

**THE BALTIMORE COUNTY  
VOLUNTEER FIREMEN'S  
ASSOCIATION**



***STANDARDS***

**August 2017**

## REVISION HISTORY

SECTION CHANGED	DATE CHANGED	REMARKS
Article I, Section 17: Baltimore County Electrical Specifications	19 Nov 1987	Added new section
Article I, Section 17: Baltimore County Electrical Specifications	6 April 1995	Updated
Article I, Section 21: Standards for Advanced Life Support Units	19 April 2001	Added new section
Article IV, Section 7	10 April 2008	Changed FO I requirement to take the class vice obtain certification
Article I, Sections 2, 3, 4, 5, 7, 9, 11, 13, 18	15 May 2008	Updated Minimum Standards for Tank Trucks, Truck/Towers, Rescue for Truck Companies, Heavy-Duty Rescue Units, Brush Trucks, Special Units, Ambulance/Medic Units, Emergency Utility Units, & Tanker Support Units
Article I, Section 1, 7, & 9 Article, Section Drug Testing	21 Aug 2008	Updated Minimum Standards for Pumper & Pumper/Tanker, Brush Units, & Special Units Update to add 72-hour report time and Fit test requirement
Article I, All Sections	18 Dec 2008	Eliminate itemized listing of medical supplies for each standard and replace with First Responder Equipment Standard
Article II, Section 1	19 Feb 2009	Updated list of EMS equip for 1 <sup>st</sup> Responder Units
Article I, Section 1	21 Oct 2009	Added two 2-1/2 x 1-1/2 reducers to the Minimum Standards for Pumper & Pumper/Tanker
Article I, Section 3 & 4	15 April 2010	Combine Section 3 (Truck Standards) & 4 (Rescue Standards for Truck Companies) into one and eliminate section 4
Article I: Section 3, 5, & 6	19 Aug 2010	Update to Truck Companies, Heavy –Duty Rescue Units, & Floodlight Units,
Overarching document	May 2011	Consolidated all Articles into one document and updated all sections as outlined above
Article I: Section 1	May 2016	Updated hose inventory Increase SCBA from four to five Included Safety vests Removal of several small tools i.e. hatchet
Article I: Section 6	16 March 2017	Removed Floodlight Standard & renumbered sections
Article I: Section 6	17 Aug 2017	Added option for forestry hose in place of booster line on Brush Units.



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## ARTICLE I - APPARATUS STANDARDS

### Section 1 – Minimum Standards for Pumper and Pumper/Tanker

Every Pumper or Pumper/Tanker Combination placed in service after January 1, 2005 shall have a class A pump rated no less than 1000 gpm and a water tank of no less than 500 gallons for pumper and no less than 1000 gallons for pumper/tanker combination. Every pumper and pumper/tanker combination must carry the following equipment.

#### A. HOSE

1. 1000 feet of 4 inch or 5 inch Supply hose.
2. 400 feet of 1-¾ or 2 inch hose. Must be double jacket rubber lined fire hose coupled.
3. 200 feet of 2 ½ inch hose. Must be double jacket rubber lined fire hose coupled.
4. 200 feet of 3 inch Supply Hose.
5. Two, Hard sleeves 10-foot length, minimum diameter to be determined by the rating of the pump.
  - a. 750 gpm: 4 ½ inch diameter
  - b. 1000 gpm: 5-inch or 6-inch diameter
  - c. 1250 gpm or greater: 6-inch diameter

#### B. NOZZELS, FITTINGS, ADAPTERS, ETC.

1. Three, 1-½ inch shutoff nozzles with a minimum flow of 150 gpm capable of discharging both a straight stream and fog pattern.
2. One, 2 ½ inch shutoff nozzle capable of discharging 250 gpm capable of discharging both a straight stream and fog pattern.
3. One Stack tip shut off nozzle with 1 inch, 1-1/8 inch and 1-1/4 inch tips
4. One, 2-½ inch single gate valve
5. One, Humat or Hydrant Device
6. One, 2-½ inch to 1½ inch gated Wye or one water thief.
7. Two 2 ½ inch to 1 ½ inch reducers
8. Two, 2 ½ inch double female connection.
9. Two, 2 ½ inch double male connections.
10. Two, 4 inch stortz to 5 inch stortz adapters
11. Two, adjustable hydrant wrenches
12. Four, combination spanner wrenches for 2 ½ inch and 1-½ inch couplings.
13. Four, 4 inch or greater spanner wrenches
14. One, 2 ½ inch female to 4-inch stortz or 5 inch stortz
15. One, 2 ½ inch male to 4-inch stortz or 5 inch stortz
16. One, 1 ½ inch double male
17. One, 1 ½ inch double female
18. One, rubber hammer

#### C. LADDERS, PIKE POLES, AXES, ETC.

1. One, 24-foot fire department extension ladder (solid or truss beam)
2. One, 12-foot or 14-foot roof ladder (solid or truss beam).
3. One, 10-foot folding ladder (attic ladder)
4. Two, pike poles (one 6 foot and one 8 foot minimum)

5. Two, axes, one pick head and one flathead (6lb.).
6. One, claw tool (halligan tool) or pry ax.
7. One, crowbar (36 inch minimum) or a pry bar.
8. One, pair of bolt cutters (24 inch minimum)

**D. BREATHING APPARATUS**

1. Five, Baltimore County Approved self-contained positive pressure breathing apparatus. (Minimum of 45 min. rating).
2. One, spare air cylinder shall be carried for each SCBA.

**E. HANDLIGHTS**

1. Three, Rechargeable hand lights

**F. EXTINGUISHERS, ETC.**

1. One, CO2 extinguisher (no less than 20lbs)
2. One, dry chemical extinguisher (no less than 20 lbs)
3. One, pressurized water extinguisher (2 ½ gallon)

**G. SALVAGE AND MISCELLANEOUS EQUIPMENT**

1. Two, salvage covers (8 foot by 8 foot minimum)
2. One, flat shovel.
3. One, spade or pointed shovel
4. One, broom
5. One, forestry rake (metal)
6. One, 12-quart metal bucket
7. One, 100-foot length of ½ inch nylon rope (Utility)
8. One, exhaust fan capable of 3200 CFM or higher (explosion proof) or PPV fan
9. Absorbent/5 gallon pale of Absorbent or 2 Bags of Fluff
10. Four, Red Bio-Hazmat waste bags
11. Five, Reflective Safety Vests

**H. EMERGENCY MEDICAL EQUIPMENT:** Emergency medical supplies meeting the First Responder Equipment Standard of the Baltimore County Volunteer Firemen's Association.

**I. TOOL BOX OR BOXES CONTAINING THE FOLLOWING**

1. Assortment of screwdrivers (common and Phillips head).
2. One, 8-inch adjustable wrench
3. One pair, vice-grips.
4. One pair, lineman's pliers or diagonal cutters
5. One, 14-inch pipe wrench.
6. One, 2-pound ball-peen hammer.
7. One, claw hammer.
8. One set, open-end box wrenches (suggest ½ to 1 ½ inch)
9. One pair, 8-inch common slip joint pliers.

**J. HIGH-RISE PACK**

1. 100 feet of 1 ½ inch or 1 ¾ inch hose
2. One, 5-foot length of 2 ½ or 3 inch hose
3. One, Adjustable Shutoff nozzles with minimum flow of 150 gpm
4. One, 2-½ inch wye to (2) 1 ½ inch gated male
5. Two, Combination spanners wrenches (2 ½ to 1 ½ inch)
6. Eight, Doorstops

**K. WARNING BELL:** All apparatus shall have a means of communication from the rear of the engine to the driver (bell, buzzer, intercom, portable/mobile radio etc.)

**L. BACK-UP ALARM:** Unit shall be equipped with an operative back-up alarm.

**M. AUTHORIZATION:** Every Pumper/Pumper Tanker must be certified as an authorized emergency vehicle, under the requirements of the Transportation article of the Annotated code of Maryland by the Department of Transportation. The unit shall be equipped with emergency lighting and audible warning devices.

**N. COMMUNICATIONS:** The unit shall be equipped to Baltimore County Fire Service Specifications. Each Pumper shall carry one (1) Mobile Radio and (4) portable radios.

**O. OPTIONAL EQUIPMENT:** (to be inspected if carried)

1. K-tool or Rabbit Tool
2. CO Meter (Single to four gas). Document calibration date during inspection
3. Hydraulic Rescue Tools/Equipment. Document Make & Model during inspection.
4. Thermal Imaging Camera. Document Make & Model during inspection.
5. Personal Flotation Devices (PFDs)

**P.** The following information shall be validated and/or recorded each year during the inspection:

1. Unit #
2. Knox Box Key
3. Lock Box for Knox Box Key
4. Current Pump Test Date
5. Date Inspected
6. District Representative Name & Signature
7. Company Officer Name & Signature

## **Section 2 – Minimum Standards for Tank Trucks**

No Tank Truck shall exceed the gross vehicle weight ratings set forth by the U.S. Department of Transportation and shall comply with the provisions of the Maryland Motor Vehicle Code as to registration as an authorized emergency vehicle, and to all other applicable provisions of that Code. They shall carry the following equipment:

### **A. HOSE**

1. 200' of 2 ½" double-jacket, rubber-lined fire hose, NST coupled.

### **B. FITTINGS AND ADAPTERS**

1. Two, 2 ½" double-female connector
2. Two, 2 ½" double-male connectors
3. Two, spanner wrenches
4. One, adjustable hydrant wrench

### **C. HANDLIGHTS**

1. Two, electric, 3-volt minimum

### **D. FIRE EXTINGUISHER**

1. One, approved, Class B or C

**E. MEDICAL EQUIPMENT:** Emergency medical supplies meeting the First Responder Equipment standard of the Baltimore County Volunteer Firemen's Association.

### **F. TANK**

1. Capacity, minimum usable, 1000 U.S. gallons
2. Connections, two, 2½" NST, located conveniently for emptying and filling tank
3. Swash partition, at least one

### **G. PUMP, PERMANENTLY MOUNTED**

1. Capacity, minimum 500 gpm.
2. All valves must be operable from pump operator's position or other accessible location where necessary controls are located.

**H. COMMUNICATIONS:** Units shall be equipped to Baltimore County Fire Service specifications.

**I.** The following information shall validated and/or recorded each year during the inspection:

1. Unit #
2. Current Pump Test Date
3. Date Inspected
4. District Representative Name & Signature
5. Company Officer Name & Signature



### **Section 3 – Minimum Standards for Truck Companies**

**MISSION STATEMENT:** The overall mission of the Truck Company shall be to provide the Baltimore County Fire Service and surrounding areas with the equipment and trained manpower to assist in securing an incident as directed.

**APPLICABLE PUBLICATION:** The following publications are considered to be a part of this specification to the extent referenced. Publications herein defined, any be referenced in text in their abbreviated format;

- Baltimore County Electrical Specifications
- Maryland State Firemen’s Association By-Laws
- National Electrical Manufacturers Association
- Baltimore County Fire Department Standard Operating Procedures

**SAFETY STATEMENT:** Nothing in this specification shall be cause for or construed to allow unsafe practices in the use or operation of the apparatus and equipment identified in this specification. Items such as proper storage and handling of fuels, proper grounding of electrical equipment, and observation of safe practices in the handling and operation of all equipment are assumed to be fundamental concepts of this document.

**EQUIVALENCY STATEMENT:** In evaluating apparatus, tools or equipment for compliance with the requirements of this specification, an equivalency shall be determined and documented is such equipment is found to provide the same strength, abilities, capabilities and other such pertinent features as that which has been specified. In instances where ready determination cannot be made, the Chairperson of the Rescue Committee of the Baltimore County Volunteer Firemen’s Association shall appoint a committee of two individuals of research and investigate the equipment. The report of the committee shall be returned to the full Rescue Committee within two months of their appointment for a final vote. Only companies having units affected by this specification will be eligible to cast a vote. Final determination regarding equivalency requests shall be recorded in the minutes of the Rescue Committee and shall be individually documented to the Company(ies) affected.

Truck Companies shall consist of at least the minimum following items, carried on a motorized apparatus of sufficient capacity to carry same with four (4) crew members without being overloaded. The unit shall be equipped with a hydraulically operated aerial and/or platform (basket). Minimum height fully extended shall be not less ninety (90) feet, and shall be complete with not less than one hundred sixty-three (163) feet of ground ladders. The aerial device shall be subject to a yearly non-destructive test performed by a certified aerial ladder testing firm, and provided a certificate of certification.

#### **GENERAL SPECIFICATIONS**

##### **A. BREATHING APPARATUS (S.C.B.A.)**

1. Five, self-contained positive pressure breathing apparatus (Bureau of Mines approved for fire service use with forty-five minutes rating minimum) with low pressure alarm and/or timer. Each S.C.B.A. will be equipped with a P.A.S.S. device meeting NFPA specifications.
2. One, spare air cylinder shall be carried for each S.C.B.A.

**B. FIRE EXTINGUISHERS**

1. One, 10 pound B/C carbon dioxide
2. One, 20 pound B/C dry powder/chemical
3. One, Pressurized Water, two and one-half gallon

**C. FANS**

1. One, Exhaust type (explosive proof), minimum airflow rating 5000 CFM each.
2. One, positive-pressure fan (gas or electric)

**D. AXES**

1. Three, pick-head 6 lbs.
2. Two, flathead

**E. BARS**

1. Two, Halligan type
2. One, 30" (short) pinch point
3. One, 60" (long) pinch point

**F. HOOKS**

1. Two, pike poles, 6 feet, hook end
2. Two, pike poles, 8 feet, hook end
3. Two, pike poles, 12 feet, hook end
4. One, Closet hook

**G. FORCIBLE ENTRY**

1. One, K-Tool or equivalent
2. One, Rabbit tool type hydraulic forcible entry door opener or equal

**H. SAWS**

1. One, gasoline or electric chain saw with a minimum 16 inch bar and spare chain
2. One, gasoline powered circular saw with assorted spare blades and fuel
3. One, Reciprocating saw

**I. SLEDGE HAMMERS**

1. Two 12 pound steel

**J. COMMUNICATIONS**

1. Unit to be equipped to Baltimore County Fire Service specifications
2. Intercom between turntable and top of aerial or platform
3. One- Mobile 800 MHz radio
4. Four- Portable 800 MHz radio w/carrying case

**K. ELECTRICAL**

1. One, 6 kilowatt generator
2. Unit must have at least 200 watts of exterior lighting.
3. Two, 200 foot wire reels with minimum 12/3 braided wire
4. Two hundred feet, minimum 14/3 braided wire divided into suitable working lengths.

