per gallon. In addition to safety, that is a great reason to reduce your normal speed. At today's gas and diesel prices, the savings really add up.

Unless you have done it before, driving with a trailer can be a challenge, so you might want to practice some before you set out two hours late to your next show. This is particularly true when it comes to backing up your rig. The first time you try, it can be as awkward as the old routine of patting your head and rubbing

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In addition to causing swaying, a 30-mph crosswind can blow you off the road.

your stomach. Everything is backwards. If you want the trailer to go to the left, turn the steering wheel to the right.

There is a trick that works every time. Ignore the driving instructor's rule about hands at 10 o'clock and 2 o'clock on the steering wheel. Slide 'em right on down to 8 and 4, and grab the wheel inside. That automatically reverses things, and you can cast a glance over your shoulder and turn the wheel in the direction you want the trailer to go. Tricky, huh?

Stay safe

Face it, when you tow a trailer, you are really operating two vehicles at once. So it follows that generally about twice as much can go wrong. Inversely, it isn't a bad idea to allow twice as much stopping distance and cut your speed considerably. The proper loading, balancing and securing of cargo is also critical for safety. And pay attention to the preparation of both the trailer and tow vehicle, and have them regularly inspected by a professional.

On a just-completed 2,200-mile road trip, I made an informal survey and noted that 46 percent of all trailers observed were committing one or more dangerous infractions. The most common was failure to crisscross safety chains. Non-level hitch connections, overloads, uneven loads, shimmying and lack of rear lights were also prevalent.

Be careful out there! ☺

Additional Web sites

www.natm.com (National Association of Trailer Manufacturers)

www.edmunds.com (an authoritative source of automobile information)

www.toyotaworld.com/accessories/towing_options.htm (Toyota towing options)

www.fordvehicles.com/towing/popup.asp (Ford Motor Company interactive towing guide)

www.gmfleet.com/gmfleetjsp/share/commTruckGuide/Towing-Trailer.pdf (General Motors towing and trailer guide)

www.lake-link.com/dodge/trucktips/tip.cfm?TruckTipID=5 (Dodge towing checklist)

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