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<th>Section</th>
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<td>422</td>
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<td>423</td>
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<tr>
<td>424</td>
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</tbody>
</table>
110 Purpose

The Mayer Fire Department is responsible for maintaining the appearance and operation of all Mayer Fire District property. This applies to the vehicles that are purchased and used in the protection of life and property. Members of the Fire Department are required to perform non-invasive preventative maintenance on department vehicles and equipment in order to assure their proper function and to assure the longevity of department property.

111 Apparatus Checks

Every vehicle owned by the Mayer Fire District shall be inspected to various degrees on a daily, weekly, and monthly basis, in addition to following the guidelines set forth on the attached apparatus inspection forms. Vehicles owned and operated by the Mayer Fire District shall be checked and started at the beginning of each shift and monitored throughout the tour for major leaks and or deficiencies. In some cases, it is not required to start all apparatus on a daily basis (i.e. 48hr shifts or more days worked at the same station). All vehicles shall be properly working, equipped, and remain in a constant operational readiness state.
## Mayer Fire Department Apparatus Check Sheet

### Daily Check

<table>
<thead>
<tr>
<th>Day</th>
<th>Shift</th>
<th>Init.</th>
<th>Mileage</th>
<th>Hours</th>
<th>Air Pressure</th>
<th>Fire/EMS Equipment</th>
<th>O2</th>
<th>Lights</th>
<th>Tires</th>
<th>Fluids</th>
<th>Diesel/Unleaded Fuel</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D</td>
</tr>
</tbody>
</table>

### 112.1 Daily Check Clarification

**Month/Year** – The current month and year.

**Shop No.** – Shop number of vehicle (i.e. 0604, 0201, etc.)

**Shift** – Scheduled shift.

**Initials** – Initials of person checking off the vehicle.

**Mileage** – Displayed miles at the beginning of each truck check.

**Hours** – Displayed hours at the beginning of each truck check.

**Air Pressures** – Check gauges and record primary and secondary air tank pressures.

**Fire/EMS Equipment** – Ensure all Fire/EMS Equipment for that vehicle is in place and in an operational readiness state (i.e. Hazmat Monitor, SCBA, Extrication Equip, TIC, Hand/Pwr. Tools, EMS Boxes, Drug Boxes, etc.)

**O2/Oxygen** – Check and record the primary oxygen tank PSI. Replace/refill at 500PSI.

**Lights** – Check that all lights are in proper working condition and secured to vehicle.

**Tires** – Visual check for deficiencies. (i.e. bulging, low pressure, sidewall damage, tread wear, loose lug nuts.)

**Fluids** – The fluids listed below shall be checked, refilled, and recorded as needed.

- **Motor Oil** – Check oil levels when engine is cold or after sitting for 5 minutes when engine is hot. Add as needed.
- **Road Transmission** - Check for leaks and proper fluid levels. Ensure fluid is clean with no debris.
- **Coolant** – Check for proper level (i.e. site gauge). Add as needed.
- **Tank** – Check for full water tank. Add as needed.

**Fuel** – Fuel added, if any (i.e. Diesel, Unleaded). At no time shall any fuel can, fuel tank, or power tool fall below ½ full.
112.2 Weekly Check

**WEEKLY CHECK**

<table>
<thead>
<tr>
<th>Weekly Services</th>
<th>1st Monday</th>
<th>2nd Monday</th>
<th>3rd Monday</th>
<th>4th Monday</th>
<th>5th Monday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run Generators, Pumps, Power Tools, and Clean Hand Tools</td>
<td>INIT</td>
<td>DATE</td>
<td>INIT</td>
<td>DATE</td>
<td>INIT</td>
</tr>
<tr>
<td>Operate 2½”, 1¾”, 1” Valves and Drain Valves</td>
<td>INIT</td>
<td>DATE</td>
<td>INIT</td>
<td>DATE</td>
<td>INIT</td>
</tr>
<tr>
<td>Drain All Air Tanks</td>
<td>INIT</td>
<td>DATE</td>
<td>INIT</td>
<td>DATE</td>
<td>INIT</td>
</tr>
<tr>
<td>Operate Pressure Relief Valve</td>
<td>INIT</td>
<td>DATE</td>
<td>INIT</td>
<td>DATE</td>
<td>INIT</td>
</tr>
<tr>
<td>Operate Primer Pump</td>
<td>INIT</td>
<td>DATE</td>
<td>INIT</td>
<td>DATE</td>
<td>INIT</td>
</tr>
<tr>
<td>Check Battery / Fresh Air Calibrate Gas Monitor</td>
<td>INIT</td>
<td>DATE</td>
<td>INIT</td>
<td>DATE</td>
<td>INIT</td>
</tr>
</tbody>
</table>

**Tire Air Pressure Record**

<table>
<thead>
<tr>
<th>Initial</th>
<th>Date</th>
<th>Right Front</th>
<th>Right Inside</th>
<th>Right Outside</th>
<th>Left Front</th>
<th>Left Inside</th>
<th>Left Outside</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Week</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd Week</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd Week</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Week</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5th Week</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

112.3 Weekly Check Clarification

**Generators, Pumps, Power Tools, and Hand Tools** – Operate, check fluids, and clean.

**Operate and Drain All Water Valves** – Exercise all valves and drain, Check linkage, Clean and Lube as needed.

**Drain All Air Tanks** – All air tanks shall be manually drained. Make sure wheels are chocked.

**Operate Pressure Relief Valve** – Exercise ensure proper operation, clean filter if applicable.

**Operate Primer Pump** – Operate primer pump, check fluids and ensure proper operation.

**Check Battery / Fresh Air Calibrate Gas Monitor** - Perform as stated. Charge battery.

**Tire Pressures** – Tire pressures shall be checked and adjusted accordingly. All tires shall be maintained at minimum of 10psi below the listed cold pressures. At no time shall tire pressures fall below 20psi of the manufactures recommendation.
**112.4 Monthly Check Sheet**

**MONTHLY CHECK**

Date: ____________________

<table>
<thead>
<tr>
<th>INIT</th>
<th>MONTHLY SERVICE</th>
<th>TASK</th>
<th>Battery</th>
<th>Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Brake Components</td>
<td>Check/Measure</td>
<td>Battery 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fuel Linkage</td>
<td>Clean and Lubricate</td>
<td>Battery 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Steering System</td>
<td>Check</td>
<td>Battery 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cab Area</td>
<td>Check/Clean</td>
<td>Battery 4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cooling System – Belts/ Hoses</td>
<td>Check</td>
<td>Battery 5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Discharge Gates, Pump Linkages, Intake Valves</td>
<td>Operate/Clean and Lubricate</td>
<td>Battery 6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engineers Compartment</td>
<td>Clean and Organize</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hose Reels</td>
<td>Operate and Clean</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ladders</td>
<td>Operate and Clean</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Polish Body</td>
<td>Clean</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Visualize Chassis/ Motor</td>
<td>Check</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gas Monitor</td>
<td>Charge and Test</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Battery Service Record</td>
<td>Check and Record</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tire Depth Record</td>
<td>Check and Record</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**112.5 Monthly Service Check Sheet Clarification**

**Brake Components** – Brakes shall be checked according to DPS commercial vehicle code. Slack adjusters shall be measured and should not have more than one inch of movement. This is a 2 man operation. Wheels shall be chocked prior to inspection.

**Fuel Linkage** – Check for smooth operation. Clean and lube as needed.

**Steering System** – Check fluid levels, system leaks, frame cracks near steering box.

**Cab Area** – Check for any loose items (i.e. wires, seats, equipment, etc. that can be a safety hazard) and clean as needed.

**Cooling System/Belts** – Check cooling system for proper levels or any leaks and check belts for cracks and tension.

**Discharge Gates and Pump Linkage** – Operate all discharge valves and ensure proper operation. Clean and Lubricate as needed.

**Engineers Compartment** – Clean and organize as needed. Ensure proper fittings.

**Hose Reels** – Hose line should be extended and hose reel shall be cleaned and lubed as needed. Hose line should be washed prior to replacing.

**Ladders** – Ladders shall be removed and washed with soap and water and let dry prior to replacing.

**Polish Body** – Wash and wax, as needed.
**Visualize Chassis/ Motor** – Inspect chassis/ motor from front to rear and note any abnormalities (i.e. leaks, cracks, loose wires, loose fittings, etc.).

