PRACTICE EXAM 18: A9 LIGHT VEHICLE DIESEL ENGINES SIMULATION (60 QUESTIONS)

1. A diesel intermittently lacks power and the technician cannot duplicate the complaint on a test drive. The BEST resource for narrowing the cause is:

A. immediately replacing the fuel filter

B. the stored freeze-frame and live data

C. a static compression test only

D. clearing all codes and releasing it

2. A common-rail diesel builds normal rail pressure at idle but cannot reach commanded pressure under full load, and supply pressure is good. The MOST likely cause is a:

A. biased intake air temperature sensor

B. stuck-open exhaust gas recirculation valve

C. contaminated mass airflow sensor

D. high-pressure pump worn low on volume

3. A rebuilt diesel develops a knock at crankshaft speed under load, and inspection finds the wear was caused by misalignment. The MOST likely culprit is a:

A. worn camshaft lobe

B. stretched timing chain

C. warped cylinder head

D. bent connecting rod

4. A valve burns within a few thousand miles of a head rebuild. Of the following, the MOST likely overlooked cause is:

A. insufficient valve margin after grinding

B. excessive valve-spring installed height

C. a high fuel cetane number

D. reduced cylinder bore taper

5. On a diesel with hard cold starts only, the fuel-related factor MOST worth checking is the:

A. fuel return cooler efficiency

B. fuel/water separator capacity

C. fuel cetane number and quality

D. tank vent breather restriction

6. A diesel shows low oil pressure hot at idle, normal when cold, with no noise. The MOST likely cause is:

A. a pressure-relief valve stuck open

B. worn bearings as the hot oil thins

C. a plugged piston oil-cooling jet

D. an aerated, overfilled crankcase

7. A diesel running ULSD shows premature high-pressure pump scoring. The MOST likely fuel-related cause is:

A. inadequate fuel lubricity

B. excessive fuel cetane rating

C. high fuel energy density

D. elevated fuel sulfur level

8. All of the following can reduce turbocharger boost EXCEPT a:

A. leaking charge-air cooler core

B. carbon-bound VGT vane set

C. restricted, plugged particulate filter

D. faulty injector calibration code

9. A diesel injector returns far more fuel than its neighbors on a leak-off test. This identifies a:

A. correctly sealing new injector

B. plugged engine air filter element

C. worn injector leaking internally

D. stuck-closed EGR cooler valve

10. A turbo-diesel shows blue smoke and oil in the intake, and the charge-air cooler holds pressure. The MOST likely source is the:

A. engine air filter housing seal

B. turbocharger compressor seals

C. EGR cooler coolant-side passage

D. intake throttle actuator shaft

11. A diesel piston shows one-sided scuffing and a discolored crown. The MOST likely lubrication-related cause is a:

A. blocked piston oil-cooling jet

B. leaking water-pump shaft seal

C. thermostat stuck wide open

D. radiator clogged on the outside

12. A seat ground far too wide on a diesel valve will MOST likely produce:

A. greater valve-spring installed height

B. increased effective camshaft lobe lift

C. poor seating pressure and heat transfer

D. excessive valve-guide-to-stem clearance

13. A diesel cranks but will not start, rail pressure stays at zero, and supply is confirmed good. The technician should next inspect the:

A. glow plug control circuit

B. intake air heater relay

C. exhaust back-pressure sensor

D. injectors and rail pressure-control valves

14. Two technicians discuss a diesel sensor code. Technician A says the named sensor should be replaced first. Technician B says the wiring and connector should be tested first. Who is correct?

A. Technician A only

B. Technician B only

C. Both Technicians A and B

D. Neither Technician A nor B

15. A diesel vibration changes with engine rpm but not road speed, even while the vehicle is stationary. This isolates the source to the:

A. engine itself

B. drive axle and wheels

C. transmission output shaft

D. tire and wheel balance

16. An SCR-equipped diesel shows the upstream and downstream NOx sensors reading nearly the same. The MOST likely meaning is:

A. fully effective NOx reduction

B. an overfilled DEF storage tank

C. poor NOx conversion from a fault

D. excessive turbocharger boost

17. A diesel stalls intermittently with bubbles visible in a clear supply-line section. The MOST likely cause is a:

A. excessively high common-rail pressure

B. suction-side air leak in the supply

C. overcharged battery condition

D. stuck variable-geometry turbo vane

18. A bore gauge shows the cylinder larger at the top of ring travel than at the bottom. This condition is called:

A. out-of-round at a single depth

B. main bearing running clearance

C. connecting-rod side clearance

D. bore taper

19. A pilot injection delivered before the main event on a common-rail diesel primarily serves to:

A. soften the pressure rise and reduce noise

B. burn off ash in the particulate filter

C. cool the SCR catalyst before dosing

D. raise rail pressure during cranking

20. A diesel shows milky oil and rising coolant after operation. The MOST likely internal leak is in the:

A. low-pressure fuel pump body

B. turbocharger center housing

C. oil-to-coolant oil cooler

D. high-pressure fuel rail

21. A water-in-fuel lamp comes on for a diesel. The correct first response is to:

A. replace the high-pressure pump

B. drain the fuel/water separator

C. raise the commanded rail pressure

D. reprogram all the fuel injectors

22. A charge-air cooler raises power and lowers combustion temperature primarily by:

A. cooling compressed air to raise its density

B. raising exhaust heat for regeneration

C. filtering abrasive particles from the air

D. recirculating exhaust into the intake

23. A diesel produces white smoke and runs rough only on cold start, clearing once warm. If fuel-related, the cause is MOST likely:

A. excessive common-rail pressure

B. an overcharged battery condition

C. a stuck exhaust gas recirculation valve

D. low cetane causing ignition delay

24. To separate an air-side from a fuel-side cause of black smoke with low boost, the technician compares actual boost to the:

A. engine coolant temperature

B. battery terminal voltage

C. commanded boost value

D. DEF tank fluid level

25. A new common-rail injector tests good but the cylinder still runs rough with a balance code. The technician MOST likely failed to:

A. program the injector calibration code

B. flush the engine cooling system

C. replace the low-pressure lift pump

D. bleed the air from the coolant

26. Repeated resurfacing of a diesel cylinder head risks excessive stock removal, which can:

A. alter piston-to-valve clearance and timing

B. raise the valve-spring free length

C. increase the fuel cetane requirement

D. reduce the cylinder bore diameter

27. A diesel loses power under load with rail pressure normal but injection quantity limited by smoke control. The system limiting fuel is using data from the:

