

AUXILIARY BRAKING SYSTEMS (RETARDERS)

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All CAL FIRE Bulldozer Transports, Fire Engines, and Emergency Crew Transports, are equipped with an auxiliary braking system. Other vehicles (non-CAL FIRE owned Schedule A equipment) with a Gross Vehicle Weight Rating, (GVWR) of 26,000 pounds or more may also be equipped with an auxiliary braking system. The California Vehicle Code requires an auxiliary braking system on all fire apparatus exceeding 31,000 GVWR. An auxiliary braking system can be incorporated into the vehicle's engine and is referred to as an engine brake. It can be a compression brake, commonly known as a "Jake Brake" or it can be part of the engine's exhaust system. The manufacturer of the vehicle engine may offer an exhaust brake or provide an after-market system. A common after-market exhaust brake is the "Blue Ox" and is found generally on medium size trucks. Another popular auxiliary braking system is a drivetrain system that is incorporated into the vehicle's transmission or in the driveshaft. These systems are commonly referred to as "Retarders". It can be an input or output shaft automatic transmission retarder. The majority of CAL FIRE automatic transmissions in fire apparatus and heavy trucks are "Allison" automatic transmissions with output shaft hydraulic retarders. Other common types are driveline retarders that can be hydraulic or electro-magnetic. Brands of driveline retarders used in the fire service include "Voith" and "Telma". All of these systems can be totally controlled manually or can be totally automatic. All types can be turned on or off at a master control switch.

Before driving any vehicle, always familiarize yourself with the owner's manual by reading and understanding how the particular system operates and is controlled.

No matter which type auxiliary braking system the vehicle is equipped with, their function is essentially the same. Auxiliary braking systems assist the service brake system in decelerating the vehicle. These systems will enhance downhill vehicle control, provide extended service brake system life and significantly reduce the risk of overheating the service brakes or having service brake fade or fail.

The California Commercial Driver's Handbook, published by the Department of Motor Vehicles states "**Caution** when the drive wheels have poor traction, the retarder may cause them to skid. You should turn the retarder off whenever the road is wet, icy, or snowy". Retarders can cause the driving wheels to lose traction and skid on slippery surfaces.

Regardless of the type of auxiliary braking system on a CAL FIRE-owned or local government-owned vehicle, the braking system shall be turned off when road surfaces become wet, icy or slippery and slow the vehicle to an appropriate speed for road conditions.

OPERATING AN AUXILIARY BRAKING SYSTEM WHILE DRIVING ON A SLIPPERY SURFACE CAN CAUSE A LOSS OF CONTROL AND A CRASH. DO NOT USE THE AUXILIARY BRAKING SYSTEM ON WET, ICY OR SLIPPERY ROADS. DURING INCLEMENT WEATHER, TURN OFF THE AUXILIARY BRAKING SYSTEM AT THE MASTER CONTROL SWITCH.

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