

Wheels: An e-mail from Tony says, "My 1999 Mazda Protege has a tendency to downshift abruptly at random times. It happens most frequently when I am maintaining a steady speed in the 35-50 mph range, generally on a level stretch of road. I coast with my foot off the accelerator for a short distance, then gently apply pressure to the accelerator to maintain speed. At this time, it feels as if a sensor tells the transmission to downshift, and it does with alarming results. I have had my car serviced by the dealer at the recommended intervals; the most recent was a 60,000-mile checkup, including timing belt replacement.

A year ago, I began experiencing this problem, and my dealer replaced a mass airflow sensor, under a recall agreement. This appeared to cure the problem; however, I do not know if the sensor has failed again or if there is another defect within in the drive train system.

In June, 2003, I took the car to Massachusetts, where it began downshifting without warning. While there, I stopped at a Mazda dealer and they could detect no problem. On my return, I took the car to our local dealer, where they tried for several days to locate the problem. However, their technicians could not duplicate the problem while driving the car. I have kept the dealer informed of the problem, but they cannot cause it to recur, therefore they cannot correct it.

This downshifting problem is randomly occurring. That is to say, it will occur only at certain times and cannot be induced voluntarily. The time when the transmission is most likely to downshift is when I have been maintaining a constant speed and attempt to accelerate gradually. It is frustrating to know that this can happen and the cause cannot be detected.

I might include that while driving, I keep the overdrive engaged at all times. I drive with a light foot on the accelerator, and the problem has also occurred while driving at 55-60 mph with the cruise control engaged. It has also happened while my wife is driving the car."

Halderman: This is a tough one because it cannot be easily duplicated. The transmission will down shift if the computer senses a load on the engine. The load is determined primarily by two sensors:

1. The mass air flow (MAF) sensor which measures air flow
2. The throttle position (TP) sensor also called a TPS.

Because the fault was corrected by the new MAF sensor, I would tend to think that this sensor has failed again or has become contaminated with dirt. Sometimes the resins used in the air filter can be drawn by engine vacuum from the surface of the filter and onto the sensing wire inside the MAF sensor. The TP sensor is also a possible cause because wear can cause it to fail especially at one speed, such as you are experiencing. An experienced technician using a lab scope or a digital meter set to "min/max" could locate a fault with the TP sensor.

