

Who Can Answer My Heavy-Haul Questions?

A Collection of Answers to Common Queries

By Troy Geisler, vice president of sales and marketing, Talbert Manufacturing

To an outsider, hauling might seem straightforward, and some might even say easy. Operators, fleet managers, dealers and manufacturers know better.

Hauling is a complicated process. Operators must consider the specifications of the intended load, road conditions in their operating area, and a variety of other factors up to and including which trailer will provide optimum safety and productivity. To maximize efficiency and minimize costs, operators rely on manufacturers and dealers to help identify the right trailer to fit their unique hauling needs — one with the capacity and features to legally and safely transport the intended load.

Working with these companies gives end users access to a wealth of knowledge, experience and industry expertise. Though, as an operator, it might not be easy to know where to start. For the experts, the answer is easy — always start with the load.

To help get the wheels turning, here are some thoughts from industry leaders on a few of heavy-haul's common questions.

How Does Capacity Factor In?

In a perfect world, a 55-ton trailer would be capable of hauling any 55-ton load. However, any veteran operator will tell you that's just not the case. There's a long list of factors that determine the capacity of a specific trailer.

To select the safest and most effective trailer for the project, dealers and manufacturers will ask a lot of questions — some might even have a detailed checklist that covers specific equipment measurements and optional features, all the way down to the desired spacing and quantity of d-rings. Knowing the answers to some of the broader questions ahead of time speeds up the sizing process and will result in a trailer that safely meets the requirements of every intended job.

When operators approach a dealer or manufacturer about a trailer, they usually have a specific haul in mind. However, unless it is meant to be a dedicated trailer, it is important to consider any and all loads the trailer might haul. A 55-ton trailer can be used for a 35-ton haul, but the light load might mean it has a higher deck height than when it is fully loaded. Having the weight and dimensions of the largest intended load is vital, but it is also important to consider the specs of any mixed loads, backhauls or other pieces of equipment that the trailer might haul.

Dealers and manufacturers will also want to know if there are any unique requirements, such as equipment that requires special reinforcements or has a low clearance that might interfere with loading.

There are five key components calculated in a trailer's capacity rating — size and weight of construction materials, the overall weight the trailer can carry, the area of deck that weight can safely be carried in, optimal travel speed and the safety factor. Working with a top-tier manufacturer often provides the best capacity rating, but operators should be aware of how each manufacturer determines their capacity rating because there is no industry-set or government-mandated system in place.

Load concentration is a key area of difference between industry leaders and other manufacturers. It's not enough to know a 55-ton lowbed can carry 55 tons. Informed operators also know just how much of the deck can handle that weight based on the manufacturer's capacity rating. While some trailers will need the entire deck length to haul 55 tons safely, a trailer from another manufacturer might only need half the deck length for the same weight. Having a trailer rated in half deck capacity gives operators a more realistic indication of what the trailer will be able to handle safely and without structural failure. These manufacturers usually design with a two-point rigid load base that accounts for the tire spacing — or hot spots — of large equipment and heavy machinery. This makes trailers with a half-deck rating more versatile and efficient for these loads.

Load concentration is the most evident differentiation, but speed and overall safety ratings also put industry-leading manufacturers in a class above. Trailers from these manufacturers might be rated at 65 mph rather than 55. They might also offer a 2.5 to 1 safety factor, well above the minimum 1.8 to 1 ratio that leaves no cushion for adverse road conditions.

There is no one size fits all when it comes to trailers. For safety and dependability, partnering with a trusted dealer and top-tier manufacturer ensures operators are outfitted with the trailer that meets their individual requirements. In some cases, that might mean a custom design. Not all manufacturers provide this service, but some industry-leading companies will design and build a customized trailer that maximizes safety, durability and resale value.

What Specialty Features are Important?

When looking at the price tags, it's common for operators to ask what added value makes a top-tier manufacturer's trailer worth the cost over other models. Depending on the intended use, certain specialty features, like a hydraulic beaver tail or in-deck winch, may be unnecessary. Others are vital for safety, durability and productivity.

When evaluating the added value of specialty features, start with the basic materials. Industry-leading manufacturers use high-quality materials like steel with 100,000 psi minimum yield, which allows the most capacity with the smallest impact on trailer weight. They also use apitong decking to provide the toughest, longest-lasting decks. Tightly woven and incredibly dense, this South Asian wood is less susceptible to chipping and cracking and provides more traction than metal. These features come with a higher price tag, but quickly pay for themselves in increased efficiency and durability.

Other design features might be less obvious in the dealer lot but make a clear difference with the first load. Perhaps the most misunderstood of these is camber. Camber is the term used to describe the arc that forms in the center of a well-designed trailer. It helps prevent excessive deflection in the main beams. When properly loaded to capacity, the arc will flatten, resulting in the trailer's loaded deck height. A top-tier manufacturer can adjust camber in custom designs to meet the operator's specific needs, but in general, a trailer that presents a slight upward arc in the center has positive camber which will flatten with a full load.

In addition to high-quality materials and special in-trailer design features, trusted manufacturers might also have a catalog of optional add-ons that allow operators to maximize their capacity and potential. For example, some offer deck extensions made from the same quality materials for a perfect fit. Nitrogen dampened axle extensions with a self-tracking pivot design that allows for consistent load transfer even over uneven terrain might be another desirable option.

