TRAILER AXLES

PROBLEM: I purchased a 1964 Gobetrotter 19' recently. Wanting to check out brakes and shocks, I jacked the trailer up and was surprised to see that the tire was barely removable between the fender and the brake shoe. The tires turned out to be 225X75-15 Marathons rated at max load of 2500 pounds each. I think that they are bigger than the original 7.00-15 tires. The trailer is spec'd at about 2900 lbs. dry. So it appears that the tires are somewhat oversized.

One of the reasons the tires were hard to remove is that the axle swing arms were hanging below the axle at about 10 degrees. I thought I might install air shocks to replace the originals, but was surprised to see that the swing arms could not be moved at all, even with a pry bar. It appears that the rubber has set up in the one position.

Is there any way to free up those swing arms? For example, would heating the axle with a blow torch soften the rubber inside or is that a waste of time. If I can't get them to move, the air shocks will be of no use. Ultimately, I'm thinking a new axle might be in order. If possible, I would like to hold off on that investment.

Since the tires are oversized, could I pick up some cushioning by lowering the tire pressure from 60 psi to say 50 psi?

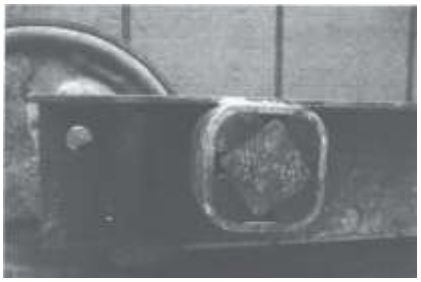
Thanks Larry

ANSWER: Let me start with tires, then I'll get to the axle issues. The proper size tire is ST225/75R15. I run them on a 1967 Globe Trotter and Trade Wind, both with new axles. The tire pressure can be reduced below maximum. A 1964 Globe Trotter, in Denver, weighs 3500 pounds fully loaded. That is 1750 pounds per tire. Running 45 PSI will give a 15% margin to allow for unequal weight distribution. Note, maximum pressure in a C rated tire is 50 PSI, and 65 in a D.

PSI	30	35	40	45	50	55	60	65
Load, #	1600	1760	1880	2020	2150 (C)	2270	2380	2540 (D)

Monitor both the tire pressure and temperature. Check the temperature of the tires with an infrared gauge (inexpensive at the Shack). Mine run between 102 and 112 degrees F on the shady side and hotter on the sunny side. A change from typical will tell you something is wrong. Check inflation pressure when tires are cold.

Now about axles, over time the rubber in the axle loses its flexibility and becomes ridged. You cannot fix it by heating the axle. Heating will damage the rubber when new, it won't fix it when old. The inner square shaft shown in Figure 1, of a cut off axle, rotates with the swing arm by compressing the four rubber rods. The rubber rods in an old axle cannot be compressed. By the way, axle rating in pounds is increased at the factory by increasing the length of the rods, which applies more force against compressing.



How do you know if your axle needs to be replaced? Here are the common symptoms:

Swing arm is horizontal and won't drop down more than an inch at the spindle if the is trailer is jacked up.

Rivets pop loose inside, or seams open in and around cabinets.

Hangers and clothes bounce off rods.

Age of trailer axle:

Over 25 years old, think about a new axle.

Over 30 years old, can you justify not replacing the axle? Over 40 years, replace the axle.

Club News

One last point, small trailers (Caravels, Bambi, and others) in the early sixties had five lug wheels and a smaller wheel spindle. They have broken as seen in Figure 2. Don't take the risk. Replace the axle if it has a five lug wheel.

Guidelines above are based on my experience and that of Luke Bernander, #11965 (970222-4065). Luke has replaced many axles in Colorado, and knows the details of ordering.

When ordering an axle, weigh your trailer. For dry weight, add 500 pounds to a short trailer to get loaded weight, or 1000 pounds to a medium length. Increase the loaded weight by 15% to get maximum axle rating. If you overrate an axle too much, the suspension will be too stiff. Modern axles have many options including: swing arm down angle, mounting to raise the trailer, shock absorber brackets, self-adjusting brakes, and others. Be sure you understand the options, and most importantly, the critical dimensions, see Figure 3.

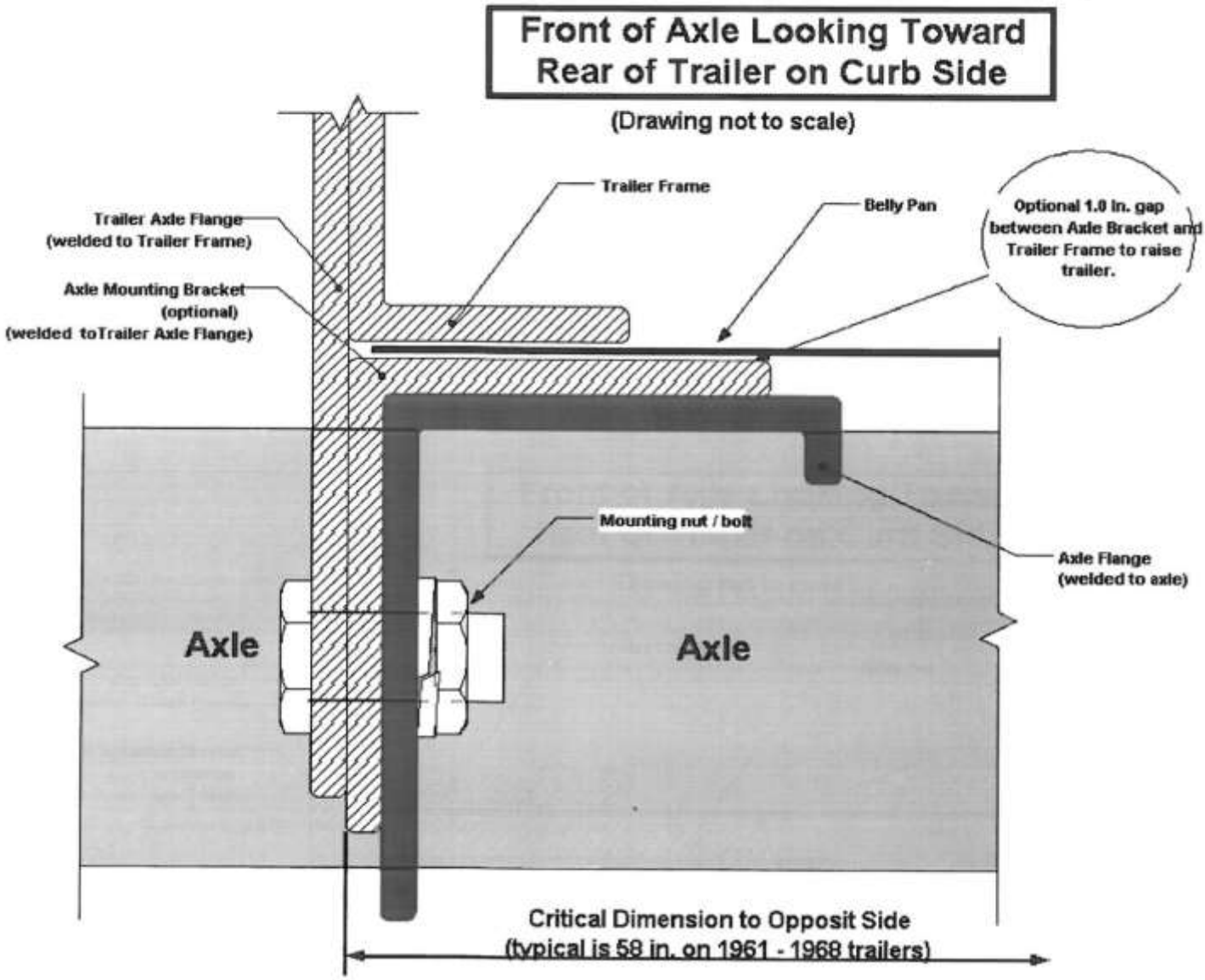

Front of Axle Looking Toward
Rear of Trailer on Curb Side
(Drawing not to scale)
Trailer Frame
Belly Pan
Optional 1.0 in. gap between Axle Bracket and Trailer Frame to raise trailer.
Trailer Axle Flange (welded to Trailer Frame)
Axle Mounting Bracket (optional) (welded toTrailer Axle Flange)
Mounting nut / bolt
Axle Flange (welded to axle)
Axle
Axle
Critical Dimension to Opposit Side
(typical is 58 in. on 1961 - 1968 trailers)

Figure 3