A. coolant temperature sensor

B. mass airflow (air mass) sensor

C. battery voltage monitor

D. exhaust back-pressure sensor

28. A variable-geometry turbocharger can deliberately raise exhaust back-pressure and temperature to support:

A. low-pressure fuel delivery

B. cold-cranking of the engine

C. battery charging at idle

D. filter regeneration and exhaust braking

29. A main bearing shows a wiped, heat-discolored surface with no embedded grit. This MOST likely resulted from:

A. abrasive dirt carried in the oil

B. fatigue from heavy combustion loads

C. loss of lubrication or oil film

D. correct clearance and a good film

30. A diesel's low-pressure supply tests below specification. The MOST likely result is:

A. inability to build proper rail pressure

B. overcharged starting batteries

C. excessively low coolant temperature

D. a stuck-open exhaust gas recirculation valve

31. A diesel knock occurs at crankshaft speed and worsens with load. This MOST likely points to the:

A. valve-train rocker arms

B. connecting-rod or main bearings

C. turbocharger center section

D. accessory drive belt tensioner

32. An electronic unit injector (EUI) develops its high injection pressure by being:

A. fed from a shared common rail

B. driven by high-pressure engine oil

C. supplied by the lift pump alone

D. driven mechanically by a camshaft lobe

33. A plugged diesel particulate filter most directly affects the turbocharger by:

A. increasing the alternator output

B. raising the fuel supply pressure

C. raising back-pressure and cutting boost

D. overcooling the intake air charge

34. A diesel runs cold, makes white smoke, and fails regeneration. The MOST likely cooling-system cause is a:

A. thermostat stuck in the open position

B. water-pump seal leaking externally

C. radiator clogged on the outside

D. head gasket leaking combustion gas

35. Biodiesel can plug a fuel filter shortly after a switchover because it:

A. raises the fuel's sulfur content

B. loosens existing deposits as a solvent

C. lowers injection pressure permanently

D. cannot pass through a standard filter

36. Excessive valve lash on a diesel will MOST likely produce:

A. continuously burned exhaust valves

B. low common-rail fuel pressure

C. coolant loss from the weep hole

D. valve-train noise and reduced lift

37. A diesel cylinder head is checked for warpage with a straightedge and feeler gauge. A measurable gap means the head:

A. has excessive valve-guide wear

B. needs new valve springs only

C. is warped and requires machining

D. has reduced camshaft lobe lift

38. A diesel oxidation catalyst (DOC) supports active regeneration mainly by:

A. oxidizing hydrocarbons to make heat

B. dosing diesel exhaust fluid into the flow

C. trapping the soot particles physically

D. recirculating exhaust to the intake

39. A return-line fuel cooler is fitted to a diesel to:

A. raise the fuel's cetane rating

B. separate water from the fuel

C. add lubricity additives to the fuel

D. shed heat from the hot returning fuel

40. A vague "lacks power" complaint with no detail should FIRST be handled by:

A. replacing the most likely worn part

B. defining when and how it occurs

C. clearing all of the stored trouble codes

D. estimating the repair's resale impact

41. A diesel fault appears only on cold mornings. The data MOST useful for reproducing it is the:

A. total vehicle mileage

B. repair labor estimate

C. freeze-frame operating conditions

D. recorded tire-pressure log

42. Connecting-rod side clearance is correctly measured with a:

A. feeler gauge between rod and crank cheek

B. micrometer on the rod journal

C. bore gauge in the rod big end

D. dial indicator on the piston crown

43. A diesel loses power only under heavy flow while idle rail pressure is normal. This MOST likely indicates a:

A. rail-pressure sensor biased high

B. stuck-open exhaust gas recirculation valve

C. contaminated mass airflow sensor

D. worn high-pressure pump short on volume

44. On a diesel, the mass airflow sensor is used heavily to control EGR flow and to:

A. set the coolant temperature target

B. smoke-limit fueling by air mass

C. regulate the alternator output

D. control the starter cranking current

45. The cold filter plugging point of diesel fuel is the temperature at which:

A. the fuel ignites without a spark

B. lubricity reaches its maximum value

C. wax begins to plug the filter

D. all sulfur leaves the fuel

46. Low-SAPS engine oil is specified on after-treatment diesels chiefly to:

A. protect the particulate filter and catalysts

B. raise the fuel's cetane number

C. increase the coolant boiling point

D. remove the need for oil-cooling jets

47. The low-pressure lift pump's main role in a diesel fuel system is to:

A. atomize the fuel inside the cylinder

B. store high-pressure fuel for the injectors

C. cool the SCR catalyst during dosing

D. supply adequate fuel to the high-pressure pump

48. Aggressive abrasive discs on an aluminum cylinder head are avoided because they can:

A. raise the valve-spring installed height

B. increase the camshaft lobe lift

C. remove metal and ruin flatness

D. lower the fuel's cetane number

49. A wastegate on a fixed-geometry turbo limits maximum boost by:

A. cooling the compressed intake air

B. bypassing exhaust around the turbine

C. filtering the incoming air charge

D. recirculating exhaust to the intake

50. Selective catalytic reduction (SCR) consumes diesel exhaust fluid to convert NOx into:

A. carbon monoxide and soot

B. sulfur dioxide and water

C. trapped particulate matter

D. nitrogen and water vapor

51. A diesel trouble code names a circuit. The professional interpretation is that the code:

A. identifies a circuit, not always a failed part

B. always names the exact failed part

C. requires immediate part replacement

D. records the repair's dollar cost

