Keeping It Cool

You really need to look after your car's waterworks

Believe it or not, modern cars don't give much better fuel economy than older ones. Even back in the 1950s, specially tuned Morris Minors were driving 100 miles on a single gallon of petrol (that's around 2.8 litres per 100 kilometres) and reaching speeds of 180km/h. The catch was, they could never do 180km *and* 100 miles per gallon at the same time and they couldn't do either in everyday driving conditions.

What modern cars give is much more power for the same amount of fuel. This has partly been achieved by building more efficient engines, but mostly by making the engines out of stronger parts, and then working them far harder. A Morris Minor driven continuously at 180km/h would disintegrate its motor in a few hours. Modern cars, however, have to operate continuously at speeds which would have been achievable only on race tracks before World War II.

Because modern cars work harder than ever before, they demand a far higher standard of maintenance. You can't forget to change the oil, and you certainly can't neglect the way that they cool themselves.

Back in the 1970s, you could fill up your Land Rover's radiator from the nearest stream (many people did). Radiators tended to get serviced only when they started spraying water, and even then most people tried to drive them in for service rather than getting them towed to a garage. You got away with stuff like that then because the cars were lazy and didn't usually give a lot of difficult cooling problems.

Those days are long gone. The modern car's cooling system is not only critical to the continued reliability of the vehicle, but modern cooling systems aren't especially longlasting – they tend to fail not long after the car leaves the guarantee period. Without being alarmist, if you neglect your car's cooling system, you can expect catastrophic engine repairs to follow. If you're lucky you may just blow a head gasket, but if you're not, expect a full engine rebuild.

The radiator on a 1950s Morris Oxford could easily last twenty years. Not so any more. The majority of radiators, including those of upmarket models like BMW & Mercedes, are made of aluminium with plastic tops. Those plastic tops have a strictly limited life, perhaps 80,000–180,000km, depending on how the vehicle has been maintained and how it was driven. Once they start leaking, there's no way you can repair the plastic. You usually have to replace the whole top unit, and they're not cheap. Some motorists – the lucky or careful ones – have radiators that can last for hundreds of thousands of kilometres. However, this group is in a minority, like drunk drivers who don't have accidents or get caught.

There's worse news: all modern cars are designed to operate with antifreeze in the water. A chemical is added to the antifreeze to stop it eating out the inside of your radiator. However, this chemical gradually loses its effectiveness, and then the antifreeze starts to gnaw away at the insides of both your radiator and your car's engine, especially the cylinder head. That's part of the reason that high mileage Toyotas, Mazdas and other makes often start mysteriously losing water then blowing head gaskets a short time later. It's not the fault of the engine, it's the fault of the liquid *cooling* the engine, or rather, a failure of one or more owners to make sure that this liquid is changed regularly.

On an older car, you could easily spend the entire value of the car on fixing the blown head gasket and its accompanying damage. All this is surprisingly easily avoided. All you need to do is to make sure that the cooling system is correctly maintained. On an older car you can do this yourself (see separate panel).

On modern cars, there are a few crucial ways of protecting your car's cooling system. The first is to avoid cars where the owner cannot prove that the vehicle has been properly maintained. It's much harder with Jap imports where the car's origin is something of a mystery. You have to trust your mechanic on these. Even on locally built cars, service records are often next-to-impossible to find with vehicles over ten years old. Often service records are simply lost as the car passes from owner to owner. Sometimes they are deliberately lost because the prick who's trying to sell the car to you doesn't want you to know that he hasn't maintained it in eight years. Probably a mechanic friend of his told him to get rid of it, and you're the prospective sucker.

In this wicked, wicked world, you must therefore assume that if there isn't hard evidence that the car's cooling system has been serviced, then it hasn't. A mechanic can sometimes tell, but you can't, so don't bother trying to guess. It's a common trick for sellers to change the fluids in the radiator just before a sale. The new fluids have a healthy green colour and look very pretty, but they tell you nothing other than the fact that someone has recently changed the fluids in the radiator. The whole engine could be stuffed for all you know.

If, after checking out the car, your mechanic tells you that the cooling system was last maintained during the Boer War, you should probably walk away at this point, unless the car is sufficiently old that it doesn't matter, or sufficiently cheap that you can afford to leave it at the side of the road when it blows up.

In all other cases, if your mechanic tells you that the cooling system on the car you are thinking of buying has not been maintained properly, start walking and don't look back.

The situation with used car dealers is slightly different. If the dealer is reputable (look, there has to be at least *one* somewhere, okay?) and his guarantee covers both the entire cooling system and any consequential damage to the car, including towing fees, well, basically it's his problem, not yours. But beware! Most dealers are a thousand times better at promising than delivering, and they have ten thousand nasty little tricks for avoiding paying for repairs. Worse, they may insist that they fix the car themselves, which usually means shoddy repairs in some backstreet workshop using parts of questionable origin.

Further, many dealer guarantees are actually insurance policies that the dealer buys from some insurance firm, and these policies often have two catches: one is that the policy does not cover the cooling system (they're not stupid), and two, that you have to religiously service the vehicle. The second condition is probably doing you a favour, but you'd better make sure your garage is approved by the insurance company and that you do everything the policy says, otherwise they'll laugh in your face if you try and make a claim.

If you're now drenched with sweat and utterly alarmed at the imminent failure of your car's cooling system, relax, it may not be that bad. What we are trying to do is to scare you into making sure that the *seller* pays the price for any cooling system upgrades, not you. You'd be amazed at the number of people who get a car checked out by a mechanic *after* they buy it. Or the readers who tell us they have had a good run from their car. Then they blush and say. "Of course, I ran it out of water on the motorway and had to have the engine rebuilt, but of course, that wasn't the *car's* fault." Oh yeah? •