

Wheels: We received an e-mail from a reader who has a road noise and a vibration in the steering of his 1994 Chrysler LHS. The dealer has replaced the front wheel bearings, which did not help. The longer the vehicle is driven, the worse the noise and vibration becomes. The tires have also been replaced. The vibration is also noticed in the front seats. Do you have any suggestions?

Halderman: The root cause of a noise and vibration are often difficult to locate. Here are some basic guidelines that we tell our students at Sinclair Community College:

1. If the vibration is felt or seen in the steering wheel, hood, or dash, then the front wheels/tires are usually the cause.
2. If the vibration is felt in the seat of your pants or over the entire vehicle, then the rear wheels/tires are the probable cause. If it is a rear-wheel-drive vehicle, then the driveshaft could also be the cause.
3. A tire noise usually changes in pitch or tone when driving over various road surfaces whereas a defective wheel bearing will create the same noise or vibration when traveling over all types of road surfaces.

Because both the tires and the front wheel bearings have been replaced, I would investigate the possibility that the cause is due to a fault with one or both the rear wheel bearings.

Wheels: What could a service technician do to locate the defective bearing or the source of the noise?

Halderman: Many service facilities have test equipment designed to help technicians locate the source of noise. One brand name is called "Chassis Ears" and includes several microphones, an amplifier and a set of headphones. The microphones are numbered and are attached to various parts of the vehicle. An assistant then drives the vehicle as the technician listens to one microphone at a time. If the noise is heard loudest at one microphone, then the microphones can be reattached closer to suspected components and retested. This tool really helps in the diagnosis of noise because the source of the noise can be at one end of the vehicle and heard at the other end.

For example, if the tailpipe is rattling at the rear, it may be heard as if it is coming from under the hood because the noise travels along the entire system.

Wheels: What could be done if the service facility does not have chassis microphones? How could a service technician determine the source of the noise?

Halderman: A thorough test drive should be performed first to verify the noise concern. This is an important step because if the noise cannot be verified, then the repair cannot be verified. After the noise has been heard, I suggest that a thorough visual inspection be performed including a close inspection of the tires, wheels, engine mounts, exhaust system, and drive axle shaft. The wheels should be rotated and checked for any roughness that could indicate a defective bearing.