5. Two, junction boxes
6. Three, 500 watt floodlights
7. Five, hand-lights (battery or rechargeable)
8. Assorted pigtail adapters.

#### **L. SALVAGE**

1. Five, covers, 10 x 10 feet minimum
2. Two, floor runners, 3 x 18 feet minimum
3. Two, brooms, sweep
4. Two, mops, cloth type with handles
5. Two, squeegees, with handles
6. One roll of tar paper and/or plastic
7. One, quantity of wood lathes (optional)
8. Two, rolls of tape, 2 inches wide (duct-type)

#### **M. SEARCH EQUIPMENT**

1. One thermal imager

#### **N. SHOVELS**

1. Two, flat long handle
2. Two, scoop long handle

#### **O. PICKS**

1. One, point and chisel type
2. Two, tunneling

#### **P. MISCELLANEOUS**

1. Two, pitch forks
2. One, chimney ball on chain and/or scraper
3. One, electric submersible pump

#### **Q. ROPE RESCUE EQUIPMENT**

1. Utility type, nylon or dacron construction (not to be used for high angle rope rescue).
2. Two, lengths, ½” x 100 feet
3. Four lengths, ½” x fifty feet.
4. Rescue grade for high rope rescue (static kernmantle) minimum diameter ½” meeting NFPA standard.
5. Two lengths, ½” x 300 feet
6. Four, figure eight devices, 10,000 pound rated (aluminum).
7. Six, carabiners, 9,000 pound rated (steel)
8. Two, NFPA class II seat style harnesses
9. Two, NFPA class III harnesses
10. Six, webbing, nylon 1”, assorted lengths
11. Three, sets, Prussiks (53” and 65”)
12. Two pulleys, (two inch minimum)
13. One. Line throwing Gun
14. Pulley assembly or “Thayer-Plane” for stokes basket evolution (optional)

**R. LADDER BELTS**

1. Four, pompier belts, assorted sizes

**S. RESCUE CHAINS**

1. One, length, 15' each, 10mm (3/8"), 6600 pound test at 90 degrees with hooks and/or rings
2. One, length, 10' each, 10mm (3/8"), 6600 pound test at 90 degrees with hooks and/or rings

**T. CHISELS**

1. Two, cold chisels, 8 inch
2. Assorted masonry chisels

**U. STABILIZATION:** Units shall carry the following sections of rough cut oak or suitable hardwood for cribbing.

1. Twelve, 4" x 4" x 12"
2. Eight, 4" x 4" x 18"
3. Four, 6" x 6" x 12"
4. Four, 6" x 6" x 18"
5. Four, 4" x 4" wedges
6. Two Rescue Struts (Optional but Recommended)

**V. CUTTING TOOLS**

1. One, oxygen acetylene, exothermic or Petrogen cutting set including hose, cutting torch, tips, cutting rods, tip cleaner, goggles and welding gloves.

**W. GEAR, LIFT/RESCUE**

1. One, Come-A-Long, 1 ½ ton capacity, chain type
2. One, four ton Porta-Power with basic attachments or "Rabbit Tool" (Optional)
3. One, ten ton Porta-Power with basic attachments (Optional)
4. One, twelve ton hydraulic jack or high-pressure air bag
5. One, twenty ton hydraulic jack or high pressure air bag.

**X. WATER RESCUE EQUIPMENT**

1. Five, USCG approved, type III personal floatation device, equipped with whistles and visual identification markers (i.e., cyalume light sticks, battery powered strobes, etc.)
2. Four, Polypropylene rope throw bags
3. One, 300' Polypropylene rope with 5000# breaking strength

**Y. VEHICLE/MACHINERY RESCUE TOOLS**

1. One, rescue tool, gasoline or electric powered to include the following attachments:
2. One, Power Unit
3. Spreading jaws with 18,000 pounds of force
4. Cutting tool with 38,000 pounds of force
5. One, ram 30" inch minimum with 29,000 pounds of force
6. All necessary hoses, chains, shackles and fluid
7. Necessary equipment to operate 2 tools simultaneous

**Z. ELEVATOR RESCUE EQUIPMENT**

1. One, elevator pole
2. Assorted elevator keys
3. One, Lock-out/Tag-out Kit

**AA. BUCKETS**

1. Two, 14 quart metal type

**BB. BOLT CUTTERS**

1. Two, bolt cutter, manual or hydraulic, capable of cutting 5/8" of hardened steel.

**CC. BLANKETS**

1. One, wool
2. One, Fire resistant (Nomex or PBI)

**DD. AIR MONITORING EQUIPMENT**

1. One, Multi-gas Meter (LEL, O2 & CO)

**EE. SEARCH MANAGEMENT EQUIPMENT**

1. One, Binoculars 7 x 35 Power
2. One, ADC Map Book Baltimore County

**FF. RIT EQUIPMENT**

1. RIT bag per Baltimore County Fire Service Specifications
2. One Master search rope bag with knotted rings at every 10' (100')
3. Four 50' personal search rope bags (50')
4. RIT Tarp

**GG. SMALL TOOLS**

1. Two, 24 ounce ball-peen hammer
2. One, Claw hammer
3. One, electrician's pliers
4. One, 12 inch channel-lock pliers
5. One, 7 inch vise-grip pliers
6. One, 8 inch slip-joint pliers
7. One, hacksaw with spare blades
8. Six, assorted screwdrivers (Phillips and straight)
9. One, 12 inch Stilson wrench
10. One, 14 inch Stiltson wrench
11. One, 12 inch adjustable wrench
12. One, 3/8 inch electric drill and assorted bits
13. One, 3/8 inch drive standard socket set
14. One, 3/8 inch drive metric socket set
15. One, open end wrenches (3/8 inch to 1 inch)
16. One, set of Allen wrenches
17. One, key hole saw
18. One, tin snips

**HH. EMERGENCY MEDICAL EQUIPMENT:** Emergency medical supplies meeting the First Responder Equipment standard of the Baltimore County Volunteer Firemen's Association.

**II. STRETCHERS**

1. One, Stokes basket with 4 point sling
2. One, full backboard
3. One, LSP half backboard or KED

**JJ. HOSE AND HOSE APPLIANCES**

1. One, ladder pipe and/or fixed monitor (600 gpm minimum) to the basket with stream discharge pipe. (Tips 1 ¼", 1 ½", 1 ¾")
2. One, master stream variable pattern nozzle. GPM flow by aerial unit specifications.
3. Two, eighty (80) feet lengths of rope with hooks for aerial ladder pipe ground operations, unless equipped with a remote nozzle.
4. One, two inlet 2 ½" clapped siamese with drain, unless equipped with a waterway.
5. One, minimum 2 ½" gate type shut off valve for Siamese, unless equipped with a waterway.
6. One, 100 foot length double jacketed, rubber lined hose for aerial ladder pipe operations, unless equipped with a waterway.
7. Four, hose straps, unless equipped with a waterway.
8. One, hose or equipment hoist.
9. One, hydrant wrench.
10. Four, combination spanner wrenches.
11. One, 2 ½" cellar nozzle with applicator.
12. Two, 2 ½" double male.
13. Two, 2 ½" double female.
14. One, 2 ½" to 1 ½" reducer.
15. One, 50 foot length of hose to fit submersible pump discharge.

**KK.** The following information shall validated and/or recorded each year during the inspection:

1. Unit #
2. Date Inspected
3. District Representative Name & Signature
4. Company Officer Name & Signature

**Section 4 – Reserved**

## **Section 5 – Minimum Standards for Heavy-Duty Rescue Units**

**MISSION STATEMENT:** The overall mission of the Heavy-Duty Rescue Unit shall be to provide the Baltimore County Fire Service with the equipment, manpower and expertise to deal with or assist in dealing with incidents presenting individuals who are unable to remove themselves from situations hazardous to their health and well-being.

**APPLICATION PUBLICATIONS:** The following publications are considered to be a part of this specification to the extent referenced. Publications herein defined may be referenced in text in their abbreviated format.

1. Baltimore County Electrical Specifications
2. Maryland State Firemen’s Association By-Law, Article “F”-“Minimum Standards, Rescue Companies
3. Standard on Fire Services Life Safety Rope, Harnesses and Hardware: NFPA 1983-1985
4. National Electrical Manufacturers Association
5. OSHA 1912.0: Confined Space, Trench Rescue

**SAFETY STATEMENT:** Nothing in this specification shall be cause for or construed to allow unsafe practices in the use or operation of the apparatus and equipment identified in this specification. Items such as proper storage and handling of fuels, proper grounding of electrical equipment, and observation of safe practices in the handling and operation of all equipment are assumed to be fundamental concepts of this document.

**EQUIVALENCY STATEMENT:** In evaluating apparatus, tools or equipment for compliance with the requirements of this specification, an equivalency shall be determined and documented, if such equipment is found to provide the same strength, abilities, capabilities and other such pertinent features as that which has been specified. In instances where ready determination cannot be made, the Chairperson of the Rescue Committee of the Baltimore County Volunteer Firemen’s Association, shall appoint a committee of two individuals to research and investigate the equipment. The report of the committee shall be returned to the full Rescue Committee within two months of their appointment for a final vote. Only companies having units affected by this specification will be eligible to cast a vote. Final determination regarding equivalency requests shall documented to the Company(ies) affected.

Heavy Duty Rescue Units shall consist of at least the following items, carried on a motorized apparatus of sufficient capacity to carry the same without being overloaded. All operating personnel shall wear appropriate protective clothing suitable for the type of emergency situation to which the unit is assigned.

### **GENERAL SPECIFICATIONS:**

#### **A. BREATHING APPARATUS:**

1. Four self-contained positive pressure breathing apparatus (Bureau of Mines approved 45 minute rating minimum) with low pressures alarm and/or timer.
2. All breathing apparatus shall be equipped with a personal (distress) alerting device.
3. One spare air cylinder shall be carried or each breathing apparatus carried.
4. Two, one hour bottles will also be carried, in addition to the other minimum bottle requirements.



**B. FIRE EXTINGUISHERS**

1. One 4A-20BC (minimum), multi-purpose dry chemical
2. One 10 BC (minimum), carbon dioxide
3. One, 2-1/2 gallon water can

**C. VENTILATION FANS**

1. One exhaust type (explosion proof) minimum airflow rating 5,000 CFM
2. Positive Pressure Fan (Gas or electric)

**D. AXES**

1. One- Pick-head 6 pound
2. One- Flathead
3. One- Pry ax

**E. BARS**

1. Two- Halligan type 30"
2. One- Pinch point, short 30"
3. One- Pinch point, long 60"

**F. HOOKS**

1. Two- Pike type poles, six foot, hook end
2. Two- Pike type poles, eight foot, hook end
3. One- Closet hook

**G. FORCIBLE ENTRY**

1. One- "K" tool type lock cylinder removal kit
2. One- Rabbit tool type (or equal) hydraulic forcible entry door opener

**H. SAWS**

1. One rescue saw, gasoline powered circular saw, with fuel and assorted spare wood, abrasive and metal)
2. One- Ventilation saw
3. One- Chain saw (gas or electric)
4. Two- Reciprocating saws
5. One- Pruning or trimming saw
6. One- Circular saw, electric (7"-8")

**I. SLEDGEHAMMERS**

1. One-Eight pound steel
2. One-Twelve pound steel
3. One- Eight pound non-sparking

**J. COMMUNICATIONS: Unit shall be equipped per Baltimore County Fire Service Specifications**

1. One- Mobile 800 MHz radio
2. Four- Portable 800 MHz radio w/carrying case

**K. ELECTRICAL EQUIPMENT**

NOTE: The flowing equipment shall conform to the current edition of the Baltimore County Electrical Specifications as adopted by the Baltimore County Fire Department and the Baltimore

County Volunteer Firemen's Association. Those specifications shall be considered as a part of this specification except as herein modified.

1. Generator
  - a. One or more- AC generator(s) with a single or combined capacity of 15 kilowatts. At least one generator shall be stationary and mounted to the vehicle.
  - b. 2000 watts exterior lighting shall be distributed around the principal or primary working areas of the vehicle in order to assure a safe working area.
2. Wire Junction Boxes, Plugs and Receptacles
  - a. 110 Volt Systems
    - i. Two- Primary hot lines with a maximum of 200' of cord each. Current capacity of the cord shall be at least 20 amperes
    - ii. 500 Feet of extension cords, divided into working lengths of 50 or 70 feet. Current capacity of each cord shall be at least 18 amperes (**NOTE:** 75' is maximum length allowed by the Baltimore County Electrical Specifications)
    - iii. Three- Male NEMA L-5 15 amp to female 3 prong house adaptors.
    - iv. Three- Female NEMA L-5 15 amp to male 3 prong house adapters.
    - v. Two- Junction boxes, arranged with one 20 ampere, 125 volt, NEMA L-5, male plug, with no more than four 15 ampere, 125 volt, NEMA L-5 receptacles.
    - vi. Eight- Portable floodlights (300 watt minimum) with NEMA L-5 connectors
    - vii. Five- Portable hand-lights (battery or rechargeable).
    - viii. (**Optional**) Two- 220 volt AC 30 amp receptacles. One receptacle shall be mounted on each exterior side of the unit at an accessible point.
  - b. If 220 volt system is utilized (**Optional, In lieu of 110 volt system**):
    - i. 300' secondary hot line, with a maximum of 150' of cord each. Current capacity of the cord shall be at least 20 amperes.
    - ii. Two- Primary 4-way junction boxes arranged with one 30 ampere, 220 volt NEMA L-14, male plug, with no more than four 20 ampere, 125 volt, NEMA L-5 receptacles.
    - iii. Four- Secondary junction boxes arranged with one 20 ampere, 125 volt. NEMA L-5 male plug, with no more than three 15 ampere, 125 volt, NEMA L-5 receptacles.

