## Fuel-efficient vehicles must keep their cool

Owners of the more fuel-efficient vehicles built since the late '70s are advised of the importance of keeping their engine cooling systems in prime condition. According to Automotive Cooling Systems Institute, these engines are more sensitive to correct operating temperatures than were their predecessors of a decade or more ago. Engineers have designed engines to operate at higher temperatures due to downsizing of radiators to fit in small vehicles.

Ten years ago, larger radiators with seven-pound pressure caps kept the boiling point of an engine at about 230 degrees. Today's cars, which have smaller frontal areas and therefore smaller radiators, have necessitated a move to 15-pound pressure caps which push the boiling point of an engine to 260 degrees. The hotter-running engines are also more fuel efficient and less polluting.

ing. Maintaining efficient performance and long engine life demands conscientious attention to the maintenance of the vehicle. This places the responsibility on the driver to be alert to unusually hot or cold engine operation and to take corrective measures before damage is one.

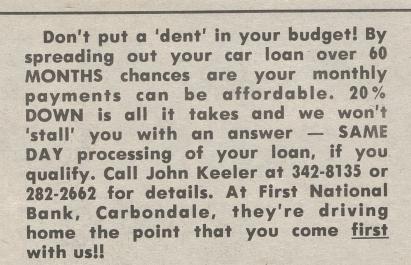
This is easy for the owner whose car has a temperature gauge on the instrument panel. Over-cool operation or progressive overheating shows up on the dial. However, most cars have warning lights which often don't indicate trouble until it is too late. For owners of these cars, the Institute suggests several danger signs to be aware of.

Poor operation of the heater in the winter certainly is an indication that the car is not warming up. A cold-running engine often causes sluggish performance and poor fuel economy due to unburned gases. Additionally, unburned contaminants in the oil can cause sludge to build up in the crankcase.

If it's running too hot, eventually the warning light will come on. Meanwhile, however, an indication of a hot-running engine could be knocking or pinging under load or a tendency of "after-run" or dieseling when the engine is shut off.

Preventive maintenance of the cooling system is the key to preventing either of these symptoms. Annual cleaning and checking of the system plus replacing the belts and hoses, as needed, will go a long way toward prolonging engine life and maintaining power fuel economy.

A special warning goes to motorists who use their vehicles for towing - unless the car is equipped with a factory trailer towing package, it is advisable to have an additional engine/transmission cooler installed. The automatic transmission is cooled by the same system that protects the engine and extreme overheating can damage the transmission as well as the engine: double jeopardy.





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