

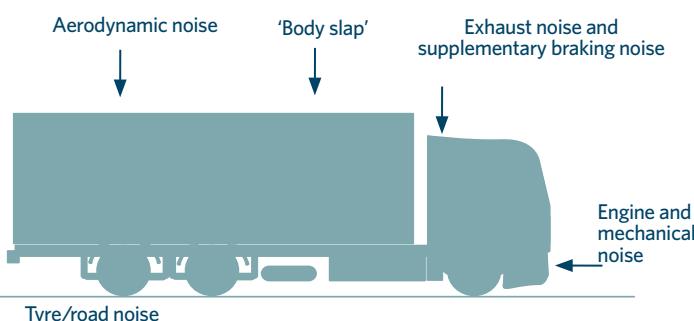
Engine braking noise

Heavy vehicle noise

Noise from heavy vehicles comes from several sources, as shown on the diagram below.

Supplementary braking systems, such as engine brakes, are only one of the sources of heavy vehicle noise.

The loudest source of noise at any particular moment depends on the type of heavy vehicle and the speed it is travelling. Below about 50km/h, the engine noise is usually the loudest component. At higher speeds the noise from the tyres on the road surface becomes louder.



Supplementary brakes

Supplementary braking systems are provided on heavy vehicles to assist the normal service brakes in maintaining safe speeds travelling down hills. There are three main types of supplementary braking systems:

- Exhaust brakes: a device intermittently blocking the exhaust to create back pressure on the engine.
- Engine brakes: a device releasing compressed gases from the engine.
- Retarders: electric or hydrodynamic devices installed in the driveline.

Engine brakes are typically used on large trucks, whereas exhaust brakes are common on medium trucks. Engine and exhaust brakes give rise to a series of pulses of noise, which can have a distinctive sound often described as a 'machine gun' or 'barking' noise.

Management of engine braking noise

Where disturbance from engine braking noise has been reported, it is generally found to relate to only a small number of trucks. Several approaches can be used to manage engine braking noise:

- Education of heavy vehicle drivers/operators.
- Management of truck routes such as near ports.
- Intersection improvements to avoid braking.
- Prohibition on local (low speed) roads.

The most effective means of managing engine braking noise in a location where it is causing disturbance is to liaise with the heavy vehicle operators. If specific vehicles or operators can be identified then they may be able to take steps to adjust vehicles, driving practices or hours of operation. A 'noise camera' system has a microphone to trigger a camera which reads the number plates of trucks with particularly noisy engine brakes.



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A common method to attempt to manage engine braking noise is through local restrictions. Signs can be erected asking drivers not to use engine brakes in a particular location. There are however difficulties with these signs:

- Supplementary brakes are important for safety in some locations (eg steep long hills, motorways).
- The signs only address engine braking, whereas the actual cause of disturbance may be another noise such as body slap from trucks. Indiscriminate use of signs reduces their effectiveness in areas where they are most needed.
- The signs on the state highway network are only advisory.

