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Preventive Maintenance Checklist

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PREVENTION MAINTENANCE CHECKLIST FOR TRACTORS, TRUCKS, AND AUTOMOBILES

Farm Machinery Fact Sheet FM-21

By Dr. Von H. Jarrett, Extension Agricultural Engineer

Systematic sequence for inspection—GASOLINE AND DIESEL

(Check when done) UNDER THE HOOD

1. Locate operator's manual for vehicle.
2. Fuel, oil, and exhaust leaks—Inspect.
3. Oil and fuel lines—Examine for chafing and kinks.
4. Automatic transmission—Inspect oil level; also, standard transmission.
5. Radiator core, water pump, cylinder head, block, heater, hoses and connections. Inspect for leaks.
6. Power steering pump reservoir—Check fluid level, inspect for leaks, add if required.
7. Inspect all belts, condition and adjustment.
8. Electrical connections and mounting bolts of starter, generator, alternator—Tighten.
9. Generator commutator and brushes—Inspect.
10. Alternator, generator and regulator—Test and adjust with voltmeter.
11. Steering gear housing—Inspect lubricant level.
12. Steering gear housing bolts—Tighten.
13. Clutch and/or brake master cylinder Inspect fluid level—add?
14. Battery—Remove cables, clean terminals, reinstall cables, coat with petroleum jelly.
 POS NEG Posts
15. Battery—Test cells specific gravity with hydrometer.
 Cells 1 2 3 4 5 6
16. Battery—Examine level of each cell, add distilled water if required.
17. Radiator—Inspect coolant level and add water or antifreeze solution if required.
18. Radiator coolant—Inspect for signs of oil or combustion leakage.
19. Cooling system—Pressure test.
20. Engine oil—Inspect level. Change if at change period or add.
21. Air cleaner—Clean.
22. Air compressor—Adjust, cut in psi; cut out psi; tighten mounting.

Gas only

- ___ 23. Crankcase breather and oil filler cap air cleaner—Clean and/or replace.
- ___ 24. Fuel filter—Clean or replace (replace paper element always).
- ___ 25. Carburetor air cleaner—Clean or replace.
- ___ 26. Spark plugs—Remove, inspect, clean or replace and gap. Torque with new gaskets.
- ___ 27. Distributor—Inspect contacts for corrosion and cap for cracks. Inspect wiring condition and points, inspect rotor for burning/cracks.
- ___ 28. Cylinder compression—Test and record:
Dry 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___ 7 ___ 8
Wet 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___ 7 ___ 8
- ___ 29. Manifolds—Inspect for leaks, tighten nuts, with engine at normal operating temperature.
- ___ 30. Cylinder head bolts—Torque.
- ___ 31. Positive crankcase ventilator valve—Remove, clean or replace.
- ___ 32. Valves—Run engine at proper idle, inspect overhead system and, adjust valve lash if required.
- ___ 33. Valve cover gasket—Replace.
- ___ 34. Carburetor—Adjust idle mixture and RPM.
- ___ 35. Ignition timing—Set with light.
- ___ 36. Use tachometer and record top engine RPM.

Diesel only

- ___ 37. Radiator shutters—Inspect to see they are open before starting engine and close as air pressure builds up after starting engine.
- ___ 38. Shutter-stat—Lubricate.
- ___ 39. With engine operating at proper temperature—Tighten exhaust manifold and exhaust pipe flange nuts. Tighten air inlet system hose clamps. Inspect for leaks.
- ___ 40. Air box drains and crankcase breather tubes—With engine running, see that they are open.
- ___ 41. Primary and/or secondary fuel filters—Open petcock and drain water.
- ___ 42. Fuel return line—Disconnect at tank or other convenient place. Run engine at ___ RPM. Fuel return should be approx. ___ quarts per minute. Observe fuel for appearance of air bubbles or gases.
- ___ 43. Primary fuel filter—Clean. Secondary fuel filter—Replace if at change period.
- ___ 44. Engine and oil cooler lines—Inspect for leaks.
- ___ 45. High pressure lines and clamps—Inspect, tighten or replace.
- ___ 46. Fuel jumper lines—Tighten if required.
- ___ 47. Valves—Inspect for proper clearance. (LASH.)
- ___ 48. Injector nozzles—Inspect and clean as required, set cracking pressure.
- ___ 49. Injectors—Check and adjust for proper height setting. Inspect overhead system and adjust rack.
- ___ 50. Air cleaners—Clean and refill reservoir with engine oil.
- ___ 51. Emergency stop control—Test with engine off.
- ___ 52. Throttle, accelerator, shut-off and choke controls—Test operations.
- ___ 53. High idle speed setting—Test and record ___ RPM. Low idle speed setting and record ___ RPM.

- ____ 54. Check on a dynamometer.
PTO RPM's ____ High Idle ____ Rated ____ Horsepower

WALK-AROUND

- ____ 1. Front sheet metal, paint and bumper—Inspect for appearance/accident.
____ 2. Front lights and directional signals—Inspect.
____ 3. Left front tire—Inspect for cuts or unusual wear, torque wheel nuts.
____ 4. Left-hand side of cab—Inspect for appearance and condition.
____ 5. Left-side door hinges and latch—Lubricate, adjust if necessary. Window regulators and vents—Test operation.
____ 6. Fuel tank mountings—Tighten if required.
____ 7. Battery—Examine box cover clamps; inspect level of each cell.
____ 8. Left-side of body and frame—Inspect for appearance and condition.
____ 9. Left-rear tires—Examine for cuts or signs of unusual wear. Torque wheel and axle flange nuts.
____ 10. Fifth-wheel mountings—Tighten if required.
____ 11. Rear of vehicle—Inspect for appearance and condition.
____ 12. Cab sheet metal—Inspect for appearance and condition.
____ 13. Right rear tires—Examine for cuts or signs of unusual wear. Torque wheel and axle flange nuts.
____ 14. Right side of body and frame—Inspect for appearance and condition.
____ 15. Right side door hinges and latch—Lubricate, adjust if necessary. Window regulators and vents—test operation.
____ 16. Right front tire—Examine for cuts or unusual wear. Torque wheel nuts.
____ 17. Front ball joints—Inspect on both wheels for excessive looseness.
____ 18. Front kingpins and bearings—Inspect on both wheels for looseness.
____ 19. Front brake linings, anchors, locks, wheel cylinders and drums—Inspect, blow out drums and shoes. Lubricate shoe anchors and cams—wedge-type brakes, clean and lubricate actuating components.
____ 20. Front wheel bearings—Clean, repack and adjust for both front wheels. Replace grease retainer.
____ 21. Rear brake linings, anchors, locks, wheel cylinders and drums—Inspect. Blow out drums and shoes, lubricate shoe anchors and cams; wedge-type brakes—clean and lubricate actuating components. Adjust as required.
____ 22. Wedge-type brake systems—Remove brake drums, clean and lubricate adjusting components.
____ 23. Rear wheel bearings—Clean, repack and adjust. Replace grease retainer.
____ 24. Front wheel caster and camber—Inspect to see that it is within specifications.
____ 25. Toe-in—Adjust as required.

UNDER VEHICLE

- ____ 1. Chassis—Lubricate according to correct lubricating chart.
____ 2. Front tires—Examine for cuts or unusual wear.
____ 3. Front springs—Inspect for shackle looseness and wear. Inspect leaves for breakage and misalignment.
____ 4. Pitman and steering arms, drag link and tie rod—Inspect.
____ 5. Power steering cylinder—Inspect for leaks.

- ___ 6. Propeller shaft—Inspect, including all brackets, flanges, hangers and center bearings.
- ___ 7. Rear springs—Inspect for loose or worn shackles, broken or misaligned leaves.
- ___ 8. Engine oil—Replace oil, filter element and gasket at change period.
- ___ 9. Engine pan gasket, front and rear crankshaft seals—Inspect.
- ___ 10. Engine mounts—Inspect for deterioration or looseness.
- ___ 11. Clutch controls—Examine for any abnormal condition. Inspect clearance and adjustment.
- ___ 12. Front U-bolts—Tighten to specifications.
- ___ 13. Transmission—Inspect for leaks. Inspect the lubricant level. Add?
- ___ 14. Automatic transmission cooler lines—Inspect for leakage.
- ___ 15. Automatic transmission linkage—Adjust.
- ___ 16. Transmission support and strut rod—Adjust if required.
- ___ 17. Driveline-type parking brake—Inspect lining condition and adjust.
- ___ 18. Auxiliary or transfer case—Inspect for leaks. See that breathers are not restricted. Tighten rear bearing retainer bolts.
- ___ 19. Transmission; auxiliary or transfer case linkage pivot points—Lubricate.
- ___ 20. Center bearing, brackets, U-joints and flanges—Tighten as required.
- ___ 21. Rear axle—Inspect lubricant level, add if required. Clean breather.
- ___ 22. Rear axle differential housing—Inspect for lubricant leakage and pinion bearings for looseness. See that axle breather is free of dirt.
- ___ 23. Rear tires—Examine for cuts and unusual wear.
- ___ 24. Rear axle carrier housing and pinion cage bolts—Tighten.
- ___ 25. Rear U-bolts—Tighten to specifications.
- ___ 26. Air brake valve clevis pin—Lubricate.
- ___ 27. Brake hoses, lines, valves, chambers, etc.—Inspect for leaks. Examine cross shaft, cables, linkage for abnormal wear.
- ___ 28. Air tanks—Drain.
- ___ 29. Frames and crossmembers—Examine.
- ___ 30. Exhaust pipe, muffler, tailpipe and hanger brackets—Inspect.
- ___ 31. Cab hold-down-bolt insulators—Inspect, tighten bolts if required.
- ___ 32. Body mounts—Tighten if required.

CAB/DRIVER ITEMS

- ___ 1. Cab interior—Inspect for appearance and condition.
- ___ 2. Seat adjustment—Operate. Inspect seat cushions.
- ___ 3. Window regulators and wing vents—Operate.
- ___ 4. Mirrors—Inspect for cracks, discoloration and tightness.
- ___ 5. All lights, horn, tell-tale lights and dash instruments—Test.
- ___ 6. Wipers—Inspect for correct operation and wear. Adjust, repair or replace as necessary.
- ___ 7. Washers—Operate.
- ___ 8. Radio; heater and directional signals—Operate.
- ___ 9. Steering wheel—Inspect steering gear play.
- ___ 10. Service brake pedal—Test for action and adequate reserve.
- ___ 11. Parking brake—Test for action and adequate reserve.
- ___ 12. Transmission lever—Shift through all gear positions.
- ___ 13. Clutch pedal—Test for action and adequate free play.
- ___ 14. Fire extinguisher—Inspect for leakage and secure mounting.

- _____ 15. Fire extinguisher—Refill or recharge if needed.
- _____ 16. Tools—See that those regularly assigned are in the vehicle.
- _____ 17. Engine emergency stop—Test with engine off.
- _____ 18. Throttle and accelerator controls—Test for binding.
- _____ 19. Choke—Test for binding.
- _____ 20. Seat belts—Securely anchored and in good condition.

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