LEARNING OBJECTIVES

1. Definitions
   a. Class 1 leak
   b. Class 2 leak
   c. Class 3 leak
   d. diagnostic check
   e. AHJ-Authority Having Jurisdiction
   f. NFPA-National Fire Protection Association
   g. Shall/Should
   h. API-American Petroleum Institute
   i. Preventive Maintenance
   j. DPF-Diesel Particulate Filter
   k. Cetane rating
   l. Hypoid
   m. Out of service (OOS)
   n. Cloud point
   o. Flash point
   p. Inspection
   q. PSIA-Pounds Per Square Inch Absolute
   r. Interlock
   s. CCA-Cold Cranking Amp
   t. DEF-Diesel Exhaust Fluid - Urea
   u. SCR-Selective Catalyst Reduction
   v. Battery SOH
   w. Chemical Components of Diesel Exhaust (harmful emmissions)
   x. Lubricity
   y. Biocide
   z. Deficiency
   aa. OBD II
   bb. DTC
   cc. DLC
   dd. DOC
   ee. MIL illumination
   ff. Synthetic & petroleum based oil
   gg. Major repairs

2. General Requirements
   a. Inspection intervals
   b. Documentation
   c. Operational Tests
   d. NFPA 1071 Technician Qualification Standard
   e. Changes in Diesel Fuel - see reference materials list
      (1) sulfur limits
      (2) ASTM-American Society for Testing & Materials
      (3) EPA-Environmental Protection Agency
      (4) Exhaust Systems
   (5) Exhaust system after treatments such as
      SCR-Selective Catalytic Reduction
      SCC-Storage Catalytic Converter
      DPF-Diesel Particulate Filter
   (6) Fuel filter contamination
   (7) Premium diesel
   (8) Care & handling of DEF
   (9) Exhaust system warning lights

3. Out of Service Criteria
   a. Tires and wheels
      (1) Minimum tread depth
      (2) Tire Defects
      (3) Wheel defects
   b. Air Brakes
      (1) Leak Down Test
      (2) Low air indicator
   c. Identification of out-of-service components or systems
   d. Class 1, 2 & 3 leaks
   e. Windshield cracks
   f. Seat belts
   g. Engines
      (1) Exhaust Leaks
      (2) Engine oil leak
      (3) Coolant contamination
      (4) Fuel leak
      (5) Coolant leak
      (6) Fuel filter Contamination
   h. Warning Lights
      (1) Anti lock brake system(ABS) lamp
      (2) Brake warning lamp
   i. Heating Ventilation Air Conditioning(HVAC)
   j. Chassis, Steering & Suspension

4. Inspection, Diagnostic Checks and Maintenance
   a. Chassis and Body
      (1) Latch/Hinge lubrication
      (2) Axles, Tires, & Wheels
         (a) Tire age
         (b) Tire wear patterns
         (c) Dept of Transportation(DOT) Code (tire)
         (d) Fastener torque
         (e) Pressure check
         (f) Drive Axle
         (g) Wheel Bearings
         (h) Tire balance
         (i) Tread depth
   b. Drive train
      (a) Drive line
         (i) lubrication
         (ii) vibration causes
      (b) Drive Shaft
   c. Frame fasteners
   d. Diagnostic checks
   e. Vibration Diagnosis
   f. Suspension components
      (a) shock absorber type
b. Brakes
   (1) Uneven brake wear
   (2) Oil contaminated air system
   (3) Brake fluid level
   (4) Power assist
   (5) Types of brake fluid
   (6) Auto slack adjusters
   (7) Air pressure warning
   (8) Air system pressure recovery time
   (9) Antilock braking system
      (a) Leak-down rate
   (10) Air operated accessories

b. Engine
   (1) Noises
   (2) Oil
      (a) leaks
      (b) change intervals & procedures
      (c) requirements
      (d) types
      (e) motor oil function
   (3) Cooling system maintenance
   (4) Diagnostic trouble codes
   (5) Coolant pH
   (6) SCA (supplemental coolant additive)
   (7) Coolant type
      (a) Organic Acid Technology (OAT)
      (b) Hybrid Organic Acid Technology (HOAT)
      (c) G-05-Trade names of HOAT coolants
      (d) Inorganic Acid Technology(IAT)
   (8) Diesel fuel
   (9) Air filter restriction gauge
   (10) High idle control
   (11) Fan Clutch
   (12) Exhaust outlet location

c. Electrical Systems
   (1) Low Voltage
   (2) Battery voltage & checks
   (3) Charging system checks
   (4) Charge protect high idle operation
      (a) Electrolyte
      (b) Conditioner charger
   (5) Radio Frequency (RF) grounding
   (6) Bulb replacement
   (7) Siren
   (8) Primary/Secondary pump operation
   (9) Inverter
   (10)Interior lighting

d. Transmission
   (1) Mounting
   (2) Controls
   (3) Types of fluid
   (4) Temperature
   (5) Procedure
   (6) Fuel System
   (7) fuel filter replacement
   (8) Fuel additives

e. Maintenance
   (1) Severe Service
   (2) Intervals
   (3) Procedures

f. Transmission
   (1) Mounting
   (2) Controls
   (3) Types of fluid

f. Road conditions
   (1) Brake pull
   (2) Brake release

h. Drive train noise and vibration
   (1) Steering center
   (2) Steering Effort
   (3) Stopping Distance
   (4) Trans Shifting
   (5) Drifting/pulling
   (6) Spinning tires
      (1) differential damage

6. Performance Testing
a. Low Voltage system
   (1) Battery testing
      (a) Conductance
      (b) Load test
      (c) Cold Cranking Amps (CCA)
   (2) Alternator test
   (3) Testing frequency
   (4) Starter wiring test

b. Line voltage electrical systems
   (1) Polarity
   (2) Inverter
      (a) Load test
   (3) Shoreline