LEARNING OBJECTIVES

1. Definitions and Terms
   a. Shall
   b. Should
   c. Documentation
   d. Deflection
   e. Deformation
   f. Drive Train
   g. Interlock
   h. Ironing
   i. Leak
   j. Leakage
   k. Class 1 Liquid Leakage
   l. Class 2 Liquid Leakage
   m. Class 3 Liquid Leakage
   n. Qualified Person
   o. Non-Destructive Test (NDT)
   p. Magnetic Particle Inspection
   q. Out of Service
   r. Retired Fire Apparatus
   s. Reserve Fire Apparatus
   t. In-Service Fire Apparatus
   u. Ultrasonic Inspection
   v. Preventive Maintenance
   w. Instability
   x. Fire Pump
   y. SCR-Selective Catalytic Reduction
   z. DEF-Diesel Exhaust Fluid
   aa. HEST - High Exhaust System Temp.
   bb. Diverter Valve
   cc. Performance test

2. General Requirements
   a. Federal, State & Local Laws
   b. Personal Protection
   c. Inspections & Maintenance
   d. Qualification of Personnel to NFPA 1071
   e. Lubrication-frequency, grade, amount
   f. Safety

3. Out-of-Service Criteria
   a. Steering Components
      (1) 49 CFR Part 399.211, Appendix G, “Minimum Periodic Inspection Standards”
   b. Out-of-Service Indicators
   c. Minimum Brake Lining Thickness
   d. Fluid Leak Classifications
   e. Brake system
      (1) Air Brakes
         (a) Air pressure drop
         (b) Compressor air build up
      (2) Hydraulic Brakes
      (3) Wheel Chocks
   f. Low Air Warning
   g. Component Out-of-Service
   h. Seat Belts
   i. Wheel & Tire Deficiencies
   j. Engine Oil Leakage
   k. Transmission and clutch
      (1) Oil Leakage & Contamination
      (2) Deficiencies
   l. Coolant System
      (1) Leakage
      (2) Deficiencies
   m. Axle Oil Leakage
   n. Brake Fluid Leakage
   o. Fuel Leaking
   p. Power Steering Leakage
   q. Wire Rope
   r. Emergency Lights
   s. Fire pump system
      (1) Deficiencies
   t. Driving and Crew Areas, Body, Compartmentation
   u. Aerial Device Systems
      (1) Audible Alarm Systems
      (2) Intercom
      (3) Emergency Hydraulic Systems
   v. Low-Voltage and Line Voltage Electrical System
   w. Horn Audible Warning Devices
   x. Stop Engine Light
   y. Wheel Chocks
   z. Engine out of service
   aa. Trailer
      (1) Out of service
      (2) Tires
      (3) Inspection

Continued other side
4. Inspection, Diagnostic Checks and Maintenance

a. Chassis
   (1) King Pins
      (a) Lubrication of Meritor King Pin Bushing
   (2) Steering Gear Box
   (3) Steering Stops
   (4) Drive Belts
      (b) hydraulic
   (5) Alternator
      (20) U-Joint Movement & Lubrication
   (6) Ignition System
      (21) Axle
      (a) air
   (7) Work Lights
      (i) Fluid Level
   (8) Air Leak Down Rates
   (9) Wheels & Tires
      (a) tread depth
   (10) Tire coding
   (11) Battery Conditioner
   (12) Frame Rails
   (13) Engine Cooling
   (14) Engine Air Intake and Exhaust Systems
      (15) Engine Service Intervals
         (a) severe service
         (b) oil
      (22) Tie rod ends
   (16) Transmission Heat Exchanger
   (17) Drive Line
   (18) Brake Lining, Drums & Rotors
   (19) Filter Intervals
      (a) air
   (20) U-Joint Movement & Lubrication
   (21) Axle
      (a) air
   (22) Tie rod ends
   (23) Automatic Slack Adjuster (ASA)
   (24) Packing drip rate
   (25) Idle RPM
   (26) Battery
   (27) Steering wheel free play
   (28) Instruction plates and warning signage
   (29) Slip Yokes
   (30) Steering troubleshooting
   (31) Spring Brake Travel
   (32) Brake Diagnosis
   (33) ABS Historic Codes
   (34) Pressure Maintaining Valve
   (35) Turbo
   (36) Characteristics of DEF
      (a) solution of purified water & urea
      (b) non-toxic, non-hazardous
      (c) freezing point
   (37) Engine ECM

b. Low Voltage
   (1) Components
   (2) Alarm
   (3) Apparatus Lighting
   (4) Voltage Drop Test
   (5) Starting system
f. Line Voltage
   (1) Testing
   (2) Power Sources
   (3) GFCI

g. Utility Air and Breathing Air
   (1) Hydrostatic Bottle Testing
   (2) Maintenance Requirements
   (3) Out of service criteria as stated in OSHA 1926.552 (a)(3)(l))
i. Service criteria for out of business manufacturers

c. Parking Brake System
   (1) Testing
   (2) Recording
e. Foam Proportioning Systems
   (1) Foam Sampling
   (2) Inspection
   (3) Foam Concentration Inspection
f. DPF Lamp Operation

d. Foam Proportioning Systems
   (1) Operational testing
   (2) Testing Methods
   (1) Test Procedures
   (2) Compressor Test
   (3) Performance
   (4) Horizontal Load Testing
e. Compressed Air Foam Systems (CAFS)
   (1) Test Procedures
   (2) Full Load Test

5. Road Tests

a. Fire Apparatus Axle Weight Test
   (1) Weight Verification
   (2) Fully Loaded State
b. Braking System
   (1) Braking Test
   (2) ABS Braking
   (3) Performance Test
   (4) Air Brake Alarm
c. Parking Brake System
   (1) Testing
   (2) Recording
e. Hest Lamp Operation

6. Performance Testing

a. Low Voltage Electrical Systems
   (1) Voltage Regulator Testing
   (2) Battery Testing
   (3) Conductivity Test
   (4) Voltage Drop Test
   (5) Alternator Test
   (6) Continuous Electrical Load
   (7) Solenoid Voltage Drop Test
   (8) Load Testing
   (9) Battery conditioner test
b. Fire Pumps & Industrial Supply Pumps
   (1) Gauges - Master
   (2) Gauges Discharge
   (3) Flow meter
   (4) Automatic Transmission
   (5) Hydro testing time
   (6) Continuous Electrical Load
   (7) Solenoid Voltage Drop Test
   (8) Load Testing
   (9) Battery conditioner test
b. Fire Pumps & Industrial Supply Pumps
   (1) Gauges - Master
   (2) Gauges Discharge
   (3) Flow meter
   (4) Automatic Transmission
   (5) Hydro testing time
c. Aerial Device
   (1) Wire Rope inspection (OSHA 1926.552)
   (2) Inspections
   (3) Testing Intervals

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