Ask the Expert……..

On Board Diagnostics (OBDII) and the MIL

This primer document will attempt to explain the basic concepts of the On Board Diagnostics (OBDII) standard and the function of the MIL (Malfunction Indicator Lamp) on your vehicle's dashboard. For more detailed information go to the links provided in **Sources**

Background

The first generation of On-Board Diagnostic requirements, called OBD I, was developed by the California Air Resources Board (ARB) and implemented in 1988. As technology and the desire to expand On-Board Diagnostic capability increased, a second-generation of On-Board Diagnostics requirements was developed. This second version of On-Board Diagnostic capabilities is called "OBD II". The Clean Air Act Amendments of 1990 mandated that, beginning with the 1996 model year, all light-duty vehicle and trucks made available for sale outside of the state of California must also be equipped with OBDII. In addition, EPA also requires that medium duty vehicles up to 14,000 pounds must also be equipped with OBD II systems beginning in the 2004 model year. In the future, EPA expects that all heavy-duty vehicles over 14,000 pounds will eventually be equipped with OBDII systems.

The OBD II system monitors virtually every component that can affect the emission performance of the vehicle to ensure that the vehicle remains as clean as possible over its entire life, and assists repair technicians in diagnosing and fixing problems with the computerized engine controls. If a problem is detected, the OBD II system illuminates a warning lamp on the vehicle instrument panel to alert the driver. This warning lamp typically contains the phrase Check Engine or Service Engine Soon. The system will also store important information about the detected malfunction so that a repair technician can accurately find and fix the problem.

What is OBD, and what are its benefits?

OBD stands for "on-board diagnostics," a computer-based system built into all model year (MY) 1996 and newer light-duty cars and trucks. OBD monitors the performance of some of

the engines' major components, including individual emission controls. The system provides owners with an early warning of malfunctions by way of a dashboard "Check Engine" light (also known as a Malfunction Indicator Light or MIL, for short). By giving vehicle owners this early warning, OBD protects not only the environment but also consumers, identifying minor problems before they become major repair bills

How do I know the OBD system is working correctly?
When you turn on the ignition, the "Service Engine Soon" or "Check Engine" light should flash briefly, indicating that the OBD system is ready to scan your vehicle for any malfunctions. After this brief flash, the light should stay off while you drive as long as no problems are detected. If so, you'll be glad to know that your vehicle is equipped with an early warning system that could save you time, money, and fuel in addition to helping protect the environment!

What does it mean if the light turns on while I'm driving?
If the light comes on and stays on, the OBD system has detected a problem. Your vehicle might have a condition that wastes fuel, shortens engine life, or causes excessive air pollution. If left unaddressed, these conditions could also damage your vehicle and lead to increasingly expensive repairs. For example, OBD can identify a loose or missing gas cap (which wastes fuel and contributes to smog) or engine misfire (which can lead to severe or permanent engine damage). The MIL alerts the driver of a potential problem; IT IS AN EARLY WARNING SYSTEM.

What should I do if the light stays on?
There is no cause for panic. The vehicle is just telling you to seek attention soon. When you reach your destination, make sure the gas cap is not loose or missing. Always turn off your engine when refueling. If the light does not go out after a few short trips following gas cap replacement or tightening, have your vehicle serviced by a qualified repair technician soon! Delaying assistance could lead to more expensive damage.

What does it mean if the light is blinking?
If the light is blinking, a severe engine problem such as a catalyst-damaging misfire is occurring and should be addressed as soon as possible. You can still drive safely, but should minimize your time on the road. Try not to drive the vehicle at high speed or with excess weight (such as towing or carrying heavy equipment).

What will my technician do when I take my vehicle into the shop?
Ask your repair shop if they employ trained OBD technicians. A modern repair shop or dealership should have an OBD scan tool (a small, hand-held scanning device) to diagnose the cause of your vehicle's problem. These technicians will have the proper tools and will know best how to diagnose your vehicle. The OBDII connection for the

Scan tool is in the passenger compartment and usually under the dash within 18 inches of the steering column.

The technician will connect the scan tool to your vehicle's computer (usually through a connector under the dashboard) and download information that can pinpoint the problem. The technician can then repair the vehicle based on manufacturer recommendations. OBD actually helps repair technicians do their job more quickly and reliably, helping you avoid unnecessary repairs and trips back to the shop.

How is the MIL turned Off?
There are several ways to turn off the MIL: 1) heck to see if the gas cap is tight; if not tighten it (the MIL may not go off immediately)- a loose cap may indicate an evaporative fuel leak; 2) have an auto technician check the system with a scan tool, perform a repair and turn off the light or, 3) the system may turn itself off after a period of time if it no longer detects a problem.

Why am I charged for diagnostic time on a system that diagnoses itself?
OBDII only provides a 'hint' or a 'clue' of the problem. Diagnosis time will generally be needed to isolate the true cause of your vehicle's problem and identify the proper repair. There will be a charge for this labor.

What if the Auto Technician hasn't been able to fix the problem after several attempts?
There may be other problems not readily detectable. For example, the light may come on due to a software problem when there is no problem with the sensor component. This is an unusual situation, but it is still important to have the software problem fixed so OBDII can function properly and detect potential problems with the vehicle.

Sources:

http://www.epa.gov/obd/questions.htm US E.P.A. Link
http://www.obdiicsu.com/ OBDII Research Web Site Link
http://www.netistix.com/resources/link.php?id=4
http://catsis.weber.edu/autocenter Weber State web site