**HazMat 4 Gas Monitor, Charge/Pump and Bump Test** – Operate monitor, fresh air calibrate, and check battery condition. Run diagnostics with Pump and Bump test per policy. If calibration is needed, recalibrate to bring factors within limits on calibration bottle.

**Batteries** - Batteries shall be cleaned, secured and checked for proper fluid levels (if needed) and voltage shall be recorded on check sheet.

**Tire Depth Readings** – Readings shall be taken at the least amount of tread and recorded under tire pressure records. At no time shall front tire tread depth fall below 4 - 32\(^{\text{nd}}\) of an inch. At no time shall rear tire tread depth fall below 3 - 32\(^{\text{nd}}\) of an inch. (Note any inconsistencies in tread wear)

**112.6 Monthly Totals**

<table>
<thead>
<tr>
<th>Initial</th>
<th>Date</th>
<th>Items</th>
<th>Monthly Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Fuel – Gallons</td>
<td>Diesel</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oil – Quarts</td>
<td>Unleaded</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Miles Traveled</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Engine Hours</td>
<td></td>
</tr>
</tbody>
</table>

**112.7 Monthly Totals Clarification**

**Monthly Totals** – Driver/ Operators working the 1\(^{\text{st}}\) day of the month must ensure that all quantities of fuel, oil, miles, and engine hours are totaled from the prior month.
113 Documentation

ALL APPARATUS CHECK OFFS AND SERVICES MUST BE DOCUMENTED ON THE APPARATUS MAINTENANCE CHECK OFF SHEET. UPON RECOGNITION OF A DEFICIENCY THE DRIVER/ OPERATORS MUST NOTIFY HIS/ HER IMMEDIATE SUPERVISOR. IN THE EVENT AN ISSUE CANNOT BE CORRECTED BY THE ON-DUTY DRIVER/ OPERATOR, HE/ SHE MUST IMMEDIATELY NOTIFY THE ON DUTY CAPTAIN AND FILL OUT A DEPARTMENT APPARATUS REPAIR FORM. A COPY OF THE REPAIR FORM MUST BE SENT TO THE MAINTENANCE OFFICER’S IN-BOX ALONG WITH AN EMAIL EXPLAINING THE DEFICIENCY AND WHAT WAS DONE TO CORRECT THE ISSUE.

114 Daily Vehicle Check Off Schedule

All vehicles owned and/or operated by the Mayer Fire District shall be checked out according to the criteria listed on the Apparatus Maintenance Check Off sheet on a daily basis, when available. The only exception will be out of service vehicles. Out of service apparatus should be logged as OOS in the mileage column of the daily check off sheet.

115 Weekly Vehicle Check Off Schedule

All vehicles owned and/or operated by the Mayer Fire District shall receive a weekly service every Monday, based on the criteria listed on the Apparatus Maintenance Check Off Sheet, when available. The Driver/ Operator will be responsible for all items on the check sheet. The only exception will be command vehicles, which will be maintained by the officers operating those particular vehicles.

116 Monthly Vehicle Maintenance Schedule

The following apparatus will receive a monthly vehicle inspection and preventative maintenance check done on the corresponding day of each month.

1st of the month: Type 1 Engines

2nd of the month: Ambulances

3rd of the month: Type 6/3 Engines and Support Truck

4th of the month: Water Tenders
Mayer Fire District

VEHICLE, EQUIPMENT, PROPERTY LOSS AND OR DAMAGED - REPAIR FORM

Date: _____________________ Time: ______________ Station: ____________________

Shop #, Inventory # or Equipment ID #: _______________________________________

Is the Vehicle, Equipment, or Property Out Of Service? YES___ NO ___

Description of Actual Damaged to the Property:
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Describe what caused the item to be loss and or damaged:
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Describe any actions taken to correct the problem:
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Print Name of Officer Notified: __________________

Printed Name of Person Completing the Report: ________________________________

COMPANY OFFICER NOTIFICATION IS MANDATORY
118 Documentation Clipboards

Each apparatus/ shop number will have a designated clipboard. The maintenance check off sheets shall remain on the assigned clipboard. The first day of each month, the on duty Driver/ Operator shall remove the previous month’s forms, tally the monthly totals, and send them to the Maintenance Officer’s in-box. Once the previous month’s forms are removed, new apparatus check off sheets shall be added to each clipboard for the new month.

119 Apparatus Swap Sheet

The apparatus swap sheet is to assure accountability of assigned apparatus equipment. The apparatus swap sheet shall be used each time assigned equipment is placed on another shop number to maintain an operational readiness state. A copy of the sheet shall be present when returning assigned apparatus equipment to its designated location.

120 Records

The appointed department Fleet Maintenance Officer shall be charged with filing and maintaining all department vehicle maintenance records (i.e. check sheets, invoices, damage reports, vendors, warranty info, history etc.)

| Tab 200 | FIRE SERVICE GROUND LADDERS |

210 General Information

210.1 NFPA 1931

Fire service ladders meeting the specifications recommended by NFPA 1931, Standard on Design of and Design Verification Tests for Fire Department Ground Ladders, are built to withstand heavier loads than most commercial and residential ladders. Like most tools used in the fire service, ground ladders should be inspected, cleaned, properly maintained and used by trained personnel only. A ladder should never be used in any way during training or emergency situations where it is not recommended or specifically designed.

210.2 Types of Ladders

Ground ladders are constructed of three possible materials: wood, fiberglass or aluminum. All of the ladders used by Mayer Fire Department are made from aluminum and are manufactured by either Duo-Safety or Alco-Lite. The four common types of ground ladders placed on the fire apparatus are: 10’ folding, 14’ roof, 24’ extension and 35’ extension.

210.3 Ratings / Capacities

All but the 10’ folding ladder are designed to withstand a 750 lb. specified load with a 4:1 safety factor. The 10’ folding ladders are only required to withstand a 300 lb. specified
load. The 4:1 safety factor means that they can technically hold four times more weight (3,000 lbs.) than recommended. Keep in mind the specified load is a static load with the ladder at a proper angle (75 degrees). This does not include shock or dynamic loads. When a load starts to move, or the angle of the ladder decreases, the dynamic load increases rapidly.

Remember that safety should always be the highest priority while using ladders whether on a fire scene or during training. If at any time an unsafe act or unsafe condition is witnessed, it must be brought to a supervisor’s attention immediately.

211 Inspections and Testing

211.1 NFPA 1932

All fire service ground ladders should be inspected daily, monthly and after suspected damage. In addition to these inspections, NFPA 1932, *Standard on Use, Maintenance, and Service Testing of Fire Department Ground Ladders*, recommends that each ladder be service tested at least once a year or if damage is suspected.

211.2 Daily Inspections

A daily inspection of all fire service ladders should be performed during truck check. This daily inspection should include:

- Locate and identify each ladder on the apparatus.
- Visually inspect each ladder for damage, dirt or discoloration.
- Look for wear or fraying on the halyard and cables.
- Check roof hooks (verify that they lock securely).
- Make sure that the ladders are properly fastened to the apparatus.

211.3 Monthly / Suspected Damage Inspections

A monthly visual inspection is recommended in NFPA 1932. This inspection should be performed on the first Saturday of each month and should include:

- Removing all ground ladders and inspecting for damage.
- Checking heat sensor, electricity conductor and proper angle labels.
- Verifying that roof hooks and extension ladder locks/pawls are working properly.
- Clean all ladders and wax extension ladders.
- Raising and lowering all extension ladders.
- Opening and closing all folding ladders.
211.4 Testing

To ensure that every ladder has the adequate strength to be used safely, they are tested annually or after suspected damage. This test is known as the horizontal bend test. This test includes placing the fully extended ladder horizontally on a pair of sawhorses and placing weight on the center of the ladder. A maximum weight of 225 lbs. is placed on the center of the folding ladder and 500 lbs. on the center of the roof and extension ladders. Only trained personnel should perform this test.

