

## Technology Forecast

### *Engines Are Heating Up*

If bigger is better, warmer may be better, too. To increase engine efficiency, automakers are studying the possibility of higher operating temperatures. According to some studies, the normal setting could rise by 40 percent. If so, the operating temperature would be 250°—quite a jump from the 180° to 195° common today.

Why the difference? With the higher temperatures, the fuel does not condense on the cylinder walls as the air-fuel mix enters the combustion chamber. The fuel is properly ignited, not simply passed through the exhaust as harmful hydrocarbons. Efficiency increases as exhaust emissions fall.

There is a potential concern with this plan. Some engineers are worried that there may not be enough “wasted” heat to provide the hot water needed by the vehicle heater. As a solution, smaller, fully-sealed cooling systems may be developed. They would operate at the desired higher temperature, while providing proper heat and engine cooling.

Another change is being seen in the position of the engine thermostat. With the unit moved to the water pump’s inlet side, warm coolant flows through the engine. This setup reduces thermal shock to the engine.

#### **Action Activity**

Use the Internet and other sources to find out more about “hotter” engines. What are some advantages and disadvantages to this idea? Why are automakers so concerned about reducing exhaust emissions and improving fuel efficiency? Present your findings to the class.