

Suggested Reference Materials:

NFPA 1911, *Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Automotive Fire*

Apparatus 2007 edition National Fire Protection Association (800) 344-3555 or www.nfpa.org

KKK-A-1822F **Federal Specification for the Star-of-Life Ambulance**, download for no charge at:

<http://www.ntea.com/WorkArea/showcontent.aspx?id=1352>

Meritor Preventive Maintenance and Lubrication. Chapters 4, 6. Download for no charge at:

http://www.meritorhvs.com/MeritorHVS_Documents/mm1.pdf

Changes in Diesel Fuel - The Service Technician's Guide To Compression Ignition Fuel Quality - can be downloaded for no charge at http://www.biodiesel.org/pdf_files/Changes_In_Diesel_Fuel.pdf

Any **Chassis Manufacturers Service Manual**

LEARNING OBJECTIVES

1. Definitions
 - a. Class 1 leak
 - b. Class 2 leak
 - c. Class 3 leak
 - d. diagnostic check
 - e. AHJ
 - f. NFPA
 - g. Shall
 - h. API
 - i. Preventive Maintenance
 - j. DPF-Diesel Particulate Filter
 - k. Cetane rating
 - l. Hypoid
 - m. Out of service (OOS)
 - n. Cloud point
 - o. Flash point
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
 - (3) EPA
 - (4) Exhaust Systems
 - (5) Exhaust system after treatments such as SCR, SCC, DPF
 - (6) Fuel filter contamination
 - (7) Premium diesel
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 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) ABS lamp
 - (2) Brake warning lamp
 - i. HVAC
 - j. Chassis, Steering & Suspension
 - (6) -
 - (7) Diagnostic checks
 - (8) Vibration diagnosis
 - (9) Suspension components
 - (a) shock absorber type
 - (10) Engine
 - (a) Noises
 - (b) Oil
 - (i) leaks
 - (ii) change intervals & procedures
 - (iii) requirements
 - (iv) types
 - (v) motor oil function
 - (c) Cooling system maintenance
 - (d) Diagnostic trouble codes
 - (e) Coolant pH
 - (f) SCA (supplemental coolant additive)
4. Inspection, Diagnostic Checks and Maintenance
 - a. Chassis and Body
 - (1) Latch/Hinge lubrication
 - (2) Tire/Wheel
 - (a) tire age
 - (b) tire wear patterns
 - (c) DOT Code (tire)
 - (d) Fastener torque
 - (e) Pressure check
 - (f) Drive Axle
 - (g) Wheel Bearings
 - (h) Tire balance
 - (i) Tread depth
 - (3) Welding procedure
 - (4) Drive line
 - (a) lubrication
 - (b) vibration causes
 - (5) Frame fasteners

(g) Coolant type

- (i) OAT
- (ii) HOAT
- (iii) G-05
- (iv) IAT

(h) Diesel fuel

- (i) Air filter restriction gauge
- (j) High idle control
- (k) Fan Clutch

(l) idle time to highway miles equiv

(11) Drive Train

- (a) Drive Shaft/ Drive line

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

d. Maintenance

- (1) Severe Service
- (2) Intervals
- (3) Procedures

e. Transmission

- (1) Mounting
- (2) Controls
- (3) Types of fluid
- (4) Temperature
- (5) Procedure

f. Fuel System

- (1) fuel filter replacement
- (2) Fuel additives

g. Motor vehicle inspection laws

h. Steering

- (1) free play

i. Supplemental restraint systems

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) Air system pressure hold time

(5) RF grounding

- (6) Bulb replacement
- (7) Siren
- (8) Primary/Secondary pump operation
- (9) Inverter

5. Road Test

a. Speed

- (1) Minimum top speed

b. Duration

c. Frequency

d. Weight test

e. Braking System

- (1) Pedal pulse
- (2) Hand pedal
- (3) Hydraulic brake release

f. Road conditions

g. Air brakes

- (1) Brake pull
- (2) Brake release

h. Drive train noise

i. Steering center

6. Performance Testing

a. Low Voltage system

- (1) Battery testing
 - (a) Conductivity
 - (b) Load test
- (2) Alternator test
- (3) Testing frequency
- (4) Starter wiring test

b. Line voltage electrical systems

- (1) Polarity
- (2) Inverter
- (3) Shoreline