

## Reality versus the owner's manual

Engines are being so damaged by sludge that only engine cleaning and restoration will save them.

The ever-widening gaps between scheduled car servicing have unwittingly lulled the average motorist into a sense of false belief that the car's engine will somehow survive on its own and that it doesn't really matter if engine services are overlooked or extended.

- ◆ It has been left to the after-market workshops to educate motorists about lubrication disciplines
- ◆ Owner manuals stipulate that the engine oil be changed at recommended intervals.

The following is from a typical owner's manual, which lists 'severe' driving conditions. These driving patterns could apply to almost every vehicle, and means that the vehicle must have oil changes more frequently than the standard service – maybe every 7,500 kilometres or six months, whichever occurs first.

- Maintenance Schedule for **Severe** Driving Conditions.  
If you primarily drive your vehicle under one or more of the conditions listed below, please follow the "Maintenance Under Severe Driving Conditions" schedule.
- A: Driving in dusty conditions
  - B: Repeatedly driving short distances
  - C: Towing a trailer or caravan
  - D: Extensive idling
  - E: Driving in extremely adverse weather conditions or in areas where ambient temperatures are either extremely low or extremely high
  - F: Driving in high humidity or mountainous areas
  - G: Driving in areas which are high in salt or other corrosive materials
  - H: Driving on rough and/or muddy roads or in the desert
  - I: Driving with frequent use of brakes
  - J: Frequent driving in water
  - K: Sustained high speed driving
  - L: Repeated short journeys, cold engine at low temperature
  - M: Low speed driving (Average speed <30km/h)



## How to keep your car healthy and happy

The best insurance a car owner can have against very costly repairs, even early in a new car's life, is to pay closer attention to service intervals and driving patterns.

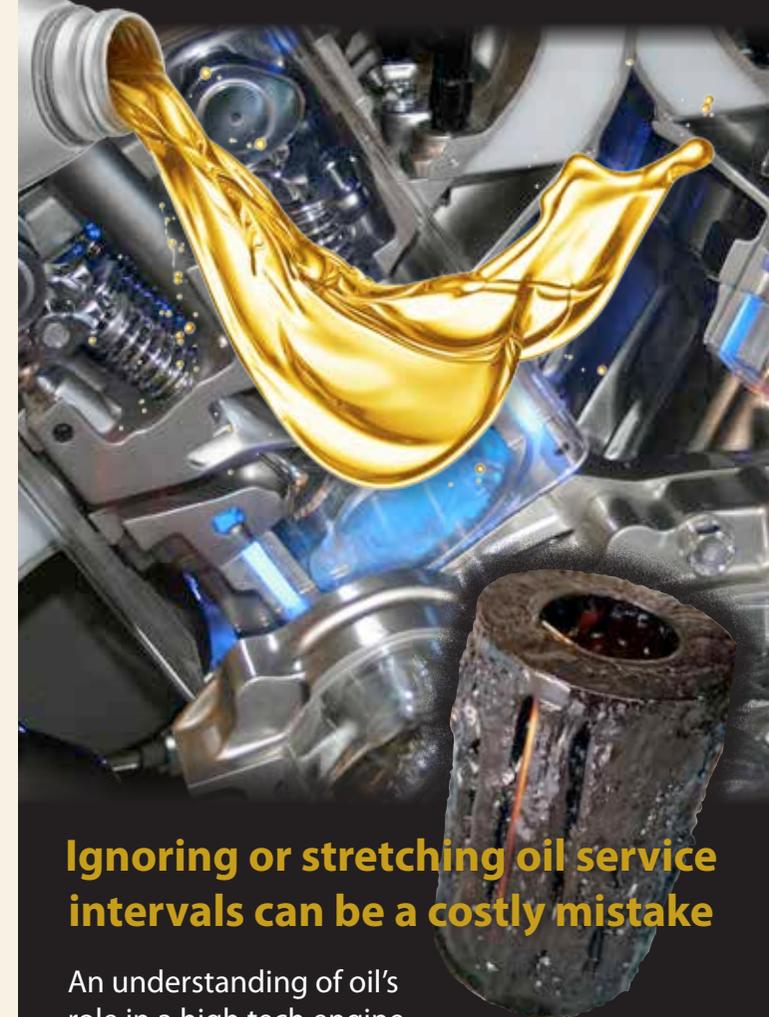
- ◆ Adopt a competent after-market auto workshop that will ask about your driving patterns and keep a job card for your vehicle to ensure that an appropriate oil change service is carried out, long before sludge problems occur and therefore saving you a costly early repair or even engine replacement
- ◆ Refer to the manufacturer's manual to determine what type of oil to use in your car's engine and take particular notice of all references to the frequency of oil changes under certain driving conditions.

**Don't let it happen to you.**

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## The good oil about oils



## Ignoring or stretching oil service intervals can be a costly mistake

An understanding of oil's role in a high tech engine and an awareness of stringent maintenance requirements, have now become more essential than any other vehicle maintenance issue.

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## Oil does a lot more than just lubricate

Oil circulates through the engine, between the gears and other moving parts.

The oil does its job by preventing extremely harmful metal-to-metal contact, but in the process, it absorbs the brunt of all that moving metal.

These conditions quickly destroy the oil's thickness, or viscosity, which is one of the oil's main qualities.

### What oil does

- ◆ Separates and lubricates moving parts
- ◆ Reduces engine wear
- ◆ Prevents deposits from forming on internal engine components
- ◆ Suspends contaminants until they can be removed at the next oil change
- ◆ Cools engine parts
- ◆ Protects the engine over a wide temperature range
- ◆ Most technological advancements in engines rely on oil pressure and quality

# The new killer of the modern engine is sludge

- ◆ When oil starts to break down, it is increasingly less able to do the hard work of lubricating the engine
- ◆ The oil's numerous additives and detergents evaporate, lose potency, or are simply used up
- ◆ Dirty oil can no longer remove and prevent harmful gunk
- ◆ Impotent oil allows sludge build-up, comprised of unburned and partially burnt fuel, metal fragments from wear and dirt that find their way into the engine
- ◆ Deposits of dirt and debris are carried through the oil until they find somewhere to settle, restricting or blocking the surrounding oil flow, which causes increased engine wear
- ◆ Thick and gummy deposits are formed and harden once they settle
- ◆ Once a blockage spot is established, new build-up will settle on top of it instead of allowing the oil to flow around it
- ◆ Prime targets for deposits include the fuel injectors, piston rings and valves, all of which will interfere with the engine's operation.

