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## **Sounds, sweet sounds and death rattles A guide to the diagnosis of unusual noises**

Rolls Royce used to claim that at 100 MPH, the loudest sound was the ticking of the clock. They fixed that minor irritation by changing to a digital clock.

Actually, the subject itself is not at all funny. Being aware of the noises made by your vehicle can alert you to problems before they become expensive, dangerous or both. This is one reason to drive occasionally with the sound system off, preferably in a variety of conditions, meaning on quiet back streets, over speed bumps, on highways and off-road. Even with “normal” ambient sounds, the ear can actually be trained to focus on various parts of the vehicle with surprising ease. Here are some suggestions:

### **The exhaust system**

It is fairly simple to pick a faulty exhaust. The noise might be caused by any of the following:

- A hole in the muffler - easily detected by getting close to the muffler itself to listen for a rumbling sound.
- A dropped supporting bracket causing rattling or scraping sounds
- A leaking exhaust gasket usually starting with a piston-like “ppfft” then getting progressively louder. Over time, it will damage the manifold if not fixed.

### **The engine compartment**

Try to distinguish between the exhaust note and other sounds coming from the engine bay:

- Squeals will most likely come from a loose drive belt. This must not be ignored. Older vehicles may have manual tightening systems but there is more likely to be a self-adjusting serpentine belt. Inspect all belts carefully and if there is obvious wear, have them replaced promptly.
- A growl, grumble and/or a high pitched squeal is usually caused by a faulty water pump bearing. The pump should be replaced before real damage is done. Get the fan coupling checked at the same time.
- Hissing sounds may come from a faulty pressure cap or leaking cooling hose.
- Whistling noises may be vacuum leaks. Try to identify the source as a guide to your mechanic.
- Serious rattles from *around* the engine could be caused by a loose component but if the rattle seems to come from *inside* the engine, get professional advise fast before you get stranded. For example, a “clacking” sound from inside the engine could be tappets, but it also could be far more serious.

- A growling or grinding noise is frequently caused by a leaking steering pump seal. If refilling the reservoir does not fix this (most are self-priming), the hoses and/or the pump must be changed.

### **Brakes**

- Excessive squealing is probably (but not always) due to worn brake pads.
- Grinding noise may mean the pads have worn to the stage where the disks (rotators) are being scored and/or a calliper has broken. Obviously such conditions are potentially dangerous.

### **Tyres**

- A clicking sound, variable with speed may mean rubber peeling off the tyre and catching on the wheel arch. Change it immediately before it blows out.

### **Drive train**

This is a complex arrangement of moving parts and ANY noise MUST be investigated.

- A metallic clicking sound is most likely a faulty CV joint, and may be accompanied by difficulty in turning the vehicle one way or the other.
- A ticking/clicking sound may also be caused by a loose or defective universal joint in a drive shaft. If the joint fails the result is potentially deadly. There have been cases of vehicles flipping over if the shaft digs into the road surface.
- A defective wheel bearing may also click or make a grinding noise before it seizes. Noises from worn bearings can be tricky because the noise can carry along the chassis and appear to be coming from a different component.
- Loud whines from the back or front may be coming from the diff centres. Check the oil levels immediately and if OK, consider changing the centres.
- Whines from the centre of the vehicle, audible through the cabin are probably from the gearbox and/or transfer case. Such noise is not to be ignored.
- A clanging noise on takeoff may be a faulty auto transmission and/or worn thrust bearings.

### **Inside the cabin**

Other than annoying rattles from the tailgate, doors or windows, the most common noises are caused by leaking dust seals. The problem is that unless they are fixed, they may prevent the driver hearing other more serious noises.

Please see the other articles on the website <http://www.graemecooper.com.au> where there is more detail about many of the conditions noted above.