52. Cetane number describes a diesel fuel's:

A. resistance to autoignition

B. energy content per gallon

C. readiness to autoignite

D. sulfur concentration level

53. A diesel particulate filter accumulates a residue regeneration cannot burn, which comes mainly from:

A. soot formed during combustion

B. ash from engine oil additives

C. condensed exhaust water vapor

D. unburned post-injection fuel

54. During bottom-end reassembly, the crank is rotated by hand after each torque step to:

A. seat the piston rings to the bores

B. prime the high-pressure fuel pump

C. set the camshaft-to-crank timing

D. detect any binding before startup

55. A thermostat stuck closed on a diesel will MOST likely cause:

A. cold running and white smoke

B. oil and coolant mixing internally

C. engine overheating

D. low oil pressure when cold

56. Coolant dripping from the water-pump weep hole indicates a failed:

A. radiator pressure cap

B. thermostat housing gasket

C. water-pump shaft seal

D. cylinder head gasket

57. Multiple injection events per cycle on a common-rail diesel are used mainly to:

A. reduce combustion noise and emissions

B. separate water from the fuel

C. cool the after-treatment system

D. charge the batteries at idle

58. A variable-geometry turbo gives low boost off idle with carbon-coated vanes. The MOST likely cause is:

A. a cracked charge-air cooler core

B. a failed low-pressure lift pump

C. a thermostat stuck open

D. carbon binding the variable vanes

59. A main bearing surface with embedded grit and fine scratches indicates:

A. oil starvation and film loss

B. abrasive dirt carried in the oil

C. fatigue from heavy combustion loads

D. correct clearance and a strong film

60. A diesel idles smoothly but stumbles under acceleration as rail pressure drops below command. The technician should suspect the:

A. intake air temperature sensor

B. high-pressure pump or pressure control

C. glow plug control module

D. exhaust back-pressure sensor

PRACTICE EXAM 18 — ANSWER KEY (Questions 1–60)

1. B — Stored freeze-frame and live data capture the conditions present when the fault occurred, making them the best tool for a complaint that won't duplicate. They let the technician work from recorded evidence rather than guesswork. This is especially valuable for intermittent faults.

2. D — A high-pressure pump worn low on volume keeps up at idle but cannot maintain commanded pressure under full load, so power falls. The shortfall appears only with high demand. Comparing commanded to actual pressure across load isolates the pump.

3. D — Wear traced to misalignment in a rebuilt engine points to a bent connecting rod, which cocks the piston and journal and loads them unevenly. The misalignment drives the knock and one-sided wear. Checking rod straightness during a rebuild prevents this.

4. A — A valve that burns soon after a rebuild most often had insufficient margin after grinding, leaving too thin an edge to shed heat. The thin edge overheats and burns. Verifying adequate margin protects the new valve.

5. C — Hard cold starts point to fuel cetane number and quality, since higher cetane shortens ignition delay for easier cold starting. Low cetane lengthens the delay. Cetane is the fuel property most tied to cold-start behavior.

6. B — Low oil pressure only when hot at idle points to worn bearings whose clearance lets the thinned hot oil escape faster. Cold, thicker oil masks the wear. Bearing clearance controls hot idle pressure.

7. A — Premature high-pressure pump scoring on ULSD points to inadequate fuel lubricity, since removing sulfur lowers natural lubricity. Lubricity additives normally compensate. Low-lubricity fuel rapidly wears precision pump parts.

8. D — Low boost is an air-system condition; a faulty injector calibration code is a fueling item and does not reduce boost. A leaking cooler, sticking vanes, and a plugged filter all genuinely lower boost. Recognizing which faults belong to the air side keeps diagnosis on track.

9. C — A cylinder returning far more fuel on a leak-off test has a worn injector leaking internally. The excess return isolates the failing unit. The test pinpoints the bad injector without disassembly.

10. B — With the charge-air cooler holding pressure, blue smoke and intake oil point to leaking turbocharger compressor seals pushing oil into the charge air. The turbo is the source. Finding oil with an intact cooler directs diagnosis to the turbo.

11. A — One-sided piston scuffing with a discolored crown points to a blocked piston oil-cooling jet letting that piston overheat. The jet normally carries heat from the piston underside. Clearing the jets prevents recurrence.

12. C — A seat ground too wide reduces unit seating pressure and can trap carbon, hurting sealing and heat transfer. Correct width concentrates contact for a tight seal. This is why seat width is held to specification.

13. D — Zero rail pressure with confirmed good supply points to the injectors and rail pressure-control valves failing to let the rail charge. Excessive leak-off or a non-responsive control valve bleeds the pressure. These components are inspected next.

14. B — Technician B is correct that wiring and connectors should be tested first, because a code names a circuit, not a confirmed part. Technician A is wrong to replace the sensor first. Testing before replacing prevents installing an unneeded part.

15. A — A vibration that changes with engine rpm but not road speed, even at a standstill, originates in the engine itself. Driveline vibrations track road speed instead. Correlating to engine versus road speed localizes the source.

16. C — A downstream NOx sensor nearly equal to the upstream sensor shows little NOx is being converted, indicating a dosing or SCR catalyst fault. Effective reduction would show a much lower downstream value. The two-sensor comparison measures conversion efficiency.