**L. SALVAGE EQUIPMENT:**

1. Two salvage covers 10x10
2. One roll of tar paper or plastic
3. (Optional) Wood lathe

**M. SEARCH EQUIPMENT**

1. One thermal imager

**N. LADDDERS**

1. One 24' extension, fire service rated
2. One 14' roof, fire service rated
3. One 10' folding type (attic), fire service rated

**O. VEHICLE MOUNTED EQUIPMENT**

1. One- 20,000 pound capacity, truck mounted winch with 150' of improved plow steel, rated wire rope. Wire rope shall be 6 x 19IWRC, 5/8" nominal diameter. The end of the wire rope shall be finished with a rated loop or the manufacturer's approved equipment attachment device.

**P. SHOVELS**

1. Two, flat long handle
2. Two, scoop long handle
3. Two, Trenching/tunneling shovels

**Q. PICKS**

1. One, point and chisel type

**R. PUMPS**

1. One submersible pump, electric, with a 50' discharge hose

**S. HIGH ANGLE RESCUE EQUIPMENT**

1. Utility type, nylon or dacron construction (not to be used for high angle rope rescue).
  - a. One, lengths, ½" x 100 feet
  - b. Two, Lengths ½" x 50 feet
2. Rescue grade for high rope rescue (static kernmantle) minimum diameter ½" meeting NFPA standard.
  - a. Two lengths, ½" x 300 feet
3. Four, figure eight devices, 10,000 pound rated (aluminum).
4. Twenty, carabiners, 9,000 pound rated (steel)
5. Four, NFPA class II seat style harnesses
6. Two, NFPA class III harnesses
7. Eight, webbing, nylon one inch, assorted lengths
8. Six, sets, Prussiks (53" and 65")
9. Four pulleys, (two inch minimum)
10. One. Line throwing Gun

**T. RESCUE CHAIN:**

1. Two- 15' x 3/8" (10mm) lengths. Rated chain /6,600 lbs. test at 90 degrees with clevis hooks and/or rings
2. Two- 10' x 3/8" (10mm) lengths, Rated chain/6,600 lbs. test at 90 degrees with clevis hooks and/or rings
3. Two- 12 ton anchor shackles/ Rated for 12 ton

**U. CHISELS**

1. One- Air chisel with assorted chisel points
2. One- Regulator and air line for portable/remote operations
3. One- Set of assorted masonry chisels

**V. CRIBBING/STABILIZATION:** Comprised of the following sections of rough cut Douglas Fir, Southern Pine or Oak

1. Sixteen- 4" x 4" x 18" wood cribs
2. Twelve- 6" x 6" x 18" wood cribs
3. Four- 2" x 4" x 18" wood wedges
4. Four- 2" x 6" x 18" wood wedges
5. Four- 36" Step Chocks
6. Rescue Struts (RECOMMENDED)

## **W. CUTTING TOOLS**

1. One, oxygen acetylene, exothermic or Petrogen cutting set including hose, cutting torch, tips, cutting rods, tip cleaner, goggles and welding gloves.

## **X. LIFTING/STABILIZATION EQUIPMENT**

1. Lifting system , capable of providing a minimum lift height of 40". The system shall be comprised of one of the following:
  - a. One- Boom/crane with a lift capacity of 10,000 lbs.
  - b. Two medium pressure air bags with a lift capability of 10,000 lbs. each
2. One set of air bags. The system shall provide a combines lift capability of 100 tons. Minimum of a four bag set. Each bag to have one ground pad sized according to the bag size.
3. One, four ton Porta-Power with basic attachments or "Rabbit Tool" (Optional)
4. One, ten ton Porta-Power with basic attachments (Optional)
5. One- 50 ton Porta power pump and ram (Optional)
6. Two 15 ton manual or hydraulic jacks
7. Two 10 ton snatch blocks, 5/8" wire rope type, with safety hook
8. One, Chain come-a-long- 1-1/2 ton capacity.

## **Y. WATER RESCUE EQUIPMENT**

1. Five personal floatation devices, U.S.C.G. approved Type III, equipped with whistles and visual identification markers (i.e., light sticks, battery powered strobes, etc.)
2. Four throw bags, with 75' of polypropylene rope
3. One 300' length, polypropylene water rescue rope, minimum breaking strength 5,000 lbs.

## **Z. VEHICLE/MACHINERY RESCUE TOOLS**

1. One, rescue tool, gasoline or electric powered to include the following attachments:
  - a. Two, Power Unit- Heavy rescues must have at least 1 portable unit
  - b. Spreading jaws with 18,000 pounds of force
  - c. Cutting tool with 38,000 pounds of force
  - d. One, Ram 30" minimum with 29,000 pounds of force
  - e. One, Ram 60" minimum with 29,000 pounds of force
  - f. All necessary hoses, chains, shackles and fluid
  - g. Necessary equipment to operate 2 tools simultaneous

## **AA. ELEVATOR RESCUE EQUIPMENT**

1. One, elevator pole
2. Assorted elevator keys
3. One, Lock-out/Tag-out Kit

## **BB. BUCKETS**

1. Two, 14 quart metal type

## **CC. BOLT CUTTERS**

1. Two, bolt cutter, manual or hydraulic, capable of cutting 5/8" of hardened steel.

## **DD. BLANKETS**

1. One, wool
2. One, Fire resistant (Nomex or PBI)

**EE. AIR MONITORING EQUIPMENT**

1. One, Multi-gas Meter (LEL, O2 & CO)

**FF. SEARCH MANAGEMENT EQUIPMENT**

1. One, Binoculars 7 x 35 Power
2. One, ADC Map Book Baltimore County

**GG. RIT EQUIPMENT**

1. RIT bag per Baltimore County Fire Service Specifications
2. One Master search rope bag with knotted rings at every 10' (100')
3. Four 50' personal search rope bags (50')
4. RIT Tarp

**HH. SMALL TOOLS**

1. Two, 24 ounce ball-peen hammer
2. One, Claw hammer
3. One, electrician's pliers
4. One, 12 inch channel-lock pliers
5. One, 7 inch vise-grip pliers
6. One, 8 inch slip-joint pliers
7. One, hacksaw with spare blades
8. Six, assorted screwdrivers (Phillips and straight)
9. One, 12 inch Stilson wrench
10. One, 14 inch Stiltson wrench
11. One, 12 inch adjustable wrench
12. One, 3/8 inch electric drill and assorted bits
13. One, 3/8 inch drive standard socket set
14. One, 3/8 inch drive metric socket set
15. One, open end wrenches (3/8 inch to 1 inch)
16. One, set of Allen wrenches
17. One, key hole saw
18. One, tin snips
19. Two- 25' Tape measures

**II. EMERGENCY MEDICAL EQUIPMENT:** Emergency medical supplies meeting the First Responder Equipment standard of the Baltimore County Volunteer Firemen's Association.

**JJ. STRETCHERS**

1. One, Stokes basket with 4 point sling
2. One, full backboard
3. One, LSP half backboard or KED

## **Section 6 – Minimum Standards for Brush Units**

- A. Brush units shall consist of at least the following items carried on a motorized apparatus of sufficient capacity to carry same without exceeding the gross vehicle weight rating of the vehicle. All personnel shall wear regulation fire department protective clothing. The unit shall be so designed as to perform the following functions:
1. The unit must be self supporting, not dependent on a Class A pumper to operate.
  2. Special attention must be given to prevent designing a brush unit around a small chassis so that the fully equipped unit does not exceed the gross vehicle weight rating of the vehicle.
  3. The unit must be equipped with four-wheel drive for off-road capability.
- B. HOSE**
1. Minimum of 50' of 1½" hose
  2. Minimum of 200' of 5/8" or ¾" booster line on a reel or 1" forestry line pre-connected to the pump.
- C. PUMP**
1. The pump must be driven by the vehicle engine or separate fuel powered motor with an extra 2½" gallon fuel can.
  2. During the annual equipment inventory, all brush units shall demonstrate the ability to pump.
  3. The pump must be capable of delivering no less than 60 gallons per minute (gpm).
- D. TANK**
1. Brush units shall have a minimum booster tank capacity of 60 gallons
- E. NOZZLES, FITTINGS, ADAPTORS, ETC.**
1. Minimum of 5/8" or ¾" booster nozzle, combination straight stream and spray(fog).
  2. One, adjustable hydrant wrench.
  3. Two, combination spanner wrenches for 2½" and 1½" couplings.
  4. Two, spanner wrenches for booster line couplings.
  5. One 2 1/2" female to 1 1/2" male reducer
- F. TOOL AND MISC. EQUIPMENT**
1. One, pickhead ax (6 lbs.)
  2. One, pry bar (36" minimum).
  3. One, bolt cutter (24" minimum).
  4. One, wheel chock.
  5. One, pointed shovel.
  6. One, fire broom and one fire rake.
  7. One, tool box containing assorted tools.
  8. Two, 6'chains of greater than or equal to the winch cable rating.
- G. EMERGENCY MEDICAL EQUIPMENT:** Emergency medical supplies meeting the First Responder Equipment standard of the Baltimore County Volunteer Firemen's Association.
- H. WINCH**
1. A winch and cable rated at least the gwv of the vehicle.
  2. One pulley of winch cable size.

**I. HANDLIGHTS**

1. Minimum of one battery powered hand light (3 volt minimum)

**J. EXTINGUISHERS**

1. One, approved portable fire extinguisher, fire department type, the variety shall be suitable for Class A, B, and C fires, 5 lb. Minimum size.
2. One, 5 gallon backpack pump (Indian Tank)

**K. BACK-UP ALARM:** All brush units shall be equipped with an operative back-up alarm

**L. SAFETY DEVICES**

1. If the passenger compartment is not enclosed, a roll bar will be installed
2. A seat belt will be provided for all occupants.

**M. AUTHORIZATION:** Every brush unit must be certified as an authorized emergency vehicle, under the requirements of the Transportation Article of the Annotated Code of Maryland by the Department of Transportation. The unit shall be equipped with emergency lighting, and audible warning devices.

**N. This standard shall apply to all brush units placed in service after January 1, 1990.**

**O. COMMUNICATIONS:** Brush Units shall be equipped to Baltimore County Fire Services specifications.

**P.** The following information shall validated and/or recorded each year during the inspection:

1. Unit #
2. Date Inspected
3. District Representative Name & Signature
4. Company Officer Name & Signature

## Section 7 – Minimum Standard for Air Units

### A. COMPRESSOR PACKAGE

The compressor package shall consist of a compressor and purification system in a single package. The purification system shall be mounted on a compressor utilizing a welded steel frame.

#### 1. Compressor

The compressor shall be new and built in the United States. It shall be rated at 15 CFM at 5,000 psig with a generator rated at 120/140 volts, 3-phase, 60 Hz. The compressor shall be powered by a combustion-type engine rated at 15 HP. The compressor package shall come equipped with:

- a. An on-off switch. On-off switch shall be keyed to lock unit
- b. Magnetic starter with thermal overload breakers
- c. Circuit breaker with manual reset
- d. NEMA certified motor
- e. Totally enclosed belt guard
- f. Dry type intake filter
- g. Inter- and after- coolers
- h. Automatic condensate trap system which shall unload every 30 minutes and at shutdown for continuous operation
- i. Low oil pressure shutdown switch
- j. High temperature shutdown switch
- k. Pressure safety valves on all stages, in case of mechanical malfunction
- l. Pressure gauges on all stages of compressor
- m. Oil pressure gauge
- n. Electric hour meter
- o. A check valve shall be located between discharge of compressor and inlet of purification system to check flow of air between mechanical filter and final stage of compressor.

All pressure gauges and the hour meter shall be located on a control console on the front of the compressor. The compressor shall be air cooled, 4-stage, 4-cylinder radial design with air cooled inter-stage and after-stage cooler safety relief valves, water and oil separator between 2<sup>nd</sup> and 3<sup>rd</sup> stage, and 3<sup>rd</sup> and 4<sup>th</sup> stage, and the discharge of the 4<sup>th</sup> stage after-cooler.

#### 2. By-Pass Manifold

The system shall come equipped with a by-pass manifold. The purpose of the by-pass manifold is to divert flow of air from the purification system to the truck mounted cascade system. The by-pass manifold shall have, located downstream of the shut-off valve to the mobile cascade system, a 5000 psig pressure gauge and a 5000 psig rated ASME relief valve, which will be preset at 3650 psig. The by-pass manifold shall terminate in a quick-disconnect nipple, with dust cap.



## **B. AIR PURIFICATION SYSTEM**

1. The air purification system and all components shall be new and built in the United States. The purification system shall have its own separate mechanical filter which will unload automatically, as well as with a manual drain valve.
2. The mechanical filter shall be rated at 10 microns nominal with an absolute rating of 15 microns.
3. The condensate from the mechanical filter shall be plumbed, using high pressure tubing, into the same condensate drain line as the compressor.
4. The balance of the chambers in the purification system shall include:
  - a. One, complex set of cartridges which shall be packed with 13X Molecular Sieve, Charcoal, opcalite and Sodacarb
  - b. The system shall be capable of removing water and oil, vapor, carbon monoxide and carbon dioxide from the discharge air.
  - c. The system shall come equipped with a 10,000 psig pressure gauge.
  - d. The system shall have a relief valve set at approximately 150 psig above the operating pressure of the purification system.
  - e. The purification system will also have a color change indicator with its own shut-off valve for monitoring the dew point of the air.
  - f. The system shall also contain a back-pressure regulator, which will not allow pressure to flow from the purification system until the pressure in the purification system exceeds 3500 psig. The back-pressure regulator shall be located downstream of the purifier chamber.
  - g. A shut-off valve shall be located downstream from the back pressure regulator.
  - h. The purification system shall process a minimum of 60,000 cubic feet of air between cartridge changes. One set of cartridges shall be delivered with the purification system.

## **C. CHARGING STATION (Minimum, four bottles)**

The charging station shall consist of a chamber which shall act as a fragmentation deflector. The fragmentation deflector shall be fabricated from 3/8" thick steel and allow for adequate venting of air through the bottom. The charging station shall have:

1. Instrumentation on the charging station shall include a self-relieving pressure regulator, a supply air pressure gauge, a gauge showing the regulated pressure and one pressure gauge to record the pressure of bottles being filled.
2. Air supplied to the bottles being filled via short high pressure hosed assemblies, which shall include a combination filler, shutoff and vent valve. The hose assemblies shall be restrained in their stowed position to prevent whipping and shall terminate in OGA 1340 fittings with hand-tight nut and soft seat. Separate scuba yoke adapters shall be located between the above mentioned shut-off valves and the hose assemblies to allow swivel in the hose while attaching the hoses to the air pack bottles.
3. By-pass relief valve for filling bottles over the rated 2600 psi to 3450 psi.