When is a Permit Required?

Permits are another area of heavy-haul that can cause frustration for operators. Dealers and manufacturers are constantly bombarded with questions like, "What permits do I need to haul X through states Y and Z?"

Unfortunately, there is no easy answer. In the U.S., generally, a legal load is no more than 8 feet, 6 inches wide; 13 feet, 6 inches tall; 48 feet long; and no more than 80,000 pounds gross weight (including truck, trailer and payload). If a load exceeds in one of these areas, it may require a permit.

But this doesn't take into account axle weight or other regulations that may vary from state to state. As with capacity rating, there is no nationwide standard for permits. Anything above 80,000 pounds comes under the state jurisdiction, and each state has its own set of rules based on infrastructure, legislation and other regional factors.

Kingpin laws are another good example of regulations that change from state to state. Most states along the East Coast have laws that limit the length to 41 feet from the kingpin to the center of the tandem axle or 43 feet to the center of the rear axle on a trailer exceeding 48 feet. There is no specified length for states in the center of the country. California has the strictest kingpin laws. It requires a permit for anything over 40 feet. So, if an operator were to travel from Texas to New York or Oregon to California, they would need to make sure they had permits for every state in which the trailer would be considered oversized.

That's why the intended area of operation is almost as important as capacity when selecting a trailer. Dealers, manufacturers and industry associations, such as the Specialized Carrier and Rigging Association (SCRA), have a wealth of information on this subject that they are willing to share with operators and managers, but operators

are encouraged to submit a configuration to states they plan to operate in to ensure proper permitting.

Permits can be quite the quagmire, so, in addition to offering their expertise, manufacturers are doing their best to work with end users to design trailers that limit the need for extra permits, all the while adapting to ever changing equipment. Telescopic trailers, — trailers with dual kingpin settings that can be operated empty without a permit in states with a 43-foot kingpin law — as well as flip up and removable axle attachments are just a few examples of versatile designs from leading manufacturers.

Even these versatile options can still require permits. Operators are encouraged to work closely with the DOT in every state they operate in to ensure each load is properly permitted.

What is Overloaded?

Safety is a core value of many of heavy-haul's top-tier manufacturers. That is why they work with dealers, managers and operators to find the right trailer. It's why they hold themselves to a higher standard with capacity ratings. And it's why they do their best to help operators determine what permits might be required for an oversize load. Top-tier manufacturers are concerned with the safety of operators, equipment and the payload, but also those sharing the road. For that reason, they highly discourage overloads. A single overload might not cause the trailer to fail, but it reduces the manufacturer's safety factors and puts unnecessary stress on the trailer components, putting it at risk of future failure.

It is also inadvisable to add aftermarket elements to a trailer to try to increase capacity. Trailers are designed for certain setups, reinforced where they need to be. Adding more axles, a spreader bar, a jeep or any other element to a trailer that it was not designed for does increase the span but does not add capacity to that trailer. In some cases, it will reduce the load rating of the trailer. If not designed for the trailer, adding aftermarket pieces can create stress and lead to failure.

While simply adding axles and extenders cannot increase the capacity of a trailer, that type of versatility can sometimes be designed in. Certain top-tier manufacturers are capable of designing trailers that have a rating such as 55 tons in a spread axle setting then can increase to 60 ton with a close-coupled one.

To help operators navigate variable axle weight regulations without making risky aftermarket modifications, manufacturers have also developed trailers that are East Coast or West Coast specific. These trailers are designed to use variable axle and booster configurations that make it easier for end users to haul safely and legally in different regions.

Another safety concern dealers and manufacturers often hear about is the misuse of outriggers. Outriggers, also called swinging side brackets or extension brackets, can extend the useful width of a deck by up to a foot on each side. This makes the load

oversize, and it will require a permit. It also requires proper loading to ensure safety. At least half of a machine's tire, track or grouser should be on the main body of the trailer. Any less and the outriggers are considered overloaded, putting the whole load in jeopardy.

Who Can Help Answer My Questions?

In the world of heavy-haul there are easy questions, like, "Is it safe to travel with the flip axle down?" Yes, but there's a good chance it will put the load over length and require a permit. Or, "What is the difference between spread axle and close coupled?" This has to do with how an additional axle is attached. The additional axle is attached to the rear only on a close coupled model. Spread axle configurations allow for more versatility; with a nitro booster, operators can add as many additional axles as the trailer is designed for. The presence of pin tubes is another indication, as pin tubes are required and reinforced for split axle configurations only.

Then there are those difficult questions that require more thought, like, "How much can a 55-ton trailer haul?" To which a reputable dealer or manufacturer might reply, "Let's start with what needs to be hauled and where it's going and build up from there."

In an industry where so much is riding on what operators choose to run between the road and the load, taking the time to work through the easy and the difficult questions with experienced dealers and manufacturers ensures everyone's safety and the trailer's dependability and longevity as drivers hit the highway.

About the Author

Troy Geisler is the vice president of sales and marketing for Talbert Manufacturing. He has more than 15 years of experience in trailer sales, including more than five years with Talbert. Troy earned his bachelor's degree from Purdue University in West Lafayette, Indiana.