PREVENTIVE MAINTENANCE INSPECTION
Course Syllabus

Course Number: TRUK-0056      OHLAP Credit: No
OCAS Code: None
Course Length: 60 Hours
Career Cluster: Transportation, Distribution, and Logistics
Career Pathway: Medium/Heavy Diesel Truck Repair
Career Major(s): Diesel Service Technician

Pre-requisite(s):

Course Description: This course teaches students the importance of a good preventive maintenance program, the various inspection procedures, federal regulations to be followed, and the necessity of keeping correct documentation.

Textbooks/Materials:
PTTTS Truck Web-Bases Training Online Courses

Course Objectives:

A. Listen to and verify the operator's concern, review past maintenance and repair documents, and determine necessary action. (Preventative Maintenance Inspection – VII)

B. Discuss Procedures for a Preventive Maintenance Inspection.
   1. Comply with personal and environmental safety practices associated with clothing; eye protection; hand protection; proper lifting practices; hand tools; power equipment; proper ventilation; and the handling, storage, and disposal of fuels/chemicals/materials in accordance with federal, state, and local regulations. (Preventive Maintenance Inspection – VII)
   2. Discuss the importance of a good preventive maintenance program.
   3. List various inspection procedures and explain federal regulations.
   4. Explain the necessity of keeping good records.
   5. Verify operators complaints, review past maintenance documents; determine needed repairs.
   6. Identify various lubricants used in a preventive maintenance program.
   7. Describe the operation of on-board chassis lubrication systems.
   8. Explain the PM program of winterizing heavy-duty trucks.

   1. Inspect fluid reservoirs for correct levels.
   2. Check engine oil level; check engine for oil, coolant, and fuel leaks (engine off). (P1-VII.A.1.4)
   3. Check mounts (alternator, air conditioning compressor, starter, engine, and air compressor) for looseness and deterioration. (P1-VII.A.1.5)
   4. Inspect belts, tensioners and pulleys; check and adjust belt tension; check belt alignment. (P1-VII.A.1.3)
5. Check engine starting/operation (including unusual noises, vibrations, exhaust smoke, etc.); record idle and governed rpm. (P1-VII.A.1.1)
6. Check electrical wiring, routing, and hold-down clamps, including Engine Control Module/Powertrain Control Module (ECM/PCM). (P1-VII.A.1.7)
7. Check vibration damper. (P1-VII.A.1.2)
8. Check engine for oil, coolant, air, fuel, and exhaust leaks (engine running). (P1-VII.A.1.6)
9. Check fuel tanks, mountings, lines, caps, and vents. (P1-VII.A.2.1)
10. Inspect throttle linkages and return springs. (P1-VII.A.2.2)
11. Drain water from fuel system. (P1-VII.A.2.3)
12. Inspect water separator/fuel heater, replace fuel filter(s); prime and bleed fuel system. (P1-VII.A.2.4)
13. Check exhaust system mountings for looseness and damage. (P1-VII.A.3.1)
14. Check engine exhaust system for leaks, proper routing, and damaged or missing components to include exhaust gas recirculation (EGR) system if equipped. (P1-VII.A.3.2)
15. Check air induction system; piping, charge air cooler, hoses, clamps, and mountings; check for air restrictions and leaks. (P1-VII.A.3.3)
16. Inspect turbocharger for leaks; check mountings and connections. (P1-VII.A.3.1)
17. Check operation of engine compression/exhaust brake. (P1-VII.A.3.5)
18. Check operation of fan clutch. (P1-VII.A.4.1)
19. Inspect radiator (including air flow restriction, leaks, and damage) and mountings. (P1-VII.A.4.2)
20. Inspect fan assembly and shroud. (P1-VII.A.4.3)
21. Pressure test cooling system and radiator cap. (P1-VII.A.4.4)
22. Inspect coolant hoses and clamps. (P1-VII.A.4.5)
23. Inspect coolant recovery system. (P1-VII.A.4.6)
24. Check coolant for contamination; supplemental coolant additives (SCA) concentration, and protection level (freeze point). (P1-VII.A.4.7)
25. Service coolant filter/conditioner. (P1-VII.A.4.1)
26. Change engine oil and filters; visually check for oil for coolant or fuel contamination; inspect and clean magnetic drain plugs. (P1-VII.A.5.1)
27. Take an engine oil sample. (P1-VII.A.5.2)
28. Service or replace air filter as needed; check and reset air filter restriction indicator. (P1-VII.A.6.6)
29. Inspect water pump for leaks and bearing play.

D. Perform Preventive Maintenance on the Cab and Hood.
1. Inspect key condition and operation of ignition switch. (P1-VII.B.1.1)
2. Check warning indicators. (P1-VII.B.1.2)
3. Check instruments; record oil pressure and system voltage. (P1-VII.B.1.3)
4. Check heater, ventilation, and air conditioning (HVAC) controls. (P1-VII.B.1.6)
5. Check operation of all accessories. (P1-VII.B.1.7)
6. Using diagnostic tool or on-board diagnostic system; extract engine monitoring information. (P1-VII.B.1.8)
7. Check operation of electric/air horns and back-up warning devices. (P1-VII.B.2.1)
8. Check condition and documentation of safety flares, spare fuses, triangles, fire extinguisher and all required decals. (P1-VII.B.2.2)
9. Inspect seat belts and sleeper restraints. (P1-VII.B.2.3)
10. Inspect wiper blades and arms. (P1-VII.B.2.4)
11. Check wiper and washer operation. (P1-VII.B.3.1)
12. Inspect windshield glass for cracks or discoloration; check sun visor. (P1-VII.B.3.2)
13. Check seat condition, operation and mounting. (P1-VII.B.3.3)
## PREVENTIVE MAINTENANCE INSPECTION

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<thead>
<tr>
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<th>Description</th>
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<tr>
<td>14.</td>
<td>Check door glass and window operation. (P1-VII.B.3.4)</td>
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<td>15.</td>
<td>Inspect steps and grab handles. (P1-VII.B.3.5)</td>
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<td>16.</td>
<td>Inspect mirrors, mountings, brackets, and glass. (P1-VII.B.3.6)</td>
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<td>17.</td>
<td>Record all observed physical damage. (P1-VII.B.3.7)</td>
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<td>18.</td>
<td>Lubricate all cab and hood grease fittings. (P1-VII.B.3.8)</td>
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<td>19.</td>
<td>Inspect and lubricate door and hood hinges, latches, strikers, lock cylinders, safety latches, linkages, and cables. (P1-VII.B.3.9)</td>
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<td>20.</td>
<td>Inspect cab mountings, hinges, latches, linkages, and ride height; service as needed. (P1-VII.B.3.10)</td>
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<td>21.</td>
<td>Inspect cab hydraulic pump, lines, and cylinders for leakage; inspect safety devices; service as needed. (P1-VII.B.3.11)</td>
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<td>22.</td>
<td>Inspect A/C condenser and lines for condition and visible leaks; check mountings. (P1-VII.B.4.1)</td>
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<tr>
<td>23.</td>
<td>Inspect A/C compressor and lines for condition and visible leaks; check mountings. (P1-VII.B.4.2)</td>
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<td>24.</td>
<td>Check A/C system condition and operation; check A/C monitoring system, if applicable. (P1-VII.B.4.3)</td>
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<td>25.</td>
<td>Check HVAC air inlet filters and ducts; service as needed. (P1-VII.B.4.4)</td>
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<td>26.</td>
<td>Check mechanical and electronic engine speed controls. (P1-VII.B.2.5)</td>
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<td>27.</td>
<td>Check heater, ventilation, and air conditioning (HVAC) controls. (P1-VII.B.2.6)</td>
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\(^1\) ODCTE Objective  
Coding indicates NATEF alignment.  
All unmarked objectives are TTC instructor developed.

### Teaching Methods:

The class will primarily be taught by the lecture and demonstration method and supported by various media materials to address various learning styles. There will be question and answer sessions over material covered in lecture and media presentations. Supervised lab time is provided for students to complete required projects.

### Grading Procedures:

1. Students are graded on theory and shop practice and performance.  
2. Each course must be passed with seventy (70%) percent or better.  
3. Grading scale: A=90-100%, B=80-89%, C=70-79%, D=60-69%, F=50-59%.

### Description of Classroom, Laboratories, and Equipment:

Tulsa Technology Center campuses are owned and operated by Tulsa Technology Center School District No. 18. All programs provide students the opportunity to work with professionally certified instructors in modern, well-equipped facilities.

### Available Certifications/College Credit

The student may be eligible to take state, national or industry exam after completion of the program. College credit may be issued from Oklahoma State University-Okmulgee or Tulsa Community College. See program counselor for additional information.
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College Credit Eligibility:

The student must maintain a grade point average of 2.0 or better.