Wheels: We have an e-mail from Brian asking about hydrocarbons. Brian states, “I have a 1993 Nissan Maxima with 193,400 miles. While it passed a recent E-Check, I noted that the hydrocarbon output rose from 34 ppm in 1999 to 118.7 ppm this time. Since the “passing” rate is only 120 ppm, is there anything I can do to ensure passing E-Check the next time?
(FYI: The CO and CO2 measurements were virtually unchanged from the 1999 E-Check. Also, the car received new plugs and valve adjustment at 187 K and an oil change only 400 miles ago.)

Halderman: HC emissions are actually unburned fuel. A fault with the spark plug wires or distributor cap/rotor could cause the problem. A thermostat that opens a little too early can also cause high HC emissions. Make sure the engine is fully warm by driving about 20 miles before having it tested.

The following list includes suggestions that will help prevent your vehicle from failing an enhanced emission test if your vehicle has been properly maintained. These suggestions will not allow a neglected vehicle to pass.

1. Only test your vehicle on a nice day - avoid very cold or windy days/nights. Cold weather requires that the engine be run longer for the engine to reach optimum operating temperature.
2. The battery must be in good condition. A weak or low voltage battery causes many fuel-injected engines to run too rich (too much fuel) resulting in excessive carbon-monoxide (CO) emissions.
3. Change engine oil before having the vehicle tested. Dirty or contaminated oil increases exhaust emissions.
4. When fueling your vehicle do not overfill the gas tank. After the nozzle "clicks off," only add fuel to the next dime's worth. If the gas tank is overfilled, liquid gasoline can be drawn into the engine through the canister purge system during the test.
5. Use premium grade gasoline (low-sulfur, if available) to help prevent excessive NOx exhaust emissions.
6. **Drive 20 miles before having the vehicle tested** to ensure that the engine oil, engine coolant, and catalytic converter are at normal operating temperature**.**
7. While waiting for the inspection, place the gear selector in "park" or "neutral" and keep the engine running at a fast idle (about 2500 RPM).
8. Before testing begins, turn the air conditioning/heating or defroster to the off position to prevent the air conditioning compressor from engaging during the test thereby preventing an additional load on the engine.
9. If you own a locking gas cap, make sure you have the key with you.
10. If your vehicle’s MIL (malfunction indicator light) or the check engine light is on, have your technician check the vehicle’s computer system before the test.
11. Make sure your tires are properly inflated. Tires that are unevenly inflated, under inflated, worn, or mismatched (emergency spares) may make the vehicle difficult to test.