At the Intersection

Axles, Engines, EPA, and the Motorhome Chassis

by Byron Songer

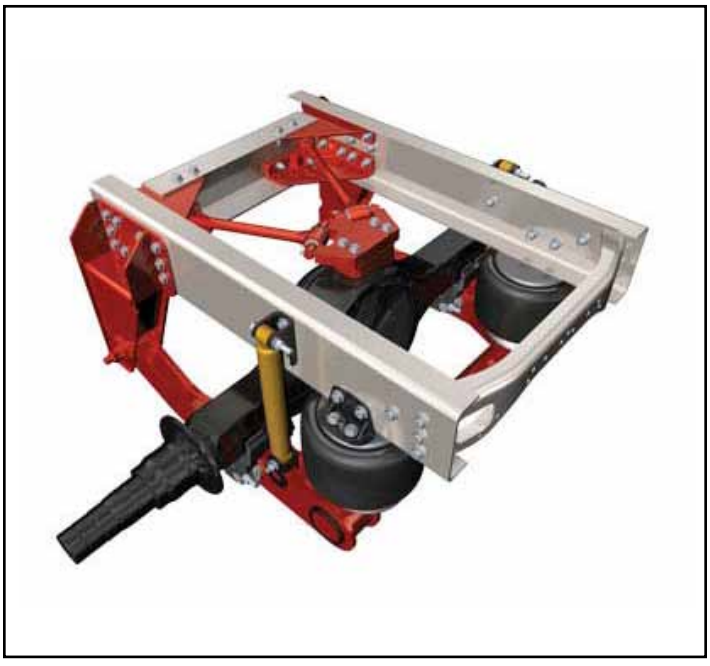
Do you remember when a 40-foot motorhome with 300 HP diesel engine on a single rear axle chassis seemed to move down the road with ease? In recent years all manufacturers have bumped engine sizes and gone to tag axles with a resulting loss of storage space on the same 40 feet of length. What happened? In this brief article an attempt will be made to answer that question while putting things in perspective.

About eight years ago the average average diesel pusher was as outlined above, about 40 feet in length. While the EPA's decades-long effort to reduce criteria pollutants, air toxics and other harmful emissions from diesel fuel used in transportation has resulted in significant health and environmental benefits, it had an impact on how Class A builders approached the situation. This resulted in an industry-wide change in motorhome design.

Today's diesels utilize Selective Catalytic Reduction (SCR), an advanced active emissions control technology, to reduce oxides of nitrogen (NOx) in diesel emmissions. This technology uses an automotive-grade urea, otherwise known as Diesel Exhaust Fluid (DEF), which must be carried in a separate tank. The technology also calls for other hardware components to work effectively. This has the effect of adding weight to the coach. However, to maintain the same performance levels as earlier generatinss of non-SCR engines, the size and net horsepower rating of the engine increased by nearly a factor of 35%. Of course, a larger engine means more weight. This increase in weight calls for the addition of a tag axle to handle the total weight situation since exceeding the ratings of the single axle design in use for generations. Gone was the 40-foot coach with a single axle.

While a tag axle makes for a smoother ride with greater inline stability, adding a tag to a 40-foot chassis means taking out storage bays in addition to the need to maintain eight tires instead of six. This increased total cost of ownership, a concern for the wise buyer.

To address a growing customer situation, Freightliner Custom Chassis Corporation went to work on developing a rear axle that could handle the increased weight demand with the result of allowing manufacturers to go back to a single rear axle. Along the way they also worked on controlling sway and ride concerns. The first-ever single axle suspension rated at 24,000 pounds, FCCC has given it the trade name of V-Ride. It is designed for luxury motorhome owners who want the ability to carry more gear, the freedom to equip their interiors with premium amenities, and an enhanced driving experience while reducing the number of tires on the road for the average, 40-foot diesel pusher. Another benefit of the axle design is increased towing capacity. Will Spartan respond with a simalar development? Hang on to see. Visit www.fcccrv.com for more information.



Freigheliner's V-ride suspension provides larger carrying capacity. Motorhome builders may use it for single-axle units or in combination with a tag or passive steering tag system.

https://www.fcccrv.com/chassis/xc/rear-suspension/#v-ride-rear-suspension-system