

# SPANNERMAN ANSWERS YOUR QUESTIONS

## BRAKE FADE

I have recently experienced serious brake fade on my 1989 Ford E-350 type C motorhome which caused very white knuckles at the time.

I had the front brake calipers (including caliper pins) and brake discs replaced. In addition, I had the front wheel bearings repacked (the grease was black, but the bearings were okay).

The brake system on my coach is a 'split' hydraulic system; that is, two separate brake circuits feed off the master cylinder, ostensibly for the purpose of providing some braking if a failure occurs in either the front or the rear brake hydraulics. When I had my encounter with sudden brake loss, the brake pedal went straight to the floor. I let up and stabbed the pedal again, and it went back to the floor. I admit that I did not 'pump' the brakes, since at the time I was more interested in stopping the coach by any means at hand. I geared down the transmission from 'drive' to 'second' and then, after slowing somewhat, from 'second' to 'first'. At the same time I was gearing down, I was exerting all the force I could on the parking brake pedal. Between these two actions, I was able to bring the coach to a safe stop.

What neither I nor my mechanic understands is why the over-center piston in the dual braking system did not shift and light the brake light on the dashboard? A second question is why I didn't have some brake pedal by which I could engage the rear brakes. My mechanic told me after repairing the brakes that the rear brakes were not adjusted properly, meaning there was excessive space between the brake shoes and the drums.

I have subsequently learned that this Ford occasionally needs to be backed up while applying aggressive pumping action to cause the automatic adjusters to take up the slack. Perhaps my two quick pedal stabs to the floor did not take up the poorly adjusted rear brakes. This seems to be a plausible explanation as to why the split brake system did not react the way I thought it should.

Ford E-350 coach owners should have their rear brakes inspected and adjusted if needed. Poorly adjusted rear brakes could indirectly lead to an accident due to the front caliper/pin corrosion problem. And if the front brakes drag and boil the brake fluid in the front brake system, a rear brake system that's not adjusted properly may not be ready to take on the full load of stopping the vehicle.

*When the brake fluid "boils" inside the lines, air is injected into the fluid in the master cylinder as well as in the lines. When you push down on the pedal, you merely compress the air without forcing any brake fluid into the wheel cylinders.*

*If anything like that happens again, always have the fluid drained and replaced with DOT 3 fluid as soon as possible. Don't just top off the fluid; the entire system should be purged of all brake fluid and new fluid added.*

*Ford issued a Technical Service Bulletin (91-20-8) in 1991 concerning brake systems on the E-350 chassis. The bulletin relates to replacing the factory brake piston in the calipers with a newer designed phenolic brake piston. It has also been noted that 15-year-old chassis may require a more aggressive pedal action for the adjusters to do their job. However, if this is the case, perhaps you should have complete new brake assemblies installed on your rear brake backing plates.*

## MANIFOLD PROBLEMS

We have just bought a 33-foot 1987 American motorhome that is on a John Deere chassis and has a 460 Ford engine. It has broken exhaust-manifold bolts, and one of the bosses is broken, so I'm going to replace the heads. I found out on the Internet that there was a recall for this problem. I contacted both Deere and Ford, not to inquire about any warranty work, just to ask what they did to fix the problem. The answers I got were: "What problem?" and "We sold the company."

I had already ordered an after market exhaust system, all stainless steel with 5/8-inch flanges. Now, after all this, I'll get to the question: Will this solve the problem?

*This used to be a big problem when these coaches were a few years old. The manufacturers are no longer covering this, and it can be expensive. The repair usually involves replacing the broken cylinder head(s), along with the manifolds.*

*Oxygenated fuel makes the engines run leaner, which puts more heat into the exhaust manifolds. When the manifolds heat up, they expand. This process is what cracks the flanges on the cylinder heads. Carburetors that are worn or out of adjustment, weak fuel pumps, clogged filters and intake vacuum leaks, etc., all exacerbate the problem.*

*I recommend using headers instead of the iron manifolds, but also make sure that the ignition timing is set properly and that the air-fuel mixture is correct under load. To do this, you'll have to run it on a chassis dynamometer while the engine is connected to an exhaust-gas analyzer. As an alternative, a portable gas analyzer can be used on the road during a hill climb.*

## MORE WINTER HEAT

Is there an alternative heater that does not depend on LP-gas? Not only am I dissatisfied with the cost associated with the limited size of my LP-gas tank (that's another issue), I'd like to be able to heat my motorhome without having to move it every week or so to fill the LP-gas tank.

Surely there are small electric heaters in the market. I just haven't found any that fit the bill. Could you help?

*There are a number of electric heaters in the*

*market that would fit the bill. I suggest you visit when of the superstores and you will be surprised what is available.*

*What you will find are many heaters that have electrical requirements that vastly exceed what a campsite mains hookup can supply. Most Class A motorhome LP-gas furnaces are rated at around 30,000 BTU. If you dedicated your electric hookup to just an electric heater, you run a 3,000 watt heater on a 16-amp hookup but only 2,000 watts on a 10-amp. 3,000 watts is only about 10,000 BTU.*

*Electric heaters are very handy for background heat but you will still need to run the gas furnace when the weather conditions are more than just a little chilly.*

*All motorhome LP-gas tanks are too small for extended stays, particularly when you're out in the boonies. Some campsites have facilities to refill bulk tanks but you will have to move the motorhome to the facility to refill.*

*For all these reasons, the US Marshall Brass Company introduced the Extend-A-Stay several years ago. It is a special T-fitting and a hose that installs on your LP-gas tank. The hose attaches to a portable LP-gas bottle that can be exchanged on-site or at a local distributor without moving the motorhome.*

*The Extend-A-Stay kit is available from many RV accessory dealers either by mail order or at some of the major motorhome shows in the UK during the summer months. Fitting the kit usually takes less than 30-minutes. It is, however, recommended that you get an experienced person to fit the kit.*

## WHY A TAG-AXLE

I'm looking at a 2002 40-foot motorhome with a slideout. The 2002 model I'm considering has a tag-axle, but the same model in 2001 did not. Both motorhomes are available currently, and both are equipped with 450 horsepower engines. What are the advantages and disadvantages of a tag-axle, assuming, of course, that every thing else is equal?

*The predominant reason for adding a tag-axle is to better distribute, or carry, the weight of the coach. You'll need to weigh both models to determine which one has the cargo carrying capacity that best fits your needs. One of the disadvantages of a tag-axle is that you have more tyres to replace and more weight to move. And, in some cases, the motorhome's turning circle and tyre wear can be affected by the additional pair of tyres. Also, although I doubt that this will concern someone in a 40-foot coach, the tag-axle can cause traction problems on roadways with loose material, such as mud, gravel, or snow, and the reduced weight on the driven wheels can cause them to spin.*

### LETTERS TO SPANNERMAN AND ARTICLES FOR ARVM

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