17. B — Bubbles in the supply line with intermittent stalling indicate a suction-side air leak drawing air into the fuel. The air disrupts delivery. Sealing the suction side restores smooth running.

18. D — A bore larger at the top of ring travel than the bottom is taper, caused by the greatest wear where combustion heat and pressure are highest. The top-to-bottom difference is the taper value. It determines whether the bore can be honed or must be bored.

19. A — A pilot injection introduces a small charge before the main event to soften the rapid pressure rise and reduce combustion noise. Common-rail pressure control enables it. It is a noise- and emissions-control strategy.

20. C — Milky oil with rising coolant points to an internal leak in the oil-to-coolant oil cooler mixing the two fluids. The cooler is a common internal crossover point. Pressure-testing it confirms the leak.

21. B — A water-in-fuel lamp means the separator has collected water that must be drained before it reaches the injection system. Draining removes the damaging contaminant. Ignoring it risks corrosion of high-pressure parts.

22. A — A charge-air cooler cools the compressed intake air to raise its density, packing more oxygen into the cylinder for more power and lower combustion temperature. It works on intake air, not exhaust. Denser air is the reason intercooling improves output.

23. D — Cold-start white smoke that clears with warmth, if fuel-related, points to low cetane causing ignition delay and incomplete combustion until warm. Higher cetane shortens that delay. Cetane directly governs cold-start behavior.

24. C — Comparing actual boost to the commanded value separates an air-side from a fuel-side cause of black smoke. A gap points to the air system; a match shifts suspicion to fueling. This comparison directs diagnosis efficiently.

25. A — A new injector that runs rough with a balance code despite testing good was installed without programming its calibration code. The ECM cannot compensate for the injector's flow variation without it. Programming the code resolves the rough running.

26. A — Excessive stock removal from repeated resurfacing raises the deck and alters piston-to-valve clearance and cam timing. This can cause interference or timing errors. Tracking total stock removed prevents the problem.

27. B — Smoke-limited fueling uses the mass airflow (air mass) sensor to cap fuel to the available air, so a power limit under load traces to that air-mass data. The ECM matches fuel to measured air. A contaminated MAF skews the limit.

28. D — A variable-geometry turbo can close its vanes to raise exhaust back-pressure and temperature on command, supporting both filter regeneration and exhaust braking. This dual capability is unique to VGTs. It links the air system to after-treatment and braking.

29. C — A wiped, heat-discolored bearing with no embedded grit indicates the oil film broke down from lost lubrication. Dirt contamination would instead embed grit and scratch. Reading the pattern identifies oil-film failure.

30. A — Low low-pressure supply starves the high-pressure pump, so it cannot build proper rail pressure, causing hard starting and low power. The pump can only pressurize what it is fed. Supply is checked before suspecting high-pressure parts.

31. B — A knock at crankshaft speed that worsens with load points to the connecting-rod or main bearings, since load increases the force on a loose bearing. Valve-train noise instead occurs at half crank speed. Load and timing localize the source.

32. D — Electronic unit injectors generate high pressure mechanically, driven by a camshaft lobe under electronic control. They use neither a shared rail nor high-pressure oil. Identifying this architecture shapes the diagnostic approach.

33. C — A plugged particulate filter raises exhaust back-pressure that starves the turbine, cutting turbocharger boost. The restriction limits the turbo's drive energy. This places a plugged DPF on the low-boost differential.

34. A — An engine that runs cold with white smoke and failed regenerations points to a thermostat stuck open, never reaching operating temperature. That is the defining clue. The other choices cause overheating or external leaks.

35. B — Biodiesel's solvent effect loosens existing deposits, and that debris plugs the filter shortly after a switchover. It does not raise sulfur or block all filtration. Anticipating early filter plugging is part of servicing biodiesel.

36. D — Excessive valve lash creates valve-train noise and reduces effective valve lift and duration, hurting breathing. The extra clearance delays valve opening. Correct lash restores proper performance.

37. C — A measurable gap under a straightedge across the deck means the head is warped and requires machining. The feeler gauge measures the gap against the limit. This determines whether the head can be reused.

38. A — The diesel oxidation catalyst supports active regeneration by oxidizing hydrocarbons to generate the heat that burns soot in the filter. It also converts CO and HC. Its heat-generating role is essential to regeneration.

39. D — A return-line fuel cooler sheds heat from fuel returning hot from the high-pressure system, protecting tank and pump parts and maintaining fuel density. Excess fuel heat can damage components. The cooler manages return-fuel temperature.

40. B — A vague complaint must first be defined by establishing when and how it occurs so it can be reproduced and later confirmed repaired. A reproducible fault is diagnosable. Defining the symptom prevents guesswork.

41. C — Freeze-frame data records the conditions present when the code set, which is most useful for reproducing a cold-morning-only fault. It is a diagnostic snapshot. This makes intermittent faults far easier to recreate.

42. A — Connecting-rod side clearance is measured with a feeler gauge between the rod and the crankshaft cheek. Micrometers and bore gauges measure journal or bore dimensions instead. Correct side clearance ensures proper rod lubrication and movement.

43. D — Rail pressure that holds at idle but drops under heavy flow points to a worn high-pressure pump short on volume. The wear is masked at low demand. Comparing commanded and actual pressure across load isolates the pump.

44. B — On a diesel the mass airflow sensor controls EGR flow and smoke-limits fueling based on the actual air mass. A contaminated MAF disturbs both functions. It does not set coolant temperature or charging.

45. C — The cold filter plugging point is the temperature at which wax crystals begin to plug the fuel filter, governing cold-weather operability. Below it the engine is starved. Winter fuel and a heater address this property.

46. A — Low-SAPS oil limits ash, phosphorus, and sulfur to protect the particulate filter and catalysts from contamination and plugging. The correct oil preserves after-treatment life. The wrong oil accelerates ash loading.

47. D — The low-pressure lift pump's main role is to supply adequate fuel to the high-pressure pump so it can build rail pressure. The injectors, not the lift pump, atomize the fuel. Inadequate supply causes hard starting and low power.

48. C — Aggressive abrasive discs can remove metal from an aluminum head and ruin the flatness needed to seal, especially with MLS gaskets. Preserving flatness and finish protects the seal. Careful cleaning avoids ruining the head.

49. B — A wastegate limits maximum boost on a fixed-geometry turbo by bypassing exhaust around the turbine so it cannot overspeed. It is an exhaust-side control. This protects the engine from overboost.

50. D — Selective catalytic reduction uses ammonia from DEF to convert NOx into harmless nitrogen and water vapor. It is the primary NOx-control technology on modern diesels. Proper dosing and catalyst function are required for compliance.

51. A — A trouble code identifies a circuit, not always a failed part, so the circuit must be tested before replacing anything. Wiring and the monitored system can set the code. This interpretation prevents needless part replacement.

52. C — Cetane number measures the fuel's readiness to autoignite; higher cetane shortens ignition delay for smoother starting and combustion. It is the opposite of gasoline octane, which resists ignition. Cetane governs cold-start and noise behavior.

53. B — Ash that regeneration cannot burn comes mainly from engine oil additives, gradually filling the particulate filter. Unlike soot, it is not combustible. Low-SAPS oil slows this accumulation.

54. D — Rotating the crank by hand after each torque step detects any binding before startup, catching a misassembly early. A bind found by hand is far cheaper than one found running. This is standard reassembly discipline.

55. C — A thermostat stuck closed blocks coolant flow to the radiator, causing the engine to overheat. The trapped heat cannot escape. This is the opposite of a stuck-open thermostat, which runs cold.

56. C — Coolant weeping from the water-pump weep hole is the designed indication of a failed pump shaft seal. The hole signals seal failure. Replacing the pump restores cooling-system integrity.

57. A — Multiple injection events per cycle in a common-rail system are used mainly to reduce combustion noise and emissions while improving combustion quality. Stored rail pressure enables this flexibility. These events are a defining advantage of common rail.

58. D — Low boost off idle with carbon-coated vanes indicates carbon binding the variable vanes so they cannot close to build boost early. Sticking vanes are a common VGT fault. Cleaning or replacement restores boost response.

59. B — Embedded grit and fine scratches across a bearing face indicate abrasive dirt contamination carried in the oil. A wiped, heat-discolored surface would instead mean oil starvation. Reading the pattern identifies the root cause.

60. B — An idle-smooth diesel that stumbles under acceleration with dropping rail pressure points to the high-pressure pump or pressure control failing to keep up with demand. The shortfall appears under load. Comparing commanded and actual pressure isolates the fault.