

To avoid overheating problems, check cooling system and engine for leaks

When a cooling system fails, the engine overheats. And when a car overheats for very long, metal engine parts can be seriously damaged and require expensive repair.

Overheating can result when the coolant level is too low or when there is a leak in the system. Sometimes just driving in stop-and-go traffic on a hot summer day with the air conditioner running is enough to overheat the engine.

Coolant loss

A low coolant level, explain Gates Rubber Company engineers, leads to overheating because there isn't enough fluid in the system to absorb engine heat. The air in the system that is absorbing these high temperatures is a poor heat conductor and won't do an effective job of transferring the heat to the radiator.

Cars with coolant recovery tanks have markings on the white plastic tank indicating where coolant levels should be when the car is running and

when it's not. If the coolant level is low after repeated fillings, you probably have a leak in the system.

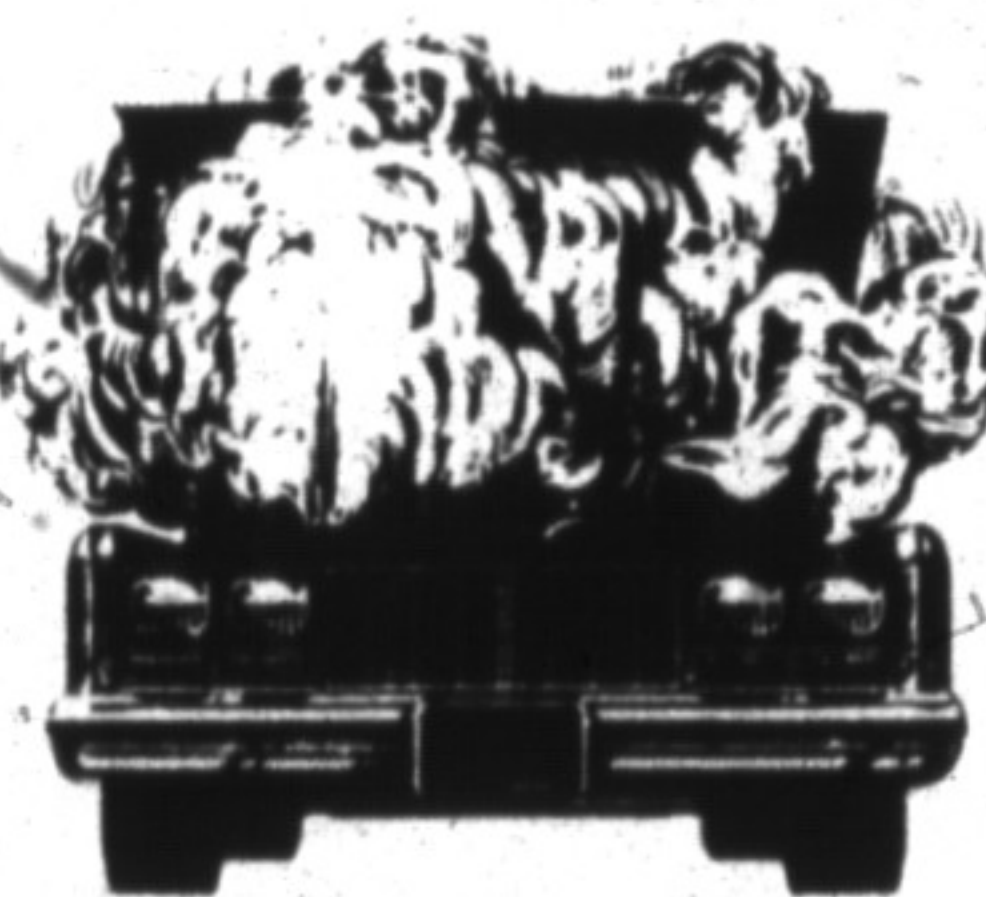
Coolant hose leaks

Hoses are the most likely source of leaks because they are structurally the weakest components of the cooling system. Hoses must be flexible to absorb vibration, so they are made of rubber compounds. Rubber, unfortunately, is not as durable as metal.

According to Gates, intense engine heat can harden and crack even the best rubber; oil can soften and swell it; the simple passage of time can break down its internal bonding; and electrochemical degradation can crack the tube.

In many instances, hose leaks occur at faulty connections to the inlet and outlet pipes. Make certain the hose clamps are secure.

When replacing a hose, it's also a good idea to replace the clamps. Traditional worm-drive clamps or the new constant tension clamps are best.



To extend the service life of a hose, keep it away from damaging external elements such as hot manifolds, oil-leaking parts and sharp edges. In these situations, protect the hose with a sleeve.

You should also avoid using the soluble oils found in some coolants, under the assumption they lubricate the water pump. Most modern antifreeze solutions contain all the lubricants a water pump needs. Soluble oil only serves to

destroy a hose before its time.

All cooling system hoses should be inspected every six months. Most often, the upper radiator hose and the curved bypass hose will fail without warning. But, eventually they all will need to be replaced.

Gates recommends replacing the cooling system hoses roughly every four years.

Water pump leaks

It is common to find an occasional drop of coolant under the water pump. Excessive leaking, however, indicates a problem. Housing bolts on the pump should be tight. If they are, and leaking persists, the pump's inner seal is probably damaged and the pump must be replaced.

Radiator leaks

Radiator leaks are often just the result of a loose petcock or plug.

Simple tightening should correct this.

The inner seal on the radiator cap should be checked periodically. If the seal is cracked, or the metal parts are rusted, coolant will escape and the cap will fail to pressurize the remaining coolant adequately.

White stains on the radiator point to a more serious problem. These stains result from coolant reacting with the metal parts. Pouring a liquid sealant in the radiator might solve the problem, but chances are good that the radiator needs to be repaired or replaced. This is frequently the case with many of today's aluminum radiators.

Heater leaks

Leaks can occur in the heater control valve or in the heater core. A liquid sealant can sometimes help but, more often than not, the heating system units will have to be replaced.

Engine leaks

Leaks can occur on the engine block wherever there is a bolted housing, such as at the thermostat or water pump housing.

You should also inspect the block's drain plugs and core plugs (also known as freeze plugs). Core plugs are holes left in the engine when it is cast and later covered by metal discs. If these discs loosen or corrode, coolant can escape from the block.

If leaking continues after you've checked all the hoses, clamp connections and metal components of the cooling system, the leak is probably internal, advises Gates.

This situation can be confirmed by the presence of engine oil in the coolant, in the exhaust system, or transmission fluid. A visually inspected sample of the coolant will reveal the presence of oil. In both the latter situations, however, sophisticated test instruments will help make this determination.

In all cases, internal leaks can be the result of blown head gaskets, cracked heads or blocks, and loose or damaged head bolts. Usually, major engine repair is required.

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AUTO FACTS

Solution to spills and stains may be in your glove compartment

(NC)—Whether it's a glass of grape juice spilled on your light-coloured sofa or a blob of grease on the front seat of your car, the answer on how to deal with spills and stains may be no further away than your glove compartment. General Motors advises you reach for your Car Owner's Manual and turn to those sections dealing with "Appearance Care" or a related heading.

Providing immediate fabric "first aid" can often mean the difference between a spill that permanently stains and one that doesn't. And the often overlooked Car Owner's Manual tells you how to take action when an accident threatens to mar carpets or upholstery, including cloth, vinyl and leather. The techniques described in the Car Owner's Manual work equally well for domestic mishaps.

Your Car Owner's Manual often provides detailed instructions for removing a wide range of potential soilers from upholstery fabrics. For example, remedies are given for greasy or oil stains, which includes oil, butter, shoe polish, coffee with cream, chewing gum, cosmetic creams, vegetable oils, wax crayon, tar and asphalt.

Are you faced with non-greasy stains? These ominous stains may include ketchup, coffee, egg, fruit juices and wine, milk, soft drinks, vomit and blood. There are also helpful tips in your Car Owner's Manual on how to properly clean and care for vinyl and leather upholstery and trim.

Almost as vital as what to use and how to use it is the manual's cautionary advice on what not to use in specific spills' clean-up to prevent fabric damage or personal injury. Your Car Owner's Manual provides a wealth of information that is too often ignored by motorists and homeowners.