212 Maintenance and Cleaning

212.1 Routine and Preventative Maintenance

Routine maintenance and cleaning of ground ladders is a simple task that can be accomplished during the semi-annual inspection. This procedure can prevent most ladder failure incidents before injuries can occur. In addition to maintenance and cleaning, a log must be kept on each ladder to document any damage, repair and testing. Any time an inspection discovers a problem with a ladder, it must be removed from service until the proper repairs can be made. The most common repairs to fire ladders include replacing worn or frayed halyards, rubberized safety shoes and expired or unreadable labels. Halyards can be easily replaced in the field when signs of wear or damage appear. This is the only repair that can be made without having to perform the horizontal bend test afterwards. Halyards are made from 3/8” manila rope and are available at most hardware stores. Every ladder must also have readable warning labels and non-expired heat sensor labels to be in service. If labels need to be replaced, it is important that the old labels are removed completely and the new labels are placed in the same location. NFPA 1932 requires four heat sensors and one instruction label per ladder section. Heat sensors are made from a heat sensitive material that turns black after exposure to heat over 300 degrees Fahrenheit. If a sensor changes color, it is out of service until testing can be performed. Items like rubberized safety shoes, roof hooks and pulleys must be purchased from the manufacturer and replaced by qualified personnel.


212.2  Cleaning and Lubricating

Ladders must be cleaned and lubricated prior to performing any type of inspection to ensure that defects and deformities are visible. Cleaning can be accomplished with soap and water using a brush or sponge. After the dirt and debris have been removed, a coat of car wax can be applied to the side rails as a protector. On extension ladders, apply paraffin wax or candle wax to the bed and fly sections susceptible to friction damage as well as the lock parts. Each station has a ladder maintenance/inspection box that includes: inspection forms, wax, lubricating oil, replacement halyard and detailed instructions on performing ladder inspections. Remember that clean and lubricated ladders are safer, easier to extend/retract and last longer.

212.3  Maintenance Records

A maintenance record or log book must be kept on each ladder currently in service. These logs are an important way of documenting any problems, repairs, inspections and testing that occur.

213  Safety and Proper Usage

213.1  Injury Prevention

Improper ladder usage can cause serious injuries to firefighters. In addition to falling off, firefighters can also be injured by not using proper lifting, carrying and raising techniques as well as improper ladder selection and placement. To prevent firefighter injuries while using a ground ladder, a series of precautions and a proper training program must be in place throughout the department.

213.2  Safety Tips

These are some important safety tips to remember while using ground ladders:

- Always wear proper PPE.
- Select the proper ladder for the job.
- Never use a damaged ladder.
- Use proper lifting and carrying techniques with the recommended amount of personnel.
- Always check for overhead obstructions before raising the ladder.
- On extension ladders, make sure that fly sections are out and lock hooks are secured on a rung. If the locks are not secured on a rung, the fly section can slide down rapidly.
- Check for proper angle (75 degrees).
- Never climb an unsecured ladder.
- Use a leg lock or ladder belt while working on a ladder.
Never exceed the recommended weight capacity (Only one firefighter on a section at a time).
- Use caution while climbing with tools.
- Have a secondary ladder in place on the opposite side of the building.

213.3 Training Programs

Since ground ladders are not frequently used on the day to day fire service operations, every firefighter should routinely drill and practice with ladders. Training should always be performed as safely and cautiously as possible with properly trained personnel supervising. When skills are not used on a regularly basis they can be easily forgotten, so always review ladder safety precautions before performing a drill involving ladders.

214 Ladder Inspection Instructions and Forms

Please fill out one form per ladder, for every ladder at the station on the first Saturday of the month. Start a new form if the ladder inventory # on the form does not match the one on the ladder, or when you are using a switch-out truck equipped with its own ladders. If you are in a switch-out truck, remember to inspect the ladders on your truck when you get it goes back in service. This form is to stay in the clipboard of the unit the ladder resides.
Mayer Fire Department  
Monthly Fire Ladder Inspection Form

Date: ________  Unit Assigned:_______  Shop#:______

MFD Inventory# __________  Ladder Serial #:_________  
(Inside Beam near 1st rung)  (Alco-Lite only)

Ladder Type:  Ladder Length: (circle)  
Extension____ Roof____ Folding____  10’  14’  16’  24’  Other:____

<table>
<thead>
<tr>
<th>Ladder Parts:</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sept</th>
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</table>

**Noted Problems:** (Please list and explain any visual/mechanical problems with ladder, along with the date, and notify a supervisor of any unsafe findings immediately.)

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
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________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Mayer Fire Department
Annual Fire Ladder Inspection Form

Date:_______             Unit Assigned:_______             Shop#:_______
MFD Inventory# _______       Ladder Serial #:(If Provided)_______

Reason for Inspection:
Monthly_____ Heat Exposure/Suspect Damage_____ After
Repair_____

Ladder Type:                        Ladder Length:(Circle)
Extension____ Roof____ Folding____ 10’ 14’ 16’ 24’ Other:____

<table>
<thead>
<tr>
<th>Ladder Parts: (Check One)</th>
<th>Okay</th>
<th>Needs Repair</th>
<th>N/A</th>
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<tbody>
<tr>
<td>Feet/Butt Spurs</td>
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<tr>
<td>Hooks</td>
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</tbody>
</table>

Ladder Stickers/Labels:

Heat Sensor Labels:

4 Heat Sensors Per Ladder Section: ____Yes  ____No
Heat Sensor Check: ___Labels Unchanged ___Label Changed ___Expired
Electricity Conductor: ____ Yes ____Worn/Not Readable ____No
Proper Angle:        ____ Yes ____Worn/Not Readable ____No

Manufacture Date: _____________________

Noted Problems:(Please list and explain any visual/mechanical problems with ladder and notify a supervisor of any unsafe findings immediately.)
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
HORIZONTAL BEND TEST

Person(s) Performing Inspection:________________________________________

Preload Test:

Weight Used:________

Measured Distance
From Rail to Ground: Left________ Right________

Test Load:

Weight Used:________

Measured Distance
From Rail to Ground: Left________ Right________

Results:
Amount of Deformation: Left________ Right________

☐ Passed ☐ Failed

Status of Ladder As a Result of Test:

☐ In service ☐ Out of service for repair ☐ Destroyed
310 INTRODUCTION

Today’s fire service has evolved into a multi faceted organization that responds to a wide range of emergencies some of which were not even thought of just a few years ago. As the demands and complexities of responding to these events have increased so, have the risks of injury or death to emergency response personnel.

Even though the risk to a firefighter can never be completely eliminated it can be effectively managed to an acceptable level through training and the use of personal protective equipment.

It is the intent of this document to establish a program for the proper selection of protective ensembles and ensemble elements used by this organization for structural fire fighting. It is also the intent of this document to establish a program for minimizing the safety and health risks associated with poorly maintained, contaminated or, damaged ensembles or ensemble elements.

311 ADMINISTRATION and GENERAL GUIDELINES

311.1 Scope

This document shall provide the minimum criteria for the creation and implementation of a “program” for the proper selection, handling, care, maintenance and retirement of personal protective ensembles and ensemble elements used by Mayer Fire Department for structural fire fighting. It is the objective of this program to provide protective ensembles and ensemble elements that are suitable and appropriate for the intended use. It is the objective of this program to identify and reduce the safety and health risks associated with the improper handling, care, maintenance and retirement of protective ensembles and ensemble elements. It is the intent of this program to establish procedures for the handling of the protective ensemble and ensemble elements that were involved in an event resulting in the injury or death of a member. This document shall comply with NFPA 1851 Standard on Selection, Care, and Maintenance of Structural Fire Fighting Protective Ensembles, 2001 revision. This document shall comply with Federal OSHA, State OSHA, and other mandated regulations. This document shall comply with all manufacturer use and maintenance guidelines for each element of the ensemble.
311.2 Selection Committee

The Mayer Fire Department shall establish a personal protective equipment (PPE) committee to oversee the process of selecting an ensemble or ensemble elements. The committee shall consist of individuals with an interest in personal protective equipment and shall have demonstrated a working knowledge of current technology, application and, governing standards. The committee size shall be determined on an as need basis and be of sufficient membership to complete the required tasks. The committee chairperson shall be this organization’s safety officer or, as agreed upon by the committee. The committee shall identify the various roles and responsibilities of this organization’s members. The committee shall review the current purchase specification and become familiar with its content. The responsibilities of the committee shall be to develop and implement a selection, care, maintenance and, retirement program for protective ensembles for structural firefighting compliant with NFPA 1851 Standard on Selection, Care and Maintenance of Structural Fire Fighting Ensembles, 2001 revision.

311.3 Contract Resources

If the Mayer Fire Department elects to utilize contract resources for specific parts of this program, the contractor shall substantiate to the committee that it has been recognized by the manufacturer to perform:

- Cleaning
- Repair
- Warranty work
- Modifications

The contractor shall also identify to the committee any limitations placed by the manufacturer as a condition of recognition.

311.4 Training Requirements

311.4.1 Inspections

*Routine Inspection*

All members of this organization who have been issued a protective ensemble or ensemble elements shall be trained and qualified to perform a Routine Inspection as directed in this document. Training may be performed by a member of this organization who has already been trained and qualified.
**Advanced Inspection**
If Advanced Inspections are performed by this organization: Selected members of this organization shall be trained to perform Advanced Inspections as directed by this document. Selected members shall be trained by the manufacturer or manufacturer’s representative of each element and training shall be documented.

311.4.2 **Cleaning**

**Routine Cleaning**
All members of this organization who have been issued a protective ensemble or ensemble elements shall be trained and qualified to perform a Routine Cleaning as directed in this document. Training may be performed by a member of this organization who has already been trained and qualified.

**Advanced Cleaning**
If Advanced Cleaning is performed by this organization: Selected members of this organization shall be trained to perform Advanced Cleaning as directed by this document. Selected members shall be trained by the manufacturer or manufacturer’s representative of each element and training shall be documented.

*Specialized Cleaning (Need specific conditions)*
If Specialized Cleaning is performed by this organization: The Mayer Fire Department shall determine, based on training and equipment, what types of conditions can be cleaned using Specialized Cleaning processes. An additional SOP shall be written to establish Specialized Cleaning procedures. Selected members of this organization shall be trained to perform Specialized Cleaning as directed by this document. Selected members shall be trained by the manufacturer or manufacturer’s representative of each element and training shall be documented.

311.4.3 **Repair**

If repairs are performed by the Mayer Fire Department: Selected members of this organization will be trained to perform repairs. Types of repairs shall be restricted to this organization’s limitations in training and equipment. Types of repairs shall also be limited to conditions placed by the manufacturer of each element. Selected members shall be trained by the manufacturer or manufacturer’s representative of each element and training
shall be documented. Selected members shall also be recognized by the manufacturer of each element as being qualified to perform the repairs.

311.5 After-Market Modifications and Alterations

This organization shall not in any way permit modifications of any type to any ensemble or ensemble element unless authorized by the manufacturer. This organization shall not permit accessories of any kind to be permanently added to any ensemble or ensemble element without authorization from the manufacturer. This includes but is not limited to hooks, snaps, belts, paint, decals, etc.

311.6 Manufacturer’s Instructions

Where the manufacturer’s instructions regarding care and maintenance deviate from this document, the manufacturer’s instructions shall supersede in all cases. When issuing new ensembles or ensemble elements, this organization shall provide its members with applicable parts of this document and, a copy of the manufacturer’s instructions on care, use, maintenance, limitations and, warnings. The committee shall retain a copy of the manufacturer’s instructions for reference purposes and to check for conflicting information.

311.7 Limiting Exposure to Soiled or Contaminated Ensembles or Ensemble Elements

Ensembles or ensemble elements that have been determined to be soiled or contaminated shall be removed from service, placed in an airtight container and transported to an authorized facility to be cleaned or decontaminated. At no time shall members of this organization transport or store soiled or contaminated ensembles or ensemble elements in department living areas, personal vehicles, or personal place of residence. At no time shall members of this organization unnecessarily expose themselves, family, other members of this organization, or the public to ensembles and ensemble elements that have been soiled or contaminated. The committee shall also become familiar with federal and state OSHA regulations as well as section 2.5 and A.2.5 of NFPA 1851 Standard on Selection, Care, and Maintenance of Structural Fire Fighting Ensemble, and NFPA 1581 Standard on Fire Department Infection Control Program with regards to soiled or contaminated ensembles.

311.8 Terminology and Definitions

The following terms with definitions are recognized by NFPA and may be found in this document or others created in support of this document:
Accessories. Those items that are attached to an ensemble or ensemble element but designed in such a manner to be removable from the ensemble or the element and that are not necessary to meet the requirements of the standard. Such accessories include, but are not limited to, utility belts, harnesses, backpacks, tools, tool packs, radios, radio packs, suspenders, lights, and heat sensing devices.

Biological Agents. Biological materials that could be capable of causing a disease or long-term damage to the human body.

Body Fluids. Fluids produced by the body including, but not limited to, blood, semen, mucus, feces, urine, vaginal secretions, breast milk, amniotic fluids, cerebrospinal fluid, synovial fluid, and pericardial fluid.

Carcinogen/Carcinogenic. A cancer-causing substance which is identified in one of several published lists.

Care. Procedures for cleaning, decontamination, and storage of protective clothing and equipment.

Certification/Certified. A system whereby a certification organization determines that a manufacturer has demonstrated the ability to produce a product that complies with the requirements of a specific standard(s), authorizes the manufacturer to use a label on listed products that comply with the requirements of that standard(s), and establishes a follow-up program conducted by the certification organization as a check on the methods the manufacturer uses to determine compliance with the requirements of that standard(s).

Char. The formation of a brittle residue when material is exposed to thermal energy.

Cleaning. The act of removing soils and contaminants from ensembles and elements by mechanical, chemical, thermal or combined processes.

Advanced Cleaning. The thorough cleaning of ensembles or elements by washing with cleaning agents.

Contract Cleaning. Cleaning conducted by a facility outside the organization that specializes in cleaning protective clothing.

Routine Cleaning. The light cleaning of ensembles or elements performed by the end user without taking the elements
out of service.

**Specialized Cleaning.** Cleaning to remove hazardous materials or biological agents.

**Coat.** A protective garment; an element of the protective ensemble designed to provide minimum protection to upper torso and arms, excluding the hands and head.

**Contamination/Contaminated.** The process by which ensembles and ensemble elements are exposed to hazardous materials or biological agents.

**Coverall.** A protective garment; an element of the protective ensemble configured as a single-piece garment and designed to provide minimum protection to the torso, arms, and legs, excluding the head, hands, and feet.

**Craze.** The appearance of fine cracks in surface of helmet shell or other smooth surface of an element.

**Cross Contamination.** The transfer of contamination from one item to another or to the environment.

**Crown.** The portion of the helmet that covers the head above the reference plane.

**Crown Straps.** A helmet term for the part of the suspension that passes over the head.

**Decontamination.** The act of removing contaminants from ensembles and ensemble elements by a physical, chemical, or combined process. *(See also Cleaning, and Specialized Cleaning.)*

**Disinfectant.** An agent that destroys, neutralizes, or inhibits the growth of harmful biological agents.

**Ear Covers.** An integral part of the helmet designed to provide limited protection for the ears. Provides no significant thermal protection.

**Elasticity.** The ability of an ensemble or element, when repeatedly stretched, to return to its original form as applied to wristlets and hoods.
Elements. The parts or items that comprise the protective ensemble. The protective ensemble elements are coats, trousers, coveralls, helmets, gloves, footwear, and interface components.

Embrittlement. The hardening of a textile material that makes the ensemble or element or a textile material susceptible to easy fracture.

Emergency Medical Operations. The delivery of emergency medical care and transportation prior to arrival at a hospital or other health care facility.

Energy Absorbing System. A material, suspension system, or combination thereof incorporated into the design of the helmet to attenuate impact energy.

Ensemble. Multiple elements of clothing and equipment designed to provide a degree of protection for fire fighters from adverse exposures to the inherent risks of structural fire fighting operations and certain other emergency operations. The elements of the protective ensemble are coats, trousers, coveralls, helmets, gloves, footwear, and interface components.

Face shield. A helmet component intended to help protect a portion of the wearer’s face in addition to the eyes, not intended as primary eye protection.

Field test. The non-laboratory evaluation of one or more protective ensemble elements used to determine product performance related to organizational expectations or to compare products in a manner related to their intended use.

Fit. The quality, state or manner in which the length and closeness of clothing, when worn, relates to the human body.

Flame Resistance/Resistant. The property of a material whereby the application of a flaming or non-flaming source of ignition and the subsequent removal of the ignition source results in the termination of combustion. Flame resistance can be an inherent property of the material, or it can be imparted by specific treatment.

Footwear. An element of the protective ensemble designed to provide minimum protection to the foot, ankle, and lower leg.

Functional/Functionality. The ability of an ensemble or element or component to continue to be utilized for its intended purpose.
Garment(s). The coat, trouser, or coverall elements of the protective ensemble designed to provide minimum protection to the upper and lower torso, arms, and legs, excluding the head, hands, and feet.

Gauntlet. The circular, flared, or otherwise expanded part of the glove that extends beyond the opening of the glove body.

Gloves. An element of the protective ensemble designed to provide minimum protection to the fingers, thumb, hand, and wrist.

Glove Wristlet. The circular, close-fitting part of the glove, usually made of knitted material, that extends beyond the opening of the glove body.

Goggles. A helmet component intended to help protect the wearer’s eyes and a portion of the wearer’s face, not intended as primary eye protection.

Hardware. Non-fabric components of the structural fire fighting protective ensemble including, but not limited to, those made of metal or plastic.

Hazardous Materials. Any solid, liquid, gas, or mixture thereof that can potentially cause harm to the human body through respiration, ingestion, skin absorption, injection, or contact.

Hazardous Materials Emergencies. Incidents involving the release or potential release of hazardous chemicals into the environment that can cause loss of life, personnel injury, or damage to property and the environment.

Helmet. An element of the protective ensemble designed to provide minimum protection to the head.

Hood. The interface component element of the protective ensemble designed to provide limited protection to the coat/helmet/SCBA facepiece interface area.

Integrity. The ability of an ensemble or element to remain intact and provide continued minimum performance.

Interface Area. An area of the body where the protective garments, helmet, gloves, footwear, or SCBA facepiece meet (i.e., the protective coat/helmet/SCBA facepiece area, protective coat/protective trouser area, the protective coat/glove area, and the protective trouser/footwear area).
**Liner System.** The combination of the moisture barrier and thermal barrier as used in a garment.

**Maintenance.** Procedures for inspection, repair, and retirement of protective clothing and equipment.

**Manufacturer.** The entity that assumes the liability and provides the warranty for the compliant product.

**Melt.** A response to heat by a material resulting in evidence of flowing or dripping.

**Moisture Barrier.** The portion of the composite designed to prevent the transfer of liquids.

**Organization.** The entity that provides the direct management and supervision for the emergency incident response personnel.

**Outer Shell.** The outermost layer of the composite with the exception of trim, hardware, reinforcing material and wristlet material.

**Protective Ensemble.** Multiple elements of clothing and equipment designed to provide a degree of protection for fire fighters from adverse exposures to the inherent risks of structural fire fighting operations and certain other emergency operations. The elements of the protective ensemble are coats, trousers, coveralls, helmets, gloves, footwear, and interface components.

**Reinforcement.** An additional layer placed in or on an element.

**Retirement.** The process of permanently removing an element from emergency operations service in the organization.

**Seams.**

  **Major A Seams.** Outermost layer seam assemblies where rupture could reduce the protection of the garment by exposing the inner layers such as the moisture barrier, the thermal barrier, the wearer’s station/work uniform, other clothing, or skin.

  **Major B Seams.** Moisture barrier or thermal barrier seam assemblies where rupture could reduce the protection of the garment by exposing the next layer of the garment, the wearer’s station/work uniform, other clothing, or skin.
**Minor Seams.** Seam assemblies that are not classified as Major A or Major B seams.

**Selection.** The process of determining what protective clothing and equipment is necessary for protection of fire and emergency service responders from an anticipated, specific hazard, or other activity, the procurement of the appropriate protective clothing and equipment, and the choice of the proper protective clothing and equipment for a specific hazard or activity at an emergency scene.

**Separate.** A material response evidenced by splitting or delaminating.

**Service Life.** The period for which an ensemble or element is useful before retirement.

**Shall.** Indicates a mandatory requirement.

**Shank.** Reinforcement to the area of protective foot-wear designed to provide additional support to the instep.

**Should.** Indicates a recommendation or that which is advised but not required.

**Soiled/Soiling.** The accumulation of materials, that are not considered hazardous materials or biological agents, but which could degrade the performance of the ensemble or element.

**Stress Areas.** Those areas of the garment that are subjected to more wear, including but not limited to, crotches, knees, elbows, and shoulders.

**Suspension.** A helmet term for the energy attenuating system made up of the headband and crown strap.

**Tensile Strength.** The force at which a fiber or a fabric will break.

**Thermal Barrier.** The portion of protective ensemble or element composite that is designed to provide thermal protection.

**Trim.** Retro-reflective and fluorescent material attached to the outermost surface of the protective ensemble or element for visibility enhancement.
**Trouser.** A protective garment. An element of the protective ensemble that is designed to provide minimum protection to the lower torso and legs, excluding the ankles and feet.

**Universal Precautions.** An approach to infection control in which human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens. Under circumstances in which differentiation between body fluids is difficult or impossible, all body fluids shall be considered potentially infectious materials.

**Units.** In this standard, values for measurement are followed by an equivalent in parentheses, but only the first stated value shall be regarded as the requirement. Equivalent values in parentheses shall not be considered as the requirement, as these values might be approximate.

**Utility Sink.** A separate sink used for cleaning ensembles and ensemble elements.

**Winter Liner.** A garment term for an optional component layer designed to provide added insulation against cold.

**Wristlet.** An interface component element of the protective ensemble that is the circular, close-fitting extension of the coat sleeve, usually made of knitted material, designed to provide limited protection to the protective coat/glove inter-face area.

### 312 RECORD KEEPING

For each element, the committee shall develop and implement a record keeping system that complies with NFPA 1851. At a minimum, the following data shall be recorded:

- Person to whom element is issued
- Date and condition when issued
- Manufacturer and model name or design
- Manufacturer’s identification number, lot number, or serial number
- Month and year of manufacture
- Date of and findings of Advanced Inspection (required at least every 12 months)
- Date of Advanced Cleaning (required at least every 6 months)
- Date of Specialized cleaning (required when decontamination is necessary)
- Reason for Advanced Cleaning or Specialized Cleaning and who performed the task
• Date of repairs, who performed repairs, and brief description of all repairs
• Date of retirement
• Date and method of disposal

The committee may elect to develop a system for this organization or adopt an existing system. The records may be collected and stored as hard paper copies or, collected and stored electronically. Records shall be maintained until the element is retired and disposition has occurred. If resources permit, records should be kept for at least 12 months past retirement.

313 SELECTION

313.1 Risk Assessment

The committee shall initiate a risk assessment with the goal of establishing the appropriate needs of the organization. The risk assessment shall consider the following:

• Climate
• Field elevation
• Expected low & high temperature
• Average day and night temperatures
• Average winds
• Average humidity
• Types of incidents responding to
• Frequency of use of ensembles
• Organization’s operational strategy and tactics
• Past experiences
• Other issues deemed important

The risk assessment shall be reviewed on an annual basis or, as deemed necessary. The conclusions of the risk assessment shall be documented kept on record.

313.2 Field Wear Test and Evaluation (if implemented)

Based on the findings of the risk assessment, the committee shall identify possible technologies and manufacturers that may meet the organizations needs.

The committee shall contact manufacturers or vendors about participating in a field wear test and evaluation of their product(s). The manufacturers contacted shall be determined by the committee. By implementing a field
wear test the committee shall begin to evaluate the strengths and weakness of the ensembles and ensemble elements under consideration. The committee shall select participants for the wear test based upon a cross section of personnel and upon considering the following:

- Willingness to participate (not used as punishment)
- Objectivity
- Current status (line fire fighter, inspection officer, chief officer, etc.)
- Age & gender
- Degree of physical fitness

The committee shall assure that each ensemble or ensemble element is properly fitted before use. The duration of the field wear test shall be determined by the committee prior to the start of the evaluation. The committee shall develop and use an evaluation form to document the findings of the wear test. The evaluation form shall use a rating system for those features deemed important to the committee. The evaluation form is to be completed for each ensemble element being considered. Each participant shall be required to complete the evaluation form periodically during and upon completion of the evaluation. At minimum, the field wear test and evaluation should consider:

- Performance expectations
- Thermal protection vs. physiological affects
- Style or design
  This will have a physiological impact on user, function, etc.
- Construction
  This has an affect on quality, durability, ensemble life.
- Manufacturer
- Does the manufacturer have the ability to meet performance demands, provide technical support, provide training, service warranty claims, and render adequate field support.

313.3 Purchase Specifications

Purchase specifications are intended to translate the findings of the selection committee into a document that identifies the performance and design requirements of the ensemble or ensemble elements as well as every aspect of this organization’s needs and expectations. The purchase specifications shall incorporate at least the following information:

- The governing regulations each element is to comply with.
• Language required by the purchasing department.
• Any language requiring manufacturers’ to substantiate, to the committee’s satisfaction, compliance with the purchase specification.
• Language detailing a pre-bid conference, if deemed necessary.
• Language requiring bid samples be submitted, if deemed necessary.
• Language providing for disposition of bid samples at the conclusion of the selection process.
• Language indicating that an inspection of received products will be completed prior to final acceptance of all orders.
• Language detailing the procedures for returning unsatisfactory products.
• Language detailing performance demands such as delivery, sizing, training, etc.
• Language detailing any penalties for failure to comply with the specifications.
• Garment outer shell fabric, weight and, color.
• Garment thermal liner/moisture barrier composite.
• Garment trim type and configuration.
• Garment closure system.
• Garment wristlet system.
• Hood fabric and face opening criteria.
• Glove composite, gauntlet or wristlet (wristlet fabric).
• Helmet material, color, retention system, trim configuration, trim color, ear coverings, and eye protection.
• Boot composite.
• The various options that are being added to each element.
• Language detailing specific construction criteria for each element.

The committee is instructed to review Appendix A, section A.3.1.7 NFPA 1851, current revision for more information related to purchase specifications.

314 INSPECTION

314.1 General Information

The purpose of the inspection process is to determine the serviceability of the ensemble and the ensemble elements by identifying damage that, if left unnoticed, could result in a failure of that element. Prior to initiating an inspection, the ensemble and ensemble elements shall be evaluated for soiling and contamination. If the ensemble or ensemble elements are found to be soiled or, contaminated, the inspection processes shall suspended until the ensemble and its elements have been clean or decontaminated. The committee shall establish guidelines for determining when an element is
soiled or contaminated and to the cleaning procedure to use. The inspection
criteria shall be in a “GO” or “NO GO” criteria. Elements that are found to
be damaged shall be immediately removed from service and evaluated by a
member of this organization, who is specially trained and qualified, to
determine if the element is to be repaired or retired. Inspections shall be
classified as Routine Inspection and Advanced Inspection.

314.2 Routine Inspection

Routine Inspection is the responsibility of each member of this organization
who has been issued a protective ensemble or ensemble elements. Routine
Inspections shall be completed after each use, after exposure to an event that
could have resulted in damage to the element or, as warranted. This
organization encourages each member to conduct a routine or brief
inspection prior to the start of each duty day.

314.3 Advanced Inspection

Advanced Inspections shall be conducted by members of this organization
who have been trained as per section 311.4, Training Requirements, of this
document. Advanced Inspections may also be performed by Contract
Resources, provided they meet the criteria identified in section 311.4
Training Requirements. Advanced Inspections shall be performed at least
every 12 months and the findings documented as per section 312. An
Advanced Inspection shall also be completed when a Routine Inspection
identifies a potential problem. The Mayer Fire Department also requires an
Advanced Inspection to be completed prior to any element being returned to
service from Advanced Cleaning, Specialized Cleaning or Repair.

314.4 Routine Inspection Procedures

The Routine Inspection shall include the following, minimum criteria:

Jacket and Trouser

- Soiling or contamination Physical damage such as rips, tears, and cuts
- Damaged/missing hardware and closure systems
- Thermal damage such as charring, burn holes, and melting
- Damaged or missing reflective trim

Hood

- Soiling or contamination
- Physical damage such as rips, tears, and cuts
• Thermal damage such as charring, burn holes, and melting
• Loss of face opening adjustment

Helmet

• Soilng or contamination
• Physical damage to the shell, such as cracks, crazing, dents, soft spots, and abrasions
• Thermal damage to the shell such as bubbling, soft spots, warping, or discoloration
• Physical damage to the ear flaps such as rips, tears, and cuts
• Thermal damage such as charring, burn holes, and melting
• Damaged or missing components of the suspension and retention systems
• Damaged or missing components of the faceshield/goggle system, including discoloration, crazing, and scratches to the faceshield/goggle lens limiting visibility
• Damaged or missing reflective trim

Gloves

• Soilng or contamination
• Physical damage such as rips, tears, and cuts
• Thermal damage such as charring, burn holes and melting
• Inverted liner
• Shrinkage
• Loss of elasticity/flexibility

Footwear

• Soilng or contamination
• Physical damage such as cuts, tears, and punctures
• Thermal damage such as charring, burn holes, and melting
• Exposed/deformed steel toe, steel midsole, and shank
• Loss of water resistance
• Closure system component damage and functionality

314.5 Advanced Inspection Procedures

UNIVERSAL PRECAUTIONS shall be utilized when handling elements. These procedures are to be performed by members of this organization who meet the criteria identified in section 311.4 Training Requirements. These procedures may also be performed by a Contract Resource that meets the
criteria identified in section 311.4 Training Requirements. The committee shall develop an inspection form that incorporates the criteria found in NFPA 1851, section 314.3, as well as other information deemed necessary. This form shall become part of the Record Keeping requirements of this document and shall meet the criteria identified in section 312 of this document.

315 CLEANING

315.1 General Information

The Mayer Fire Department shall provide a means of having soiled and contaminated ensemble and ensemble elements cleaned and decontaminated. UNIVERSAL PRECAUTIONS shall always be utilized when handling soiled and contaminated elements. Elements shall be stored and transported as per section 311 of this document. The committee shall contact the manufacturer of each element for approval of the following guidelines and to seek additional guidelines from the manufacturer. The manufacturer of the element shall be contacted anytime there is a question regarding cleaning or decontaminating. Cleaning shall be classified as Routine Cleaning, Advanced Cleaning and Specialized Cleaning.

315.2 Routine Cleaning

Routine Cleaning is the responsibility of each member of this organization who has been issued a protective ensemble or ensemble elements. Routine Cleaning shall be completed following an event that results in soiling or contamination to the element or, as warranted.

315.3 Advanced Cleaning

Advanced Cleaning shall be conducted by members of this organization who have been trained as per section 311.4, Training Requirements, of this document. Advanced Cleaning may also be performed by Contract Resources, provided they meet the criteria identified in section 311.4 Training Requirements. Advanced Cleaning shall be performed at least every 6 months and the findings documented as per section 312. An Advanced Cleaning shall also be completed when a Routine Cleaning fails to render the elements sufficiently clean. This organization also requires Advanced Cleaning to be completed prior to any element being submitted for Advanced Inspection.
315.4 Specialized Cleaning (Hazardous Material Exposure)

Universal precautions shall be observed when handling elements known or suspected to be contaminated with hazardous materials or biological agents. Ensembles or ensemble elements that are known or suspected to be contaminated shall be isolated, tagged, bagged and removed from service under the supervision of the senior fire ground commander or his designate. Specialized Cleaning may also be performed by Contract Resources, provided they meet the criteria identified in section 311.4 Training Requirements. If a Contract Resource is utilized, contaminated elements shall be shipped in accordance with federal, state, and local regulations. Upon completion of Specialized Cleaning, the elements shall be inspected for effectiveness of cleaning and, if necessary, cleaning process is to be repeated.

315.5 General Cleaning Guidelines

Universal precautions shall be used. Commercial dry cleaning shall not be used as a means of cleaning or decontaminating ensembles and ensemble elements unless approved by the manufacturer of the ensemble or ensemble element. Chlorine bleach or chlorinated solvents shall never be used to clean or decontaminate ensembles or ensemble elements. Cleaning solutions shall have a pH range of not less than 6.0 pH and not greater than 10.5 pH. To prevent structural damage to the ensemble or ensemble element, heavy scrubbing or spraying with high velocity water jets, such as a power washer, shall not be used. Protective ensembles and ensemble elements shall be cleaned separately from non-protective items. To prevent damage to components and cross contamination, the shells and liners of protective garment elements shall be separated and cleaned with like items (shells with shells and liners with liners, etc.).

315.6 Routine Cleaning Procedures

Universal precautions shall be used. In establishing a Routine Cleaning guideline, the committee shall examine the manufacturer’s label and user information provided by the manufacturer, for the instructions on cleaning the ensemble or ensemble element. In the absence of the manufacturer’s instructions or manufacturer’s approval of alternative procedures, the following cleaning procedure shall be used:

- When possible, initiate cleaning at the incident scene.
  - Brush off any dry debris.
  - Gently rinse off debris with a water hose.
  - If necessary, scrub gently with a soft bristle brush and rinse off again.
• If necessary, spot clean utilizing procedures for Utility Sink.
• Inspect for soiling and contamination, and repeat process or submit for Advanced Cleaning.

315.7 Advanced Cleaning Procedures

Universal precautions shall be used. In establishing an Advanced Cleaning guideline, the committee shall examine the manufacturer’s label and user information provided by the manufacturer, for the instructions on cleaning the ensemble or ensemble element. In the absence of the manufacturer’s instructions or manufacturer’s approval of alternative procedures, the following cleaning procedure shall be used:

• Brush off any dry debris.
• Clean utilizing procedures for:
  o Utility Sink Cleaning
  o Machine Cleaning.
  o Contract Resources
• Inspect for soiling and contamination, and repeat process or submit for Specialized Cleaning.

315.8 Specialized Cleaning Procedures

Universal precautions shall be used. Where elements are known or suspected of being contaminated with a hazardous material or biological agent, an attempt shall be made to identify the contaminant or suspected contaminant. When the contaminant has been identified, this organization shall consult the manufacturer of the contaminant for an appropriate decontamination agent and process. In addition, the manufacturer of each element shall also be contacted for approval of the recommended agent and process. If the contaminant cannot be identified or a cleaning solution found, the ensemble or ensemble elements shall be disposed of following federal, state, and local guidelines. For ensembles or ensemble elements that have been soiled with body fluids the following process shall be used:

• Contact the manufacturer or follow the provided manufacturer’s instructions to determine appropriate disinfectant to use.
• Clean following
  o Utility Sink Cleaning
  o Machine Cleaning
  o Contract Resource
• Inspect for effectiveness of cleaning, and repeat process and repeat process if necessary.

315.9 Cleaning Procedures for Garment Element using Utility Sink

The following procedures shall be used when cleaning in a utility sink:
• Wear protective gloves and eye/face splash protection
• Fill the sink with water not to exceed 40° C (105° F).
• Add cleaning solution or detergent (liquid is recommended)
• If necessary, pre-treat heavily soiled or spotted areas.
• Do not overload the sink.
• Scrub gently using a soft bristle brush.
• Use extra care with moisture barrier assemblies.
• Drain the water from the sink.
• Refill the sink; agitate gently using gloved hand or stir stick.
• Gently wring out garments and drain the water from the sink.
• Repeat the rinse steps until garment is thoroughly rinsed.
• Dry the elements.
• Rinse out the sink.

315.10 Cleaning Procedures for Garment Element using Machine Washer

The following procedures shall be used for machine cleaning:

• Set and start the machine cycle
• Filling with a fill with water not to exceed 40° C (105° F).
• Use a heavy duty setting for shells, etc.
• Use regular or gentle for liner composites
• Add detergent.
• Run one complete cycle, rinsing at least twice.
• Do not overload the machine.
• If necessary, pre-treat heavily soiled or spotted areas.
• Fasten all closures, including pocket closures, hook and loop, snaps, zippers, hooks and dees, etc.
• Turn garment inside out and place in mesh laundry bag.
• Dry the elements.
• Inspect and rewash if necessary.
• If the machine is also used to wash items other than protective ensemble elements, rinse out the machine by running it while empty through a complete cycle with 49° C to 52° C (120° F to 125° F) water and detergent.

315.11 Drying Procedures for Garments

In establishing a Drying guideline, the committee shall examine the manufacturer’s label and user information provided by the manufacturer, for the instructions on drying the ensemble or ensemble element. In the absence
of the manufacturer’s instructions or manufacturer’s approval of alternative procedures, the following cleaning procedure shall be used:

- For air drying:
  - Place elements in a clean, dry, well ventilated area.
  - Do not dry in direct sunlight.

- For machine drying:
  - Do not overload the machine.
  - Fasten all closures, including pocket closures, hook and loop, snaps, zippers, hooks and dees, etc.
  - Turn garments inside out and place in a mesh laundry bag.

- If the dryer has a no-heat option, use it.
- If heat must be used, basket temperature shall not exceed 40° C (105° F).

315.12 Helmet Cleaning Procedures

Wear protective gloves and eye/face splash protection. The committee shall examine the manufacturer’s label and user information provided by the manufacturer, for the instructions on cleaning the helmet element. In the absence of the manufacturer’s instructions or manufacturer’s approval of alternative procedures, the following cleaning procedure shall be used:

- Helmets shall not be machine cleaned or dried.
- Helmet shells, headbands, crown straps, ear covers, suspension systems, and all other components shall be hand washed using an Utility Sink.
- The manufacturer shall be consulted if stronger cleaning agents are required.
- No solvents shall be used to clean the faceshield or goggle.
- The manufacturer shall be consulted when more thorough cleaning of the faceshield or goggle is necessary.

315.13 Hood Cleaning Procedures

Wear protective gloves and eye/face splash protection. The committee shall examine the manufacturer’s label and user information provided by the manufacturer, for the instructions on cleaning the hood element. In the absence of the manufacturer’s instructions or manufacturer’s approval of alternative procedures, the following cleaning procedure shall be used:

- The Hood shall be cleaned following
  - Utility Sink Cleaning
  - Machine Cleaning
  - Contract Resource
• Hoods shall be dried in accordance with the provisions identified in Drying Procedures

315.14   Glove Cleaning Procedures

Wear protective gloves and eye/face splash protection. The committee shall examine the manufacturer’s label and user information provided by the manufacturer, for the instructions on cleaning the glove element. In the absence of the manufacturer’s instructions or manufacturer’s approval of alternative procedures, the following cleaning procedure shall be used:

• Gloves shall be cleaned following
  o Utility Sink Cleaning
  o Machine Cleaning
  o Contract Resource
• Gloves shall be dried in accordance with the provisions identified in Drying Procedures with the exception of no heat setting shall ever be used.

315.15   Footwear Cleaning Procedures

Wear protective gloves and eye/face splash protection. The committee shall examine the manufacturer’s label and user information provided by the manufacturer, for the instructions on cleaning the glove element. In the absence of the manufacturer’s instructions or manufacturer’s approval of alternative procedures, the following cleaning procedure shall be used:

• Footwear shall not be machined washed
• Footwear shall be cleaned following
  o Utility Sink Cleaning
  o Contract Resource
• Footwear shall be air dried in a clean, dry, well ventilated area.
• Footwear shall not be machine dried.

316   REPAIR

Due to the complex nature of repairs and the liability associated with making them, the Mayer Fire Department shall use Contract Resources to facilitate all repair work as well as alterations and modifications.

317   ISSUING and STORAGE

317.1   Issuing

The ensemble or ensemble elements that are to be issued shall be inspected to confirm they are in a serviceable condition. The ensemble or ensemble
element shall be properly fitted to the member receiving the equipment. Member shall receive adequate training for the donning, doffing, limitations, care and, maintenance of each element. The member shall receive a copy of the manufacturer’s instructions for each element and, a copy of this standard operating procedure (see section 311). Member shall acknowledge and document that they have received the manufacturer’s instructions and, a copy of this standard operating procedure. Member shall also document having received training for the donning, doffing, limitations, care and, maintenance of each element.

317.2 Short Term Storage

Ensembles or ensemble elements that are issued but not in use shall be stored or transported as follows:

- Not exposed to direct sunlight
- Not exposed to long term UV producing lights
- Not kept in airtight containers
- Ensemble elements shall not be stored or transported where they can be contaminated with fluids, solvents, fuels, fuel vapors or other contaminates
- Ensemble elements shall not be stored or transported in compartments or trunks where they can be damaged by other tools or equipment
- Soiled or contaminated elements shall handled as per Chapter 1, item 6

317.3 Long Term Storage

Ensembles or ensemble elements that are not issued shall be stored as follows:

- Not exposed to direct sunlight
- Not exposed to long term UV producing lights
- Not kept in airtight containers except when new and never issued
- Ensemble elements shall not be stored where they can be contaminated with fluids, solvents, fuels, fuel vapors or other contaminates
- Ensemble elements shall not be stored in compartments or trunks where they can be damaged by other tools or equipment
- Ensemble elements shall not be stored at temperatures below −40c or above 82c.
- Storage area shall be clean, dry and, well ventilated

Ensemble elements shall be clean and dry before being placed into storage.
318  RETIREMENT and DISPOSITION

318.1  Retirement

Ensembles or ensemble elements shall be retired and removed from service when they are worn or damaged to the extent that they can no longer be repaired. Ensembles or ensemble elements shall be retired and removed from service when they are worn or damaged to the extent that repair is not cost effective. Ensembles or ensemble elements shall be retired and removed from service when they are contaminated to the extent that decontamination is not possible, unsafe, or not cost effective. Ensembles or ensemble elements may be retired at any time they are no longer of use to this organization even though they are still serviceable. Retirement shall be determined by a member of this organization who has received specialized training in the inspection and repair of ensembles and ensemble elements. Recommendations for retirement can also be made by a Contract Resource however; final determination shall be made by a member of this organization who has received specialized training in the inspection and repair of ensembles and ensemble elements.

318.2  Disposition

Ensembles or ensemble elements that have been retired shall be destroyed or disposed of in such a manner that prevents their use in fire fighting or other emergencies. Ensembles or ensemble elements that have been retired but are still serviceable may be used for training provided that the training does not involve live fire fighting.

- Retired ensembles or ensemble elements that are used for training shall be marked in such a way that would prevent their being used for live fire fighting.
Upon the removal of the ensemble or ensemble elements from the member, the senior member of this organization who is present shall take custody of each element.

- Universal precautions shall be utilized before handling any element involved in the event.
- This member shall act to preserve each element from unnecessary handling and further damage.
- This member shall document the time and circumstances as soon as possible.
- This member shall secure each element and maintain custody until relieved by a more senior member of this organization.

Each element shall be secured in a paper bag or cardboard box and sealed with tamper proof tape.

- At no time shall elements be placed in an airtight container except when contaminated with a hazardous material.

Every time custody of the ensemble or ensemble elements is transferred, the transfer shall be witnessed and documented. As soon as possible, if safe, custody of the ensemble or ensemble elements shall be transferred to law enforcement having jurisdiction and secured as evidence. Custody of each element shall be maintained until the investigation or litigation is concluded.
410 **Purpose**
The Mayer Fire Department is responsible to maintain the appearance and operation of all Mayer Fire District property. This especially applies to the equipment purchased and used in the protection of life and property. Members of the department shall be charged with performing preventative maintenance and minor repairs of department equipment in order to assure their proper function and to insure the longevity of department property.

411 **Overview**
Every SCBA and RIC Bag owned by the Mayer Fire District shall be inspected to varying degrees on a daily and weekly basis following the guidelines set forth in the attached SCBA inspection forms.

412 **Documenting the Daily SCBA Check Off**
Documenting the daily check off should be done on the Apparatus Maintenance Check Off Sheet as depicted in section 112.1 of this manual Daily Check Clarification.

413 **Daily SCBA and Equipment Check Off Clarification**
Every SCBA shall be check on a daily basis to ensure that the SCBA is functioning properly. The daily check off should be a very simple procedure and shouldn’t take more that a few minutes per SCBA. The completion of daily SCBA checks shall be noted with a check mark in the appropriate column on the Daily Equipment Check Sheet (the daily SCBA check off shall include the RIC Bag). The proper way to accomplish a daily SCBA check is as follows:

**Visually check all of the major components of the SCBA.**
- All straps and buckles that make up the harness systems on both pack and mask
- Check the connection between the pack and bottle. Ensure that it is hand tightened to prevent any leakage when the SCBA is turned on.
- Check the connection between the pack and mask.
- Check for any major damage that may prevent the SCBA from functioning properly.

**Turn the SCBA on and place the mask on your face.**
- Check the HUD*, regulator, and bypass for proper function.
- Check the PASS* device and panic button for proper function.
- Check the VAS* for proper function.
- Ensure the air pressure is visible on the Control Console*

**Ensure the Bottle is at the appropriate pressure**
- When bottle pressure drops below 4000 psi, the bottle should be refilled.
- Return the SCBA to the ready state.
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<tr>
<th>Station</th>
<th>Date</th>
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<tr>
<td>Pack #</td>
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<tr>
<td><strong>Backpack/Frame</strong></td>
<td><strong>Frame/Harness</strong></td>
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<td><strong>Shoulder/Wait Straps</strong></td>
<td><strong>Face Shield</strong></td>
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<td><strong>Bottle Harness</strong></td>
<td><strong>Face Seal</strong></td>
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<td><strong>Bottle Connection</strong></td>
<td><strong>HUD</strong></td>
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<td><strong>Mask Connection</strong></td>
<td><strong>Speaker</strong></td>
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<td><strong>Speaker/Digital Readout</strong></td>
<td><strong>Regulator</strong></td>
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<td><strong>Buddy Breather/RIC Fitting</strong></td>
<td><strong>Bypass</strong></td>
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<td><strong>Pack Hours</strong></td>
<td><strong>Connection to Pack</strong></td>
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415 Annual SCBA and Equipment Quarterly Check Off Clarification
The annual checks shall be accomplished by a qualified SCBA technician. The SCBAs will be inspected and positive pressure checked by our SCBA maintenance provider. Each tech will be responsible for the quarterly check off of their designated SCBAs. At this time a thorough inspection and cleaning shall take place. The date on which these quarterly inspections take place is entirely up to the designated Tech, so long as each SCBA is inspected once every quarter. This should include, but is not limited to:

- Inspection and testing of all components including buddy breathing and quick fill systems.
- Inspection of harness systems.
- Inspection and tightening of all screws and bolts
- Inspection and lubrication of all O-rings
- Inspection of batteries and replacement if necessary (Note: Batteries shall be replaced four at a time. (At no time shall all eight batteries be removed from the battery case.)

After each weekly inspection, the corresponding form/forms shall be sent to the SCBA folder on the Z-Drive.

416 After Use Inspection and Cleaning
Every SCBA and Mask shall have a basic inspection and cleaning after every use. The inspection will be identical to the daily SCBA and equipment check off. The cleaning will be as follows:

Wipe down all SCBA components with a damp rag. No chemical cleaning agent should be used to clean the SCBA.

The Mask’s will be cleaned using the three orange buckets, located at each station.
- Bucket #1 – Fill with water and put a small amount of mild dishwashing soap in the bucket.
- Bucket #2 – Fill with water only (this is the rinsing bucket)
- Bucket #3 – Fill with water and add a cap full of AERO disinfectant.

Briefly dip each mask into the corresponding bucket 1-3. Repeat the process if necessary to clean the mask fully.

417 SCBA Technician Information
For technicians needing a more detailed diagram of the ISI Viking SCBA, see the manual at each station in the firefighters office.
418 SCBA Labeling, Reserve, and Out of Service Packs
All SCBA's are labeled with a number and designated apparatus (i.e. E22-1, E23-2). Each station shall have a spare small and large mask. Reserve packs will be housed at Station 22. When placing a pack or mask O.O.S. the entire SCBA will be placed O.O.S. and replaced with a reserve pack. When a SCBA is O.O.S. the SCBA program coordinator must be notified by email and the pack placed at Station 22 with a loss property damage repair form explaining the deficiency.

419 RIC Bag Check Off Clarification
The Mayer Fire District currently has two RIC Bags. It is the on duty crew’s responsibility to conduct the daily check of both RIC bags. This includes checking for proper function of the RIC Bag and making sure the bag contains all of the necessary tools (ie. rope, hand tools, and flashlight).

The monthly checks of the RIC bag will be accomplished by a qualified SCBA technician.

420 Documentation
There three types of documentation associated with the Mayer Fire District SCBA program. These include: weekly checks, annual checks, and Equipment Loss/damage repair forms. The daily equipment check sheets will be turned into the SCBA maintenance officer.

421 Records
All records pertaining to SCBA maintenance should be kept for a minimum of seven years and on the Z-Drive.

422 Glossary and Terms
HUDD – Heads up display
PASS – Personal Alarm Safety System
VAS – Voice Amplification System
Control Console – This unit is on the shoulder harness of the pack and contains the digital pressure readout, and the VAS speaker

423 SCBA Damage/Repair Form
When writing up an out of service SCBA please use the Equipment Loss/Damage form and an out of service tag on the SCBA. The form is found in the Mayer Fire Vehicle and Equipment Policy and Procedures Manual on the Z-Drive.

424 Annual SCBA Fit Test
Fit Testing will be performed annually on all personnel who are certified to enter IDLH atmospheres.