**D. GENERAL**

1. All stainless steel tubing utilized for interconnecting the compressor, the purification system and charging station shall be 300 series Stainless Steel, fully annealed and suitable for bending and flaring. All tubing shall terminate in 37° flare fittings. Wall thickness shall be .049” minimum.
2. All hand-operated valves shall be of the needle or globe variety. They shall be stainless steel and contain soft seats and be rated at 5000 psig, with a 4:1 safety factor.
3. All high pressure hose shall be rated at 5000 psig with a 4:1 safety factor.
4. All test reports, instruction manuals, a complete set of operating instructions of the breathing air process package and a written document showing the principle of operation of the total system shall be turned over to the fire department when the package is delivered.
5. The total package shall meet all of the safety requirements of OSHA, the Compressed Gas Association, and the National Fire Protection Association. Air purity of the system shall meet at least the requirements of Grade “D” of the Compressed Gas Association Commodity Specification G-7.1, even at the time of replacement of the cartridge in the purification system.
6. Four bottles, 3500 psi, tested and mounted according to Department of Transportation procedures.
7. A separate 50’ hose assembly, including a quick-disconnect coupler and dust cap, the hose assembly itself, a shut-off valve, and hand-tight nut with OGA 1340 adapter and dust cap, shall be provided for charging stationary cascade system.

**E. COMMUNICATIONS:** Unit shall be equipped to Baltimore County Fire Service specifications.

## Section 8 – Minimum Standards for Special Units

A Special Unit shall be any motorized apparatus of any size, so designed as to perform a special function or meet a special need, which could not be performed or met by apparatus now in service by a Member Company. The Special Unit may be designed so that it may be dependent upon a pumper for its function, but not so that a pumper must depend upon the Special Unit to be able to function. Special attention must be given to prevent designing a Special Unit around a small chassis, so that the fully equipped Special Unit does not exceed the GVW rating of the vehicle. The following minimum standards must be met:

### A. AUTHORIZATION

Every Special Unit must be certified as an Authorized Emergency Vehicle, under the requirements of the Motor Vehicle Code of the Annotated Code of Maryland, by the Department of Transportation.

### B. The Special Unit may carry any equipment which is required to meet its purpose of design or function. The Special Unit must carry:

1. One, portable fire extinguisher, fire department type, suitable for use on Class A, B, or C fires.
2. One, electric hand light (minimum 3 volts).

### C. MEDICAL EQUIPMENT: Emergency medical supplies meeting the First Responder Equipment standard of the Baltimore County Volunteer Firemen's Association.

### D. HOSE

1. Special Units may carry hose of any diameter, but all hose carried must be tested and approved, as required by these By-Laws.
2. If the Special Unit carries hose of a diameter other than carried by Baltimore County pumpers, then it must also carry all fittings needed for proper hook-up with Baltimore County pumpers.

### E. WATER MANIFOLD

A water manifold, if carried, shall be independent of any pump permanently mounted on the unit. If it is used for the distribution of water to hand lines or monitor pipes, then the manifold and all fittings and piping associated with it shall be or have:

1. Hydro statically tested to a pressure of 400 psi for a period of one hour.
2. A relief valve.
3. A compound gauge
4. Individual gauges for all outlets.
5. Individual shutoff valves for all outlets.

### F. HANDLINES FROM MANIFOLD

If a Special Unit is equipped with a manifold for the distribution of water to hand lines, then such hand lines shall:

1. Be a minimum of 150' in length.
2. Be a double-jacket, rubber lined, fire hose, NST coupled.
3. The unit shall have a minimum of one line of 1 ½" diameter and one line of 2 ½" diameter.

G. If the Special Unit is equipped with one or more monitor pipes which are permanently mounted on the unit, and is not equipped with outriggers for stabilization, then the total gpm of the monitor or monitors may not exceed 1000 gpm.

**H. PUMP**

If the Special Unit is equipped with a permanently mounted pump in excess of 500 gpm and is used for and dependent on the distribution of water to hand lines, then the unit must meet the By-law requirements for the annual pump testing procedures in accordance with the pumps gpm rating, as set forth in the By-laws.

I. Special Unit designed to be used off the hard surface road areas inaccessible to pumpers, rescue units or ladder trucks shall:

1. Have high-flotation tires and/or dual wheels on the rear axle.
2. Four-wheel drive capability.
3. A front-mounted winch of a minimum 8,000 pounds capacity, with appropriate cable.

J. **COMUNICATION:** Special Units shall be equipped to Baltimore County Fire Service specifications.

K. The following information shall validated and/or recorded each year during the inspection:

1. Unit #
2. Date Inspected
3. District Representative Name & Signature
4. Company Officer Name & Signature

## Section 9 – Minimum Standards for Marine Units

### A. INLAND/FLOOD EVAC BOATS, Minimum Manning 2

1. Inland/Flood Evac Boats shall consist of a powerboat with the following minimum specifications:
  - a. 12 foot length
  - b. 66 inch beam
  - c. 12 inch maximum draft
  - d. 6 gal. fuel capacity
  - e. 600 lb. load capacity
2. Power: Total power shall not exceed the BIA rated capacity with a 10 horsepower minimum.
3. Safety Equipment: The vessel shall be manufactured with foam flotation and shall comply with all regulations of the U.S. Coast Guard and the MD DNR Police for boats in the appropriate class, including fire extinguishers, PFDs, signaling devices and safety gear. The following additional equipment shall be carried:
  - a. Unit shall be equipped to Baltimore County Fire Service radio specifications.
  - b. One standard trauma kit.
  - c. One marker buoy with anchor line.
  - d. One rescue throw bag.
  - e. One anchor with line.
  - f. One emergency tool kit.
  - g. One bailing device.
  - h. One waterproof hand light.
  - i. Two type III or V commercial PFDs (for FD crew)
  - j. Two type II PFDs (for civilian passengers)

### B. OPEN WATER MARINE RESCUE UNITS, Minimum Manning 2

1. Open Water Marine Rescue Units shall consist of a powerboat with the following minimum specifications:
  - a. 18 foot length
  - b. 84 inch beam
  - c. 15 inch maximum draft
  - d. 25 gal. fuel capacity
  - e. 1,200 lb. load capacity
2. Power: Total power shall not exceed the BIA rated capacity for the boat and must be able to maintain 30 knots while loaded to capacity.
3. Safety Equipment: The vessel shall be manufactured with foam flotation and shall comply with all regulations of the U.S. Coast Guard and the MD DNR Police for boats in the appropriate class, including fire extinguishers, PFDs, signaling devices and safety gear. The following additional equipment shall be carried:
  - a. One dry powder extinguisher rated 3A-40BC
  - b. One mechanical and one manual bilge pump
  - c. Binoculars (7 x 50 power)
  - d. Marine compass
  - e. Depth sounder with display screen
  - f. Marine GPS/Plotter
  - g. Four mooring lines 20' x 3/8"
  - h. One anchor with ground tackle (125' x 1/2")

- i. One emergency tool kit
- j. One boat hook or pike pole 8'
- k. Two HD boat fenders
- l. One electric horn or siren
- m. Emergency lights: red/amber flashing light system
- 4. Radio equipment:
  - a. Unit shall be equipped to Baltimore County Fire Dept. specifications
  - b. One marine VHF 25 watt all channel radio
- 5. Fire Suppression Equipment:
  - a. One fire pump, minimum flow from draft 250 gpm @ 70 psi
  - b. Fire hose: 100' x 1 3/4", 50' x 3" (may be carried in any lengths.)
  - c. Nozzles: two 1 1/2" fog min. 95 gpm, Master Stream optional
  - d. Foam: two 5 gal. cans AFFF optional
  - e. Foam eductor for above optional
  - f. One dewatering device optional
  - g. One SCBA may be carried on tow unit, optional
  - h. One 2 1/2' to 1 1/2" reducer gated Y
- 6. Rescue/EMS Equipment:
  - a. One First Responder trauma kit, one blanket
  - b. One full backboard with head restraint system and straps
  - c. One bag mask resuscitator and oxygen kit and manual suction
  - d. One extrication collar kit
  - e. Two rescue throw bags 75'
  - f. One ring buoy or rescue tube with line
  - g. One marker buoy with anchor and line
  - h. One waterproof hand light
  - i. One spot/search light, two cockpit floodlights
  - j. One grappling hook or drag bar, optional
  - k. Three type II PFDs (for civilian passengers)
  - l. Three type III PFDs (for civilian infant, child, youth)
  - m. Three type III or V commercial PFDs (for FD crew)
  - n. Three type III or V commercial float coats or workasuits PFDs
  - o. Swim platform or boarding ladder
- 7. Open water Marine Rescue Units may be stationed in a slip or lift between April 1<sup>st</sup> and November 15<sup>th</sup> at a location no more than three road miles from the home station, or they may be trailered from the home station at the discretion of the company commander at any time.

**C. OPEN WATER MARINE FIRE/RESCUE UNITS: Minimum Manning 2**

- 1. Open Water Marine Fire/Rescue units shall consist of a powerboat with an enclosed cabin which meets the following minimum specifications:
  - a. 25 foot length
  - b. 8 foot beam
  - c. 20 inch maximum draft
  - d. 70 gal. fuel capacity
  - e. 2,200 lb. load capacity
- 2. Power: Total power shall not exceed the BIA rated capacity for the boat and must be able to maintain 25 knots while loaded to capacity.

3. Safety Equipment: The vessel shall be manufactured with foam flotation and shall comply with all regulation of the U.S. Coast Guard and the MD DNR Police for boats in the appropriate class including: fire extinguishers, PFDs, signaling devices, and safety gear. The following additional equipment shall be carried:
  - a. One dry powder extinguisher rated 3A-40BC
  - b. Dual mechanical bilge pumps
  - c. Binoculars (7 x 50 power)
  - d. Marine compass
  - e. Depth sounder with display screen
  - f. Marine GPS/Plotter
  - g. Four mooring lines 25' x ½"
  - h. One anchor with ground tackle (150' x ½")
  - i. One emergency tool kit
  - j. Two boat hooks 8'
  - k. Two HD boat fenders
  - l. Two HD windshield wipers
  - m. One electric horn or siren
  - n. Emergency lights red/amber flashing light system
4. Radio Equipment:
  - a. Unit shall be equipped to Baltimore County Fire Dept. specifications
  - b. One, marine VHF 25 watt all channel radio
5. Fire Suppression Equipment:
  - a. One fire pump, minimum flow from draft 500 gpm @ 100 psi
  - b. Fire hose: 150' x 1 ¾", 50' x 3" (may be carried in any lengths)
  - c. Nozzels: Two 1 ½" fog min. 95 gpm, one Master stream 500 gpm
  - d. Foam: three 5 gallon AFFF
  - e. Foam eductor 95 gpm for above
  - f. One dewatering device, min 100 gpm
  - g. One SCBA
  - h. One ceiling hook/pike pole 6'
  - i. One pick head axzeOne 2 ½" to 1 ½" reducer gated Y
6. Rescue/EMS Equipment:
  - a. Four type II PFDs, (for civilian passengers)
  - b. Three type III PFDs, (for civilian infant, child, youth)
  - c. Four type III or V commercial PFDs, (for FD crew)
  - d. Four type III or V float coats or worksuits PFDs
  - e. One ring buoy or rescue tube
  - f. Two rescue throw bags 75'
  - g. Two marker buoys with anchor and line
  - h. Two waterproof hand light
  - i. One spot/search light
  - j. Two cockpit floodlights
  - k. One grappling hook or drag bar, optional
  - l. One swim platform or boarding ladder
  - m. One First Responder trauma kit
  - n. One full backboard with head restraint system and straps
  - o. One Miller backboard, optional
  - p. One splint set
  - q. One extrication collar kit

- r. One bag mask resuscitator and oxygen kit and manual suction kit
  - s. One burn kit, two blankets
7. Open Water Marine Fire/Rescue Units shall be stationed in a slip or lift between April 1<sup>st</sup> and November 15<sup>th</sup> at a location no more than three road miles from the home station. Off season availability (Nov. 16<sup>th</sup> thru March 31<sup>st</sup>) via trailer, will be at the direction of the company commander.

**D. SWIFTWATER RESCUE BOATS, Minimum Manning 2**

1. Swiftwater Rescue Boats shall consist of an inflatable style powerboat with the following minimum specification:
- a. 12 foot length
  - b. Multiple air chambers (3)
  - c. Self bailing hull
  - d. 30 horsepower motor with prop guard
  - e. Two flip lines
  - f. One bow line
  - g. One 3 point self equalizing anchor device for highline ops
  - h. One rescue throw bag
  - i. Two kill switch lanyards
  - j. Two fuel cells
  - k. Six paddles
  - l. Two spare props
  - m. One motor flush kit
  - n. One patch/repair kit
  - o. One manual air pump
  - p. Running lights or cyalume sticks for port/starboard
  - q. One handheld spot light
  - r. Aerial flares one for each rescuer in boat
  - s. Dye markers one for each rescuer in boat
  - t. Audible warning device
  - u. Patient transfer device (stokes, Miller board, etc.)
  - v. Baltimore County Fire Dept. radio specifications w/waterproof cover

NOTE: These standards shall apply to all Marine Units placed in service after 12/31/02. Companies are encouraged to meet all applicable standards with existing units wherever possible.



## **Section 10 – Minimum Standards for Ambulance/Medic Units**

### **A. VEHICLE**

Ambulances shall be enclosed motor vehicles of sufficient capacity and condition to safely and properly carry at least two adult, prone full backboard patients and a two person crew with all the required equipment. Any new unit purchased after January 1, 2006 must meet the above requirement.

### **B. STRETCHER, CARRYING DEVICES, LINEN & SUPPLIES**

1. One, cot with mattress and four (4) wheels with adjustable head position and at least two safety straps
2. One, auxiliary stair chair
3. Two, pillows
4. Four, sheets
5. Two, pillow cases
6. Four, towels
7. One, Orthopedic stretcher

### **C. OXYGEN, RESUSCITATION, AIRWAY MAINTENANCE & SUPPLY**

1. One, fixed liter flow system
2. One portable liter flow system
3. Three, spare portable oxygen bottles with wrench (size “D” minimum) with current hydrostatic test dates.
4. Six, nasal cannula – adult
5. Four nasal cannula - pediatric
6. Six, oxygen masks, adult non-rebreathing
7. Four, oxygen masks, pediatric rebreathing
8. Two, complete set of oropharangeal airways
9. Two, complete sets of nasopharyngeal airways
10. One, bag mask resuscitator - adult with mask
11. One, bag mask resuscitator - pediatric with mask
12. One, bag mask resuscitator – infant with mask
13. One, fixed suction unit - complete
14. One, portable suction unit battery powered - complete
15. Four, suction catheters, large (adult)
16. Four, suction catheters, small (pediatric)
17. Two, oxygen connecting tubing 7 ft
18. Four, suction catheters, Yankauer
19. Eight, water soluble lubricant
20. One pulse oximeter
21. Four tongue depressors

### **D. IMMOBILIZATION AND SPLINTING EQUIPMENT**

1. Two, full back boards
2. One, half back board
3. One, KED, complete (or equivalent)
4. Eight, nine foot straps ( or equivalent)
5. Two, adult Hare traction splints with ankle hitch

6. One, pediatric Hare transaction splint with ankle hitch
7. One, set padded board splints (2 each: 15", 36", 54")
8. Twelve, rigid cervical collars (2 each size)
9. Two, foam head blocks (or equivalent)
10. One, set patient restraints, Velcro or leather
11. One, spider strap (or equivalent)

**E. INTRAVENOUS THERAPY EQUIPMENT & SURPLUS**

1. Six, lactated ringers solution
2. Six, administration sets, macro-drip
3. Four, 24 gauge catheters
4. Four, 22 gauge catheters
5. Twelve, 20 gauge catheters
6. Twelve, 18 gauge catheters
7. Four, 16 gauge catheters
8. Four, 14 gauge catheters
9. Two, Red top vacutainer
10. Two, Purple top vacutainer
11. Six, IV Med-locks
12. Six, IV saline flushes
13. Twenty Bio-occlusive dressings
14. Two, vacutainer barrel
15. Two (2) luer adapters
16. Six, arm boards (18")
17. One box alcohol prep pads
18. Six, non-latex constricting bands
19. One, disposable sharps container
20. Four, plastic bag with biohazard label, for blood tubes

**F. DRESSING & BANDAGING SUPPLIES**

1. One, box plastic bandage strips
2. Forty-eight, sterile gauze pads (4 x 4's)
3. Four, burn sheets, sterile
4. Ten, cold packs
5. Ten, hot packs (optional)
6. Twenty, triangular bandages (cravats)
7. Thirty six, four inch wide bandages (Kling or Kurlex)
8. Nine, multi-trauma dressings
9. Six, sanitary napkins (or equivalent)
10. Six, rolls 2" tape
11. Ten, rolls 1" tape
12. One, piece, of non-adherent material for occlusive dressing

**G. ADVANCED CARDIAC LIFE SUPPORT EQUIPMENT & SUPPLIES**

1. One, ECG monitor/defibrillator with pacing capability approved by the Medical Director
2. One, patient cable
3. One, multi-function cable
4. Thirty, patient electrode sets
5. Two, Adult multi-function pads

6. Two, Pediatric multi-function pads
7. Two, batteries for monitor
8. One Battery charging unit (may be kept at station)
9. Two, rolls EKG paper
10. One, telemetry radio or 800 MHz portable radio
11. Two, Heimlich valves or complete chest decompression kits
12. Two, Intraosseus needles

## **H. MISCELLANEOUS EQUIPMENT**

1. Complete triage tag kit
2. Two, emesis basin
3. Four, sterile water, 250 ml. bottles
4. One, poison kit complete with activated charcoal
5. One Adult Epi-Pen
6. One Pediatric Epi-Pen
7. Two, O.B. kit, complete
8. One, marking pen
9. Two, trauma shears
10. Two, penlights
11. Two, stethoscopes, adult
12. One, stethoscope, pediatric (or interchangeable with an adult)
13. One, adult BP cuff, large/obese
14. Two, adult BP cuff, regular
15. One, pediatric BP cuff
16. One, box facial tissue
17. One, insect sting swabs
18. Four, bottles eye wash
19. Two, bottles hydrogen peroxide
20. One, shroud sheet
21. Two, bottles alcohol, rubbing
22. One, ring cutter
23. Four, paper cups
24. Six, tongue depressors
25. Four, sugar packets (or tube or glucose supplement)
26. Six, vital pads
27. One, 800 mhz portable radio, fire department
28. One, maps, complete (box area and ADC)
29. One, clipboard with appropriate forms
30. One, set bags or boxes, appropriate for carrying the necessary equipment to the patient (i.e., medical, trauma, airway, pediatrics, etc.)

## **I. INTUBATION KIT**

1. One, laryngoscope handle, adult
2. One, laryngoscope, handle, pediatric
3. One, set batteries, extra for each of above
4. One, set assorted adult laryngoscope blades, straight
5. One, set assorted adult laryngoscope blades, curved
6. One, set, assorted pediatric laryngoscope blades, straight
7. One, set, assorted pediatric laryngoscope blades, curved

8. Two, stylette, adult
9. One, stylette, pediatric
10. One, set assorted cuffed endotracheal tubes
11. One, set assorted uncuffed endotracheal tubes
12. One, set Magill forceps (adult and pediatric)
13. Six, water soluble lubricant
14. Two, 10cc syringes
15. Two endotracheal tube holders
16. One, roll 1" tape
17. One, tube lidocaine jelly
18. One, Xylocaine spray
19. Two, BAAM

#### **J. TOOLS AND EXTRICATION EQUIPMENT**

1. One, screwdriver 12 inch straight
2. One, screwdriver 12 inch, Phillips
3. One, wrench, adjustable, 12 inch
4. One, pliers, 8" Channel lock adjustable
5. One 10" self locking (Visegrip)
6. One Hacksaw with 3 extra bladed, wire type carbide)
7. One 3# Hammer with 15" handle (Engineer style)
8. One, Halligan bar
9. One spring loaded center punch
10. One flat head axe
11. One, rope, 50 ft., minimum diameter ½ inch
12. Two hand lights
13. Two Personal Flootation Devices (PFD)

#### **K. SAFETY EQUIPMENT**

1. One, fire extinguisher, 5 pound ABC
2. One, road safety triangles
3. One, "NO SMOKING" sign in patient compartment

#### **L. PERSONAL PROTECTIVE EQUIPMENT**

1. One, pair leather/nomex gloves per person
2. One, pair safety goggles per person
3. Two, self contained breathing apparatus (SCBA) with mask (current hydrostatic test dates)
4. One, set turnout gear per person, available and mandated on calls
5. One, safety helmet per person

#### **M. BIOHAZARD SUPPLIES**

1. One, box each size nitrile gloves
2. Six, face mask with eye shield
3. Six, protective gowns
4. Two, spray bottles of germicidal solution
5. One, box antimicrobial wipes (Vionex or equivalent)
6. Six, HEPA masks
7. Six sealable biohazard bags
8. Six large red biohazard bags

**N. DRUGS AND ADMINISTRATION EQUIPMENT**

Each medic unit will carry a quantity of each approved medication. This quantity will be specified by the B.Co.F.D. Fire Surgeon.

1. Four, Albuterol, 2.5 mg./3 ml.
2. Four, Atrovent
3. Four, Nebulizer
4. Four, Atropine 0.01%
5. Four, Dextrose 50%
5. Ten, Epinephrine, 1:10,000 - 10 ml.
6. Two, Epinephrine, 1:1000 - 1 ml.
7. One, Epinephrine, 1:1000 - 25 ml.
8. Four, Lidocaine, 2%
9. Five, Narcan, 0.4 mg./ml.
10. Two, bottles Nitro spray or tablets
11. Two, Sodium Bicarbonate
12. Two, activated charcoal
13. Four, Furosemide
14. Two, Glucagon
15. Three, Adenocard
16. Two, Diltiazem (Cardizem)
17. Two, 10cc syringe
18. Two, 20cc syringe
19. Four, 1cc syringe
20. Two, 3/5cc syringe

**O. CONTROLLED DANGEROUS SUBSTANCES**

1. Two Morphine Sulfate (10 mg each)
2. One Valium (10 mg)

**P. COMMUNICATIONS**

Unit shall be equipped to Baltimore County Fire Service specifications.

## **Section 11 – Minimum Standards for Mini-Pumpers**

### **A. MINI-PUMPERS-SHALL BE ANY MOTORIZED APPARATUS OF ANY SIZE, SO DESIGNED TO PERFORM THE FOLLOWING FUNCTIONS:**

1. Must be self-supporting, not dependent on a Class A pumper to operate.
2. Must be able to receive water and change from a tank to supply operation.
3. Must be able to gain access to areas of static water source, and other areas that are not accessible to a Class A pumper.
4. Special attention must be given to prevent designing a Mini-Pumper around a small chassis so that the fully equipped Mini-Pumper does not exceed the gross vehicle weight rating of the vehicle.
5. Off-road capabilities. The unit must be equipped with a 4-wheel drive capabilities and/or dual rear wheels. Rear wheels shall have limited slip differential.

### **B. HOSE**

1. Minimum of 750' of 2 ½" double jacket rubber lined hose coupled and loaded as supply line.
2. Minimum of 150' of 1 ½" hose preconnected to the pump, loaded as hand line.
3. Minimum of 200' of ¾" or 1" booster line loaded on a reel and preconnected to the pump.
4. Minimum of two lengths of hard suction sleeves, size to be determined by the rating of the pump.

### **C. PUMP**

1. All pumps mounted on Mini-Pumpers placed in service after August 19, 1982 must be certified to deliver a minimum of 500 gpm and have an appropriate suction from the tank.
2. The pump must be driven by the vehicle engine, and must be permanently mounted.
3. All Mini-Pumpers will be required to successfully complete an annual pump test, in accordance with those standards outlined for a Class A pumper.

### **D. TANK**

1. Mini-pumpers shall have a minimum booster tank capacity of 200 gallons.

### **E. NOZZLES, FITTINGS, ADAPTERS, ETC.**

1. If the Mini-Pumper is equipped with one or more master stream devices which are permanently mounted on the unit and the unit is not equipped with outriggers for stabilization, then the total gpm flow of these devices shall not exceed 1000 gpm if the unit is built on a chassis of one ton or less.
2. Minimum of ¾" or 1" booster nozzle, combination straight stream and spray (fog) capable of delivering not less than 30 gpm at 100 psi nozzle pressure.
3. Tow, 1 ½" shutoff nozzle, combination straight stream and spray (fog) capable of delivering not less than 60 gpm at 100 psi nozzle pressure.
4. One, 2 ½" gated wye.
5. One, 2 ½" single gate valve (hydrant gate).
6. If the unit is being utilized in areas of positive water supply, then it must be equipped with a Meushaw or Humat valve.
7. One, 2 ½" reducer wye (one, 2 ½" female connection, and two, 1 ½" connections) all connections of 1 ½" being gated, or one minimum 2 ½" water thief.
8. Two, 2 ½" double-male connections.
9. Two, 2 ½" double-female connections.

10. One, swivel connection (double-female) with pump suction hose thread on one end and 2 ½” National Standard hose thread on the other.
11. One, adjustable hydrant wrench.
12. Two, combination spanner wrenches for 2 ½” and 1 ½” couplings.
13. Two, spanner wrenches for booster line couplings.
14. Two, hose straps or rope hose tools or a combination of both.
15. If the unit is utilizing a water manifold in conjunction with 4” or larger hose, then the manifold must be tested annually to 400 psi for a period of 1 hour.

#### **F. TOOLS AND OTHER EQUIPMENT**

1. One, minimum size of 10’ attic ladder.
2. One, minimum 6’ pike pole
3. Two, axes (one pick head and one flathead or two pick heads, 6 pounds)
4. One, Halligan tool or pry ax
5. One, pry bar (minimum 36”)
6. One pair, bolt cutters (minimum 24”)

#### **G. BREATHING APPARATUS**

1. Two, self contained positive pressure breathing apparatus (Bureau of Mines approved one-half hour rating minimum with low pressure alarm and/or timer)
2. One, spare cylinder shall be carried for each mask.
3. No filter type masks shall be carried on any apparatus

#### **H. HANDLIGHTS**

1. Minimum of two electric handlights (3 volt minimum).

#### **I. EXTINGUISHERS**

1. One, approved portable fire extinguisher, fire department type, the variety shall be suitable on Class A, B, and C fires, 10 lb. minimum size.
2. One, 5 gallon backpack pump (Indian pump)

#### **J. MISCELLANEOUS EQUIPMENT**

1. One, flat or pointed shovel.
2. Two, fire brooms or fire rakes.
3. One, first aid kit (24-unit fire department assortment or equivalent)
4. One, 100’ length of 3/8” nylon rope.
5. One, tool box containing the assortment as stated in the specifications for a Class A pumper

#### **K. WARNING BELL**

1. All Mini-Pumpers shall have a means of communications from the rear step to the driver (bell, buzzer, etc.)

#### **L. BACKUP ALARM**

1. All Mini-Pumpers shall be equipped with an operative backup alarm

**M. AUTHORIZATION:** Every Mini-Pumper must be certified as an authorized emergency vehicle, under the requirements of the Transportation Article of the Annotated Code of Maryland by the Department of Transportation. The unit shall be equipped with lighting and audible warning devices.

**N. COMMUNICATION:** Unit shall be equipped to Baltimore County Fire Service specifications.



## **Section 12 – Minimum Standards for Emergency Utility Units**

Shall be any motorized vehicle used by a member company that is not covered under any other section of this Article.

**A. UNIT MAY BE EQUIPPED WITH FOUR WHEEL DRIVE (OPTIONAL)**

**B. EQUIPMENT**

1. One, approved Class ABC portable fire extinguisher, 5 lb. size minimum
2. One, lantern type hand light (battery or rechargeable)

**C. EMERGENCY MEDICAL EQUIPMENT:** Emergency medical supplies meeting the First Responder Equipment standard of the Baltimore County Volunteer Firemen's Association.

**D. COMMUNICATION:** Unit shall be equipped to Baltimore County Fire Service specifications.

**E. WARNING DEVICES:** All utility units shall have Maryland MVA approved warning lights and audible devices.

**F. AUTHORIZATION:** Every emergency utility unit must be certified as an authorized emergency vehicle, under the requirements of the Transportation Article of the Annotated Code of Maryland by the Department of Transportation.

**G. THIS SECTION SHALL APPLY TO ALL UTILITY UNITS PLACED IN SERVICE AFTER JANUARY 1, 1991.**

**H.** The following information shall validated and/or recorded each year during the inspection:

1. Unit #
2. Date Inspected
3. District Representative Name & Signature
4. Company Officer Name & Signature

## **Section 13 - Minimum Standards for Foam Units**

Foam units shall consist of at least the following items, carried on a motorized apparatus of sufficient capacity to carry same without exceeding the gross vehicle weight rating of the vehicle. All personnel shall be wearing regulation fire department protective clothing.

### **A. TANK**

1. Minimum of 500 gallons of foam
2. Water (optional)

### **B. HOSE**

1. 400 ft. of 1 ¼" attack line
2. 150 ft. of 2 ½" attack line
3. 300 ft. of 3" supply line

### **C. NOZZLES, FITTINGS & ADAPTORS**

1. One, 1 ½" constant flow nozzle
2. One, 1 ½" foam nozzle
3. One, 2 ½" foam nozzle

### **D. BREATHING APARATUS (SCBA)**

1. Two, self-contained positive pressure breathing apparatus (Bureau of Mines approved for fire service use with one-half hour rating minimum) with low pressure alarm and/or timer.
2. One, spare air cylinder shall be carried for each SCBA

### **E. HANDLIGHTS**

1. One, lantern type hand light (battery or rechargeable)

### **F. TOOLS**

1. One, tool box containing assorted tools.

### **G. EXTINGUISHER**

1. One, approved class ABC portable fire extinguisher, (10 lb. minimum)

### **H. FIRST AID**

1. One, 24 unit industrial first aid kit or equivalent

**I. COMMUNICATIONS:** Unit shall be equipped to the Baltimore County Fire Service specifications.

**J. ALARM BACKUP:** All foam units shall be equipped with an operative backup alarm.

**K. WARNING DEVICES:** All foam units shall have Maryland MVA approved warning lights and audible devices.

**L. AUTHORIZATION:** Every foam unit must be certified as an authorized emergency vehicle under the requirements of the Transportation Article of the Annotated Code of Maryland by the Department of Transportation.

**M. THIS SECTION SHALL APPLY TO ALL FOAM UNITS PLACED IN SERVICE AFTER  
JANUARY 1, 1991**

## Section 14 – Minimum Standards for Rescue Response Vehicles

The Rescue Response Vehicle is to be utilized as a means of transporting personnel and minimal equipment on Rescue Assignments when a Heavy Duty Rescue Unit or Truck Company is out of service for repairs, etc. This unit is not to be confused with a Reserve Rescue Squad.

**A.** Hydraulic Rescue Tool with the following:

1. Spreaders
2. Cutters
3. Hydraulic Ram (30” or 60”) (\*\*)
4. Proper set of chains and hooks for hydraulic tools
5. Portable power unit for hydraulic tool capable of power tool unassisted.
6. Proper spare fluid and hardware

**B.** One, Come-A-Long 1.5 ton (cable or chain)

**C.** Auto glass removal tools

**D.** Assorted small hand tools

**E.** One, portable air chisel with spare tips

**F.** One, long pry bar or Halligan bar

**G.** Four, step chocks or equivalent amount of cribbing

**H.** One, ten ton Porta-Power with attachments (\*\*)

**I.** Two, air bags with air supply, regulator, and controls (\*\*)

**NOTE:** Items marked with (\*\*) are for Heavy Rescue Companies

**NOTE:** These are minimum requirements **only**. It will be the option of the Rescue or Truck Company to carry additional equipment.

**J.** Communications: Unit shall be equipped to the Baltimore County Fire Service specifications.

**K.** Every Rescue Response Vehicle must be certified as an authorized emergency vehicle under the requirements of the Transportation Article of the Annotated Code of Maryland by the Department of Transportation.

**L.** Warning Devices: All Rescue Response Vehicles shall have Maryland MVA approved warning lights and audible devices.

**Section 15 – Minimum Standards for Reserve Rescue Squads**

**RESERVED**

## Section 16 – Baltimore County Electrical Specifications

The following are the specifications for the electrical systems on all units to be utilized by ALL companies in Baltimore County and those that respond into Baltimore County. These specifications will be used to update all standards, specifications, SOPs, and By-Laws used in the Baltimore County Fire Department and by the Baltimore County Volunteer Firemen’s Association. Also, they will be used during the bid process in replacing all existing systems or equipment.

### SUBSECTION

- A. GROUNDING SYSTEMS
- B. GROUNDING FAULT CIRCUIT INTERRUPTERS
- C. GENERATORS
- D. ELECTRICAL WIRE (110 Volt System)
- E. PLUGS AND RECEPTACLES (110 Volt System)
- F. APPLIANCES (110 Volt Systems)
- G. ELECTRICAL WIRE (220 Volt Systems)
- H. PLUGS AND RECEPTACLES (220 Volt Systems)
- I. APPLIANCES (220 Volt Systems)
- J. WIRING
- K. ANNUAL TESTING
- L. TRAINING
- M. GENERAL INFORMATION
- N. ELECTRICAL DIAGRAMS

**A. GROUNDING SYSTEM.** The Electrical Subcommittee has determined through meetings and correspondence that it is safer for all personnel to have the generator on our apparatus isolated (not grounded to earth). It is felt that grounding rods which are being used by some companies are, for the most part, ineffective and could actually be more dangerous. This is because grounding rods carried on our equipment are generally not long enough (should be 6 to 8 feet into earth), and are also not the correct size or made of the correct material. In addition, there are several obvious problems with using grounding rods effectively, such as paved or frozen surfaces, unknown earth conditions, and other outside influences that can bear upon the system. However, we do recommend that requirements of Section 250-6 (Portable and Vehicle Mounted Generators) of the National Electrical Code (NFPA #70) be followed. We also recommend that all grounding of generators to earth policies be discontinued.

**B. GROUND FAULT CIRCUIT INTERRUPTERS (GFCI or GFI).** The effective use of GFCIs on the fire ground has been questioned in past years. Several companies have been using GFCIs extensively since 1991 and there have been no reports of nuisance tripping on the fire ground. As the name implies, if they do trip, it is the direct result of something wrong with the circuit. Nuisance tripping of GFCIs protected devices during wet conditions can be avoided by using watertight plugs and connectors. The GFCI may be any of the following types: circuit breaker, receptacle, or portable. GFCI provided as part of the circuit breaker offers the most protection, although this design must be weighed against the loss of power to all electrical appliances on that breaker. Per Code of Federal Regulations (CFR 29, Section 1910.304), all portable generators over 5KW must provide GFCI protection.

**C. GENERATORS.** The size of generators on apparatus shall be determined by the maximum anticipated wattage load to be placed on it.

Portable Generators	minimum 3,000 watts
Engines (if carried)	minimum 3,000 watts
Trucks	minimum 12,000 watts
Rescue/Floodlights/Squads	minimum 15,000 watts

**NOTE:** If adopted, this section would require that all new or replacement apparatus placed in service after July 1, 1988 would comply with these requirements.

**D. ELECTRICAL WIRE (120 Volt System)**

- Hot lines (from apparatus to junction box) shall be a single piece in length at a maximum of 200 feet. In addition, shall be a minimum of 12/3 type SO, 600v braided (strand) wire with a current capacity of at least 20 amps.
- Extension cords (from junction box to appliance) shall be a minimum of 12/3 type SO, 600v braided (strand) wire with a current capacity of at least 20 amps and a maximum length of 75 feet.
- Appliances (110v) shall be wired in accordance with the manufacturer's recommendation, when not supplied with any wire, a minimum of 14/3 type SO, 600v braided (strand) wire shall be used with the ground wire (green) grounded to the appliance case.
- Pigtails shall use a minimum of 12/3 type SO, 600v braided (strand) wire.
- Wire from generator to the panel box or mounted receptacles shall conform to NFPA #70 to include stranded copper wire and weather resistant type connectors only. Aluminum wire, BX, Romex, and E.M.T. cables shall be prohibited.

**E. PLUGS AND RECEPTACLES (120 VOLT SYSTEM)**

- Portable generator mounted receptacles shall use 20 amp, 125v, L5 (NEMA configuration) receptacles.
- Vehicle mounted receptacles shall use 20 amp, 125v, L5 (NEMA configuration) receptacles with weather proof cover.
- Hot lines shall use 20 amp, 125v, L5 (NEMA configuration) plugs.
- Extension cords shall use 15 amp, 125v, L5 (NEMA configuration) plugs.
- Appliances (120v) that operate at greater than 12 amps shall have 20 amps, 125v, L5 (NEMA configuration) plugs (e.g., 120v Hurst tool pump, 20" fan, etc.)
- Appliances (120v) that operate at 12 amps or less shall have 15 amp, 125v, L5 (NEMA configuration) plugs, (e.g., circle D's, 16" fan, submersible pump, water vac, etc.

7. Junction boxes shall have a 20 amp, 125v, L5 (NEMA configuration) male plug with no more than (4) 15 amp, 125v, L5 (NEMA configuration) receptacles.
8. It is recommended that all junction boxes provide GFCI protection unless the source is already GFCI protected as outlined in Section II.

**NOTE:** This subsection includes all combination junction boxes and appliances (e.g., Junc-a-lite, etc.)

**F. APPLIANCES (120 Volt).** All lights, junction boxes, cord reels, etc., shall be U.L. listed and shall be three-wire from the manufacturer or use the manufacturer's conversion kit to change from two-wire to three-wire. All appliances shall also be case grounded (ground wire is attached to the appliance case). (Exception: Tools which are double insulated will be acceptable)

**G. ELECTRICAL WIRE (240 Volt System)**

1. Primary hot lines (from apparatus to 4 way junction box) shall be a single piece in length at a maximum of 200 feet. In addition shall be a minimum of 10/4 type SO, 600v braided (strand wire with a current capacity of at least 30 amps.
2. Secondary hot lines (from 4 way junction box to 3-way junction box) shall be a single piece in length at a maximum of 200 feet. In addition shall be a minimum of 12/3 type SO, 600v braided (strand) wire with a current capacity of at least 25 amps.
3. extension cords (from 3-way junction box to appliance) shall be a minimum of 14/3 type SO, 600v braided (strand) wire with a current capacity of at least 18 amps and a maximum length of 75 feet.
4. Appliances (240v) shall be wired in accordance with the manufacturer's recommendation. When not supplied with any wire, a minimum of 10/4 type SO, 600v braided (strand) wire shall be used with the ground wire (green) grounded to the appliance case.
5. Appliances (120v) shall be wired in accordance with the manufacturer's recommendations. When not supplied with any wire, a minimum of 14/3 type SO, 600v braided (strand) wire shall be used with the ground wire (green) grounded to the appliance case.
6. Pigtails shall use a minimum of 12/3 type SO, 600v braided (strand) wire.
7. Wire from generator to the panel box or mounted receptacles using 2440v shall conform to NFPA #70 to include strand wire and weather resistant type connectors only. Aluminum wire, BX, Romex and E.M.T. cables shall be prohibited.

**H. PLUGS AND RECEPTACLES (240 VOLT SYSTEM)**

1. Vehicle mounted receptacles shall use 30 amp, 120v/240v, L14 (NEMA configuration) or 20 amp, 120v/240v, L5 (NEMA configuration) receptacles with weatherproof covers.
2. Primary hot lines shall use 30 amp, 120v/240, L14 (NEMA configuration) plugs.
3. Secondary hot lines shall use 20 amp, 125v, L5 (NEMA configuration) plugs Extension cords shall use 15 amp, 125v, L5 (NEMA configuration) plugs.
4. Appliances (240v) shall use 30 amp, 120v/240v, L14 (NEMA configuration) plugs, (e.g., 240v Hurst tool pump, 1500w quartz lights, etc.)
5. Appliances (120v) that operate at greater than 12 amps shall have 20 amps, 125v, L5 (NEMA configuration) plugs, (e.g., 120v Hurst tool pump, 20' fan, etc.)
6. Appliances (120v) that operate at 12 amps or less shall have 15 amp, 125v, L5 (NEMA configuration) plugs, (e.g., Circle D's, 16" fan, submersible pump, water vac, etc.)
7. Primary 4-way junction boxes shall have a 30 amp, 120v/240v, L14 (NEMA configuration) male plug with no more than two (2) 20 amp and two (2) 15 amp, 125v, L5 (NEMA configuration) receptacles.



8. Secondary 4-way conjunction boxes shall have a 20 amp, 125v, L5 (NEMA configuration) male plug with no more than three (3) 15 amp, 125v, L5 (NEMA configuration) receptacles, and one (1) GFCI household receptacle.

**NOTE:** This subsection includes all combination junction boxes and appliances, (e.g.. Junc-a-lite, etc.)

**I. APPLIANCES** (240 Volt). All 240v appliances shall be U.L. listed and shall be case grounded (ground wire is attached to the appliance case).

**J. WIRING.** All wire (both 3 wire and 4 wire) shall be wired by the following methods.

1. Ground shall utilize the green wire and is attached to the “G” post of the plug (green screw) or to the case of the appliance.
2. Neutral shall utilize the white wire and is attached to the “W” post of the plug (silver screw).
3. Hot(s) shall utilize the black and/or red wire and is attached to the “X” and “Y” posts of the plug [brass screw(s)]. In 120v systems, there will only be a black wire and in 240v systems, there will be both black and red wires.

**K. ANNUAL TESTING**

All units shall be tested to the following checks annually:

1. Continuity test to assure that all appliances are properly grounded (case grounding).
2. Polarity checks of all wire and receptacles to assure that connections have been made properly in regards to polarity and ground.
3. GFCIs shall be tested at least bi-annually.

**L. TRAINING.** It is highly recommended that electrical evaluations and understanding of electrical systems used in the fire service be included in all basic training programs (1001 and Recruit class), and be included as part of the summer program and in Battalion drills. You can relate an electrical system to that of a pumper, whereas the generator is the pump and all of the 20 amp and 30 amp circuits are your supply lines, and the junction boxes are your manifolds. Anything that you would use with your hands is going to be 15 amp connection and should be protected with GFCI. This will assure that all personnel maintain an understanding of this important part of fire ground operations and that we will continue to operate in a safe and effective manner.

**M. GENERAL INFORMATION**

1. APPLIANCES

<u>APPLIANCE</u>	<u>WATTS USED</u>	<u>AMPS USED</u>
Circle ‘D’ Light	300	2.5
Circle “D” or Quartz Light	500	4.2
Quartz Light (120v)	1500	13.6
Quartz Light (240v)	1500	6.8
Water Vac	830	6.9
16” Fan Running	792	6.6
20” Fan Running	1680	14.0
Submersible Pump	1440	12.0
Hurst Tool Pump (120v)	2460	22.0
Hurst Tool Pump (240v)	1320	11.0

**NOTE:** Watts divided by Volts equals Amps (W / V = A)

## 2. WIRE

### a. Recommended:

- Type SO hard usage (paper filled)
- Outer covering is oil resistant
- Can be driven over
- Permitted in damp locations

### b. Not Recommended:

- Type SJO hard usage
- Outer covering is oil resistant
- Should **NOT** be driven over
- Permitted in damp locations

### c. Recommended maximum draw in amps (80% of current capacity)

$$\#10 \text{ wire} - 30 \text{ amps} \times 80\% = 24 \text{ amps}$$

$$\#12 \text{ wire} - 25 \text{ amps} \times 80\% = 20 \text{ amps}$$

$$\#14 \text{ wire} - 18 \text{ amps} \times 80\% = 14.5 \text{ amps}$$

## 3. PLUGS

$$30 \text{ amp plug (L14)} \times 80\% = 24 \text{ amps}$$

$$20 \text{ amp plug (L5)} \times 80\% = 16 \text{ amps}$$

$$15 \text{ amp plug (L5)} \times 80\% = 12 \text{ amps}$$

## 4. TERMINOLOGY

**VOLTAGE** is the pressure between two points on a circuit (relates to water as PSI)

**WATTAGE** is the unit of power

**AMPERES** is the amount of current that flows past a given point on the circuit (relates to water as GPM)

**OHMS** is the amount of electrical resistance (relates to water as friction loss)

Once adopted, **ALL** equipment placed in service after July 1, 1988 must conform with these specification. **ALL** apparatus must be in compliance with these specifications by January 1, 1990 unless otherwise noted within these specifications.



## **Section 17 – Minimum Standards for Tanker Support Unit**

**A. TANKER SUPPORT UNIT-** Shall be any motorized apparatus so designed to perform the following functions.

1. Must be able to draft at static water source.
2. Unit may also meet criteria for another unit, such as a brush unit.
3. Minimum one ton rating without exceeding the manufacturer's gross vehicle weight.
4. Off road capabilities. The unit shall be equipped with four-wheel drive. Dual or single rear axle wheel are acceptable. Rear wheels shall have limited slip differential.

### **B. HOSE**

1. Minimum of 1,000 feet of 4" or 5" large diameter hose coupled and loaded as a supply line.
2. Minimum of 300 feet of 3" hose.
3. Minimum of two lengths of hard suction sleeves, size to be determined by the rating of the pump.

### **C. PUMP**

1. All pumps mounted on tanker support units placed in service after June 1994 must be certified to deliver a minimum of 750 gpm.
2. The pump must be driven by the vehicle engine and be permanently mounted.
3. All tanker support units will be required to successfully complete an annual pump test in accordance with those standards outlined for a Class B pumper.

### **D. TANK.**

1. Optional

### **E. ADAPTERS, FITTINGS, ETC.**

1. One 2 1/2" double male connection.
2. One 2 1/2" double female connection.
3. One float dock strainer, size rated for pump.
4. One hydrant wrench.
5. Assorted adapters to allow hookup of large diameter hose to other hose.
6. Two combination spanner wrenches for 2 1/2" couplings.
7. Two large diameter hose spanner wrenches.

### **F. TOOLS**

1. One tool kit.
2. Two axes (one pickhead and one flathead 6lbs.).

### **G. HANDLIGHTS**

1. Minimum of two electric hand lights (3 volt minimum).

### **H. EXTINGUISHER**

1. One approved portable fire extinguisher, fire department type the rate shall be suitable for class A, B, or C fires; 5 lbs. minimum size.

**I. MEDICAL EQUIPMENT:** Emergency medical supplies meeting the First Responder Equipment standard of the Baltimore County Volunteer Firemen's Association.

**J. WARNING BELL:** All tanker support units shall have a means of communication from the rear step to the driver (bell, buzzer, etc.).

**K. BACKUP ALARMS:** All Tanker Support Units shall be equipped with an operative backup.

**L. AUTHORIZATION:** Every tanker support unit must be certified as an authorized emergency vehicle, under the requirements of the transportation Article of the Annotated code of Maryland by the Department of Transportation. The unit shall be equipped with emergency lighting and audible warning devices.

**M. COMMUNICATIONS:** Unit shall be equipped to Baltimore County Fire Service specifications.

**N.** The following information shall validated and/or recorded each year during the inspection:

1. Unit #
2. Current Pump Test Date
3. Date Inspected
4. District Representative Name & Signature
5. Company Officer Name & Signature

## **Section 18 – Minimum Standards for Ladder Support Units**

- A. THE LADDER SUPPORT UNIT (LSU) SHALL CARRY THE BELOW ITEMS AT MINIMUM.** If the Ladder Support Unit will be running rescues, the items noted as (Truck/Rescue) must be carried. The items shall be carried on a motorized apparatus of sufficient capacity to carry the listed items without being overloaded.
- B. THE LADDER SUPPORT UNIT SHALL REPLACE A TRUCK OR TOWER AND AUGMENT THE CURRENT RUNNING ASSIGNMENT WHILE A CAREER OR VOLUNTEER TRUCK OR TOWER IS OUT OF SERVICE TEMPORARILY FOR REPAIRS OR REFURBISHMENT.** The Ladder Support Unit shall only be utilized for this purpose and shall be dispatched as a Ladder Support Unit and not as an Engine or any other type of apparatus. The Ladder Support Unit shall stage out of the committed area for other apparatus. This unit will be backed up by a Truck or Tower on fire incidents only. The Ladder Support Unit must have a minimum of four crew members for response and will perform truck company operations upon arriving at the scene.
- C. MINIMUM REQUIRED EQUIPMENT:**
1. AXES
    - a. Two, pickhead axes
    - b. Two, flathead axes
    - c. One, pry ax
  2. BARS
    - a. Two, Halligan type
    - b. Two, pinch point bars
  3. BLANKETS
    - a. Two cotton
    - b. One nomex
  4. BREATHING APPARATUS
    - a. One self contained positive pressure breathing apparatus, with low pressure alarm, per person riding the apparatus. Each shall have a PASS Device. Minimum of four.
    - b. One spare air cylinder shall be carried for each breathing apparatus.
  5. BUCKETS. Two, 14 quart heavy gauge metal
  6. CUTTING TOOLS. One, bolt cutter, manual, 24” minimum
  7. ELECTRICAL
    - a. One, 3.5kw minimum 120v AC generator
    - b. One, quart of oil
    - c. One, reel with 200’ of 12/3, type SO braided wire
    - d. Assorted pigtail adapters as per current Truck Company specifications
    - e. One, junction box
    - f. 200’ of 14/3 type SO braided wire with L-5 three prong twist connectors divided into suitable working lengths, not to exceed 75’ lengths.
    - g. Two, 500 watt flood lights with L-5 plugs
    - h. Four handlights, batter or rechargeable
    - i. All electrical equipment will meet Baltimore County Electrical specifications.
  8. FANS. One smoke removal fan, minimum 5200 cfm
  9. FIRST AID. One, 24 unit fire department type or equivalent
  10. ELEVATOR EQUIPMENT

- a. One, elevator pole
  - b. One, set assorted elevator keys
11. FIRE EXTINGUISHER
- a. One, 20 lb. CO-2 extinguisher
  - b. One, 20 lb. ABC extinguisher
12. HOSE APPLIANCES
- a. One, hydrant wrench
  - b. Two, combination spanner wrenches
13. LADDERS: Must meet current Pumper standards.
14. LADDER BELTS: Two ladder belts
15. OXYGEN. One, oxygen dispensing unit (Mine Safety Bureau approved), liter flow and demand type with associated cannulas and non re-breather masks.
16. PIKE POLES
- a. Two, pike poles 6' hook end
  - b. Two, pike poles 8' hook end
17. PUMPS
- a. One, electric submersible with 50' hose
  - b. One, electric water vac, five gallon size.
18. ROPE AND ACCESSORIES
- a. Four, lengths ½" x 50' utility rope, triple laid hawser
  - b. Two, lengths ½" x 300' rescue grade for high rope rescue (static kernmantle)
  - c. Four, figure 8 devices rated 13000 lbs.
  - d. Six, carabiners rated 13000 lbs.
  - e. Two, Class II safety harnesses or appropriate nylon webbing
19. SALVAGE
- a. Five, salvage covers 12' x 18' minimum
  - b. Two, floor runners, 3' x 18'
  - c. Two, brooms sweep type
  - d. Two, squeegees with handles
  - e. One, salvage/roof kit containing two claw hammers, one staple gun and supply of nails
  - f. One, roll of tar paper or plastic
  - g. Quantity of wood lathes
  - h. One, roll or heavy tape, 2" wide
20. SAWS
- a. One, gasoline or electric chain saw
  - b. One, gasoline powered rescue saw with assorted spare blades and fuel
  - c. One, saber or reciprocating saw with spare blades
  - d. One, hand operated pruning or trimming saw
21. SHOVELS
- a. Two, tunneling, army type
  - b. Two, square long handle
  - c. Two, scoop long handle
22. SLEDGE HAMMER
- a. One, 12 lb. sledge hammer
23. SMALL TOOLS
- a. Two, 24 oz. ballpeen hammers
  - b. One, electricians pliers
  - c. One, 12" channel lock pliers
  - d. One, 7" vise grip pliers

- e. One, 8" slip joint pliers
  - f. One, hacksaw with spare blades
  - g. Six, assorted screwdrivers (Phillips and straight)
  - h. One, 12" pipe wrench
  - i. One, 14" pipe wrench
  - j. One, 6" adjustable wrench
  - k. One 12" adjustable wrench
  - l. One, 15" adjustable wrench
  - m. One, 3/8" drive standard socket set
  - n. One, 3/8" drive metric socket set
  - o. One, set open end wrenches 3/8" to 1"
  - p. One, set of Allen wrenches
  - q. One, key hole saw
  - r. One, tin snips
24. SPRINKLER EQUIPMENT
- a. Six, sprinkler stoppers or wedges
  - b. One, set of sprinkler head wrenches
25. STRETCHERS
- a. One, stokes basket with four point sling
  - b. One, full back board
  - c. One, half back board

**D. ITEMS TO BE CARRIED IF RUNNING RESCUE ASSIGNMENT**

- 1. CHAINS
  - a. Two, 15' lengths of 3/8" 6600 lb. chain, tested at 90 degrees with hooks and/or rings
  - b. Two, 10' lengths of 3/8" 6600 lb. chain, tested at 90 degrees with hooks and/or rings
- 2. CHISELS
  - a. One, air chisel and assorted spare chisel points
  - b. One, air bottle, regulator and air line
- 3. CRIBBING: Assorted cribbing 18" long, quantity to meet truck company specification
- 4. RESCUE TOOLS: One, rescue tool (hydraulic type 5000 or 10500 psi) gasoline or electric powered to include the following attachments:
  - a. Spreading jaws with 18000 lbs. of force
  - b. Cutter with 24000 lbs. of force
  - c. Necessary hoses, chains, shackles and fluid
- 5. GEAR LIFTING/RESCUE: One, come-a-long 1 1/2" ton capacity chain type
- 6. PICKS
  - a. One, point and chisel type
  - b. One, tunneling type

**E. COMMUNICATION:** Units shall be equipped to Baltimore County Fire Service specifications.



## **Section 19 – Personal Accountability Tags and Pass Devices**

- A. PERSONAL ACCOUNTABILITY TAGS:** All Member Companies and each and every member of those Member Companies who engage in emergency fire, rescue or emergency medical service activities are required to employ Personal Accountability Tags as designated by the Association. Company officers and acting officers are responsible for assuring compliance with this requirement. Non-compliance with this requirement shall subject the offending Member Company to disciplinary action, as provided by the Constitution and By-Laws of the Association.
- B. PASS DEVICES:** All breathing apparatus used by Member Companies for emergency service, or for training in hostile environments, shall be equipped with a functioning Personal Alerting Safety System (PASS Device) either integral to such breathing apparatus, or attached to the harness of such breathing apparatus. Such PASS Device shall meet NFPA Standards at the time of purchase.

## Section 20 – Standards for Advanced Life Support Service Units

- A. VEHICLE:** Vehicles utilized must already be in service and have met applicable Baltimore County Volunteer Firemen’s Association minimum standards for that vehicle. The vehicle must provide safe and appropriate interior storage space to preserve the integrity of equipment and medications.
- B. STAFFING:** A company must be a member in good standing of the Baltimore County Volunteer Firemen's Association and all ALS providers must currently maintain Advanced Life Support Affiliation through an EMS company and the local jurisdiction as approved by the Maryland Institute for Emergency Medical Service Systems, and the Baltimore County Fire Department Chief Fire Surgeon. A company, if an EMS company, must maintain a minimum of seven, and if not an EMS company, at least two, Baltimore County Fire Surgeon approved ALS providers in its company membership.
- C. RESPONSE CRITERIA:** The Advanced Life Support Service Unit (ALSSU) of an EMS company may only be called attended when the company’s ambulance/medic unit is currently on a call or is briefly out of service. In the event that transport unit is out of service for an extended period of time for repairs, the company should place a reserve medic unit in service per BCVFA standards/procedures. At any time, the ALSSU may respond to any EMS call within its first due territory. Upon return of the ambulance/medic unit to available status, the ALSSU shall be called out of service and not available for alerting. For a non-EMS company, the ALSSU may be called attended to Fire Dispatch at any time. At any time, the ALSSU may respond to any EMS call within its first due territory. The minimum crew for a vehicle responding as an ALSSU shall be the current Baltimore County Volunteer Firemen’s Association manning level for the responding vehicle. The ALS provider can respond as either part of the crew or as an additional member.
- D. DISPATCH:** When called attended, Fire Dispatch shall alert the Company’s ALSSU for any ALS call in that Company’s first due territory. Incident Commanders, Battalion Chiefs, EMS units, and EMS District Lieutenant/Captains have the authority to request the dispatching of the ALSSU whenever it may be in the patient’s best interest.
- E. PATIENT TREATMENT:** Prior to arrival of a transporting medic unit or EMS District Lieutenant/Captain, the ALS provider on the ALSSU will perform Advanced Life Support as outlined in the Maryland State Protocols. While the ALS provider is rendering Advanced Life Support, the remaining crew will perform Basic Life Support and assist the ALS provider when necessary. Once the transport unit or EMS District Lieutenant/Captain arrives, all patient information and care will be transferred to the ALS provider from the medic unit or District Lieutenant/Captain. This should include verbal or written information gathered and any care provided prior to the arrival of the EMS District/Captain or transport unit.
- F. UPGRADE PROCEDURES:** Utilizing the ALSSU concept should not change the current policy for transport units or EMS District Lieutenants/Captains. Transporting vehicles will continue to provide the optimal levels of service to the ill/injured patient. Fire Dispatch will continue to back up any unit that is deficient in staffing or level of care. If the ALSSU has performed any ALS skills and the transporting vehicle is BLS level of care, then the transport medic unit or EMS Lieutenant/Captain responding will assume patient responsibility and upgrade the unit as described in the current EMS Lieutenant Upgrading Policy. Routinely upgrading the transporting vehicle with the ALSSU’s ALS provider is not encouraged. However, greater flexibility should be afforded to

field providers and units to use their discretion in unforeseeable situations. When the patient is in extremis and additional resources are delayed the ALSSU's ALS provider and the Incident Commander should make an upgrade decision that is in the patient's best interest.

**G. DOCUMENTATION:** The following documentation shall be completed for each ALSSU response:

1. Appropriate NFIRS report
2. Any survey or study forms currently approved by BCVFA
3. Baltimore County Fire Department documentation required for "paramedic engines" and handled in the same manner.
4. This documentation will be completed as soon as possible, documenting the patient care performed prior to the medic crew or EMS Lieutenant/Captain's arrival.

**H. EQUIPMENT**

1. Minimum equipment for ALSSU service shall include a MIEMSS approved monitor/defibrillator (or current standard), a BLS kit to current BCFA standards, and an ALS kit to current Baltimore County Fire Department standards for their "paramedic engine".
2. The medical supplies from the ALSSU will be replaced on a "one for one" basis. The ALSSU ALS provider is responsible for replacing any supplies following an emergency response. The supplies used on an incident should be obtained from the transport unit on the scene. If the ALSSU is unable to restock from the transport unit, they should restock from the supply inventory of their station-and order replacement per established procedure.

## ARTICLE II - EQUIPMENT STANDARDS

### Section 1 – Minimum Equipment for First Medical Response Vehicle

**A. DEFINITION:** This standard applies to all vehicles owned and/or operated by Member Companies designated to use to transport First Responders to incidents. Such vehicles shall carry all of the items listed below, maintain in good working order and properly packaged to protect the contents from contamination.

#### **B. DURABLE EQUIPMENT**

1. One Blood pressure kit, including any combination of large adult, regular adult or pediatric cuff.
2. One stethoscope
3. One Oxygen Dispensing Unit, with:
  - a. Liter flow valve.
  - b. 1 – “D” Bottle
  - c. Pediatric Bag Valve Mask.
  - d. Adult Bag Valve Mask.
4. One Portable Suction Set, (Manual or battery). (OPTIONAL)
5. One Pair Bandage Scissors.
6. Two Penlights.
7. One Ring cutter. (OPTIONAL)
8. One set Oropharangeal Airways
9. One Set Nasal Pharangeal Airway with 4 lubricating gel packs.
10. One Pediatric Non-Rebreather Face Mask.
11. Two Adult Non-Rebreather Face Mask.
12. Two Nasal Cannula.
13. One Thermal Blanket. (OPTIONAL)
14. Two HEPA Masks.
15. Two Eye/Face Shields. (Combined with HEPA)
16. Two Gowns, through which blood or other body fluids cannot penetrate.
17. One Foam Alcohol Hand Cleaner.

#### **C. MEDICAL SUPPLIES IN A SUITABLE CONTAINER**

1. Four Rolls Kerlex or Kling Gauze Bandage.
2. Two Rolls 1” wide tape.
3. One Roll 2” wide tape.
4. Twelve 4” X 4” Gauze Dressings.
5. 500cc, Saline Solution or Sterile Water.
6. One Burn Sheet
7. Two Trauma Dressings
8. Two Cold Packs
9. Adequate supply of Small, Medium, Large and Extra Large Non-Latex gloves.
10. One Box of Sheer Strips (Band-aids). (OPTIONAL)
11. Four Triangular Bandages.
12. One Triage Kit (OPTIONAL)
13. One Patient Marking Pen
14. Two Glucose Paste.

15. One Adult Epinephrine Auto-Injector. (OPTIONAL)
16. One Pediatric Epinephrine Auto Injector. (OPTIONAL)
17. One AED per station minimum

**ARTICLE III – STAFFING STANDARDS**

**RESERVED**

## ARTICLE IV – TRAINING STANDARDS

### Section 1 - Firefighting

- A. **REQUIREMENT:** Any member of any Active Member Company who engages in fire fighting, rescue or floodlight disciplines enrolled after September 18, 1976, and thereafter, shall satisfactorily complete National Fire Protection Association's Standard 1001 - Firefighter I qualifications within a two year period of its implementation. The Authority having jurisdiction will be the Certifying Officer. These members shall also annually complete Hazardous Materials training as prescribed by the Authority having jurisdiction.
- B. **NEW MEMBERS:** All new members enrolled after the implementation of this minimum standard must satisfactorily pass the following sections of NFPA 1001, 1987 Edition, prior to riding apparatus: 3-6, 3-9, 3-13, 3-14. The Senior Line Officer of each Volunteer Fire Company will be the approving officer for members of his/her company.
- C. **GRANDFATHER CLAUSE:** Any Member of an Active Member Company having membership in a Volunteer Fire Company in Baltimore County prior to September 18, 1976, will be considered to have met the requirements of this By-Law.
- D. **DUAL CERTIFICATION:** The University of Maryland, Maryland Fire and Rescue Institute's Basic Fire Fighter Course and/or the Essential Course will serve as dual certification for the purpose of this By-Law. Completion of the American Red Cross Standard First Aid Course or higher level medical training class with CPR will meet the requirements for Section 3-3.

### Section 2 – Rescue

- A. Companies who operate Rescue Units or Squads shall maintain on their rosters a minimum of 15 members who have successfully completed a structured discipline in Basic, Intermediate, and Advanced Rescue. This discipline may be replaced by the newer structured discipline of Rescue Technician and Rescue Specialist I. Said structured discipline shall follow the guidelines as set in programs offered by MFRI, but may be administered by the local jurisdiction.
- B. Instruction of rescue training as set in Item #1 is to be administered by a certified instructor in the rescue discipline.
- C. Companies who operate Rescue Units and Squads and members who have successfully completed a structured rescue discipline as stated in Item #1 of this Standard shall maintain the level of training by attending 30 hours of continuing education or refresher training every 3 years. Continuing education and refresher training may be administered at the local jurisdiction or County level.
- D. Companies are responsible to maintain training records on an annual basis for rescue training.

### Section 3 – Floodlight

- A. Companies operating floodlight unit shall show on their training records a minimum of six hours on basic floodlight, ventilation and salvage discipline. The subject matter to be covered in these classes shall be determined by the Rescue/Floodlight Committee.

### Section 4 – Emergency Medical Services (Reserved)

## Section 5 – Rescue Training Guide for Ladder Trucks

- A. Truck Companies shall maintain on their rosters a minimum of 15 members who have successfully completed a structured discipline in Basic Rescue. This discipline may be replaced by the newer structured discipline of Rescue Technician. Said structured discipline shall follow the guidelines as set in the programs offered by MFRI, but may be administered by the local jurisdiction or at the company level.
- B. Companies and their members who operate ladder trucks which are dispatched on rescue assignments shall have successfully completed a structured rescue discipline as stated in Item #1 above. This standard level of training shall be maintained by attending 30 hours of continuing education or refresher training every three years. Continuing education and refresher training may be administered by the local jurisdiction or at the company level.
- C. Instruction of rescue training is to be administered by a Level I Instructor. (Minimum certification)
- D. Companies are responsible for maintaining training records

## Section 6 – Training Guide for Inland Water Rescue Boats

- A. Companies who operate inland water rescue boats shall have all crew members certified at minimum: State of Maryland Basic Boating Course. This structured discipline may be obtained through the United States Coast Guard or State of Maryland Department of Natural Resources.

## Section 7 – Minimum Standard for Fire Suppression Officers

- A. **General Purpose:** The purpose of this standard is to provide uniform requirements for all individuals who, as a result of their membership in a member company of the Baltimore County Volunteer Firemen's Association are selected to fill a suppression officer position.
- B. **Scope:**
  - 1. This standard contains the minimum requirements to be met by persons who are selected (elected or appointed) by member companies to serve in a supervisory capacity for fire suppression forces.
  - 2. This standard shall not be applicable to persons selected by member companies to serve in a supervisory capacity of emergency medical services forces.
  - 3. This standard shall not be applicable to persons selected to fill administrative or executive positions by member companies.
  - 4. This standard shall not be applicable to persons selected to fill any elected or appointed position of the Baltimore County Volunteer Firemen's Association.
  - 5. This standard shall not be applicable to individuals who are not elected or appointed officers, but under certain circumstances may act in a supervisory role, i.e., acting officers for individual incidents.
- C. **Definitions:** The terms used throughout this document shall be defined as follows:
  - 1. **ADMINISTRATIVE OFFICE:** Those offices designated by member companies, which are responsible for the business transactions of the corporation. For the purposes of this standard, a person holding an administrative office would not have incident management responsibilities as a duty of that administrative office.
  - 2. **CERTIFICATION REVIEW BOARD (CRB):** The group is made up of both career and volunteer personnel who have the responsibility of reviewing member applications and



- determining if the applications as submitted satisfy the requirements of the appropriate National Fire Protection Association or other nationally recognized standard
3. **EMERGENCY MEDICAL SERVICES** – The area of responsibility within the fire service for the treatment and care of sick and/or injured persons. Persons in the Emergency Medical field do not normally have fire suppression responsibilities.
  4. **EXECUTIVE OFFICE:** See Administrative Office.
  5. **FIRE SUPPRESSION OFFICER:** Any individual selected by his/her company to direct other members in the act of fire control and extinguishments, as well as the stabilization of other emergency scenes such as rescues, hazardous materials incidents, etc. The Fire Suppression Officer is generally responsible for overall scene management, but direct responsibility for patient care rests with Emergency Medical Services.
  6. **OFFICER, JUNIOR:** A person selected to fill a supervisory responsibility for a relatively small group of persons; a first line supervisor. A Junior Officer would not normally assume all responsibilities of the most senior company officer in his or her absence. A Junior Officer would not normally be responsible for the formulation of company policy.
  7. **OFFICER, SENIOR:** Those positions that are directly responsible for the formulation of company policy for fire suppression activities. The Senior Officer position(s) is that one position which has ultimate operation authority. Persons designated as assistants or deputies to the person with this ultimate authority would also be considered Senior Officers.
  8. **SELECTED:** Method by which a Company designates its officers. The selection method can be election, appointment or combination of methods. Nothing in this standard is meant to direct member Companies as to how their suppression officers are selected.
  9. **SERVICE TIME:** The time which an individual has been a member of the fire services. Company Service Time would be that portion of Service Time which has been spent with the particular company.
  10. **SUPERVISOR:** An individual who as a result of his/her position is responsible for the direction of individuals to perform specified tasks to achieve incident stabilization.

#### **D. REQUIREMENTS**

1. Any person selected to hold a fire suppression office shall have successfully completed a Fire Officer I course, in accordance with the requirements of National Fire Protection Association Standard 1021 at the time of their class.
2. The requirements of this standard are not applicable to persons selected by their respective companies to function solely in an EMS situation. If a company has dual function officers, that is the EMS Lieutenant or Captain also has fire ground command responsibilities, then they would be expected to satisfy the requirements of this standard.
3. The requirements contained in this standard are minimum requirements. The intent of this paragraph is to require Fire Officer I certification be granted before an individual is selected as a suppression officer. Nothing contained herein is meant to restrict a member company from imposing higher standards on its membership.
4. Persons who have held suppression offices prior to September 1, 2001 are considered “grandfathered” to the rank held. Thus, if on or prior to September 1, 2001 a person is or was a Lieutenant, he or she is considered to meet the requirements of a Lieutenant. This individual would not be considered qualified for a higher rank. An individual who is not currently in the company commander position, but had been previously, would be considered eligible for that position and other suppression offices, regardless of certification. Individual companies are free to have more stringent requirements.
5. The minimum level of officer certification required by the standard is Fire Officer I. Persons who are selected to fill senior level officer positions should possess a certification of at least Fire Officer II. This higher certification provides the knowledge necessary to address the

issues, which the company commander and his/her deputies routinely face in the day-to-day operations of a company.

6. Continuing Education and Recertification
  - a. All persons selected as suppression officers of member companies shall successfully complete all continuing education requirements of the Baltimore County Volunteer Firemen's Association.
  - b. Previously, established requirements of the Baltimore County Volunteer Firemen's Association for continuing education in CPR, HAZMAT and Bloodborne pathogens are applicable.
  - c. The Fire Officer standards as currently written by the NFPA do not contain requirements for re-certification or continuing education. Existing requirements as described in paragraph D-6.b will provide the fire officer with up-to-date information in specific areas of concern. The fire officer has an obligation to stay abreast of the latest development of fire protection and fire suppression.
  - d. Annual (or other periodic) recertification of the Fire Officer certification shall not be a requirement of this standard.
7. Service Time Requirements: This standard contains no service time requirements for persons selected as suppression officers.
  - a. Although not required, it is recommended that an individual selected as a fire suppression officer have a minimum of one year of company Service time. This minimum company service time will provide an opportunity for the individual to learn the unique policