Wheels: An e-mail from Tom asks, "The first of September the state started checking cars for NO_X during the E-check. I have a 1989 Pontiac with a quad four engine and 60,000 miles on it. The car runs find, but it failed E-check on NO_X. The reading was 2646 parts per million (ppm) versus a limit of 1258 ppm. The computer doesn't show any codes. Do you have any suggestions on what to change in order to pass E-check?"

Halderman: Excessive NO_X exhaust emissions are caused by a lean air-fuel mixture or a hot running engine. Possible causes include:

1. A lean air-fuel mixture could be caused by a vacuum leak; low fuel pump pressure or volume or partially clogged fuel injectors.
2. Hot running can be due to an inoperative cooling fan or other cooling system faults. Often a good carbon cleaning of the combustion chambers will lower compression and lower NO_X exhaust emissions. This operation can be performed at most automotive repair shops or dealers usually for less than $100.

If the carbon cleaning does not reduce the NO_X emissions enough to pass, then I suggest that you have a diagnostic check performed that will help pinpoint where the problem may be located. Most engines fail for excessive NO_X emissions due to a fault with the EGR valve or system, but your Quad Four engine is not equipped with an EGR valve.