What is On-Board diagnostics System II?

On-Board Diagnostics (OBD) systems are in most road vehicles nowadays. They allow the driver or the repair technician to read health information for various sub-systems. In the earlier years, OBD-I would light a malfunction indicator while a problem was detected—but provide nothing related to the essence of the problem. Through these years, OBD systems have been developed very fast. OBD-II, a new standard came out in the mid-90s, offer real time data as well as a standardized series of diagnostic trouble codes or DTCs, which enable technicians to easily find and repair malfunctions within the vehicle.

Where'd it come from?

In order to solve its smog problem in the LA basin, the State of California started requiring emission control systems(OBD-I) on 1966 model vehicles, with the hope that OBD-I can help reduce the pollution in addition to provide early diagnostic assistance. However, the insufficient accuracy of OBD-I, such as cannot monitor the efficiency of catalytic converters, result in increased hydrocarbon emissions. Together with the insufficient sensitivity of OBD-I’s monitoring circuit, a large amount of emissions had already discharged before the fault of a car is detected.

Besides, OBD-II also faces another problem: the vehicle manufacturer developed its own diagnostic system, maintenance procedures, specific tools, etc., all of these introduce lots of problems to the repair technician. All of these promote the development of OBD-II, which is an expanded set of standards and practices developed by SAE and adopted by the EPA and CARB for implementation by January 1, 1996[1].

The improvement of OBD-II from OBD-I

Compared to OBD-I, OBD-II add new features, including specifying the type of diagnostic connector and its pinout, the existing of electrical signaling protocols, and the standard messaging format. It also offers a candidate list of vehicle parameters to monitor together with how to encode the data for each [2].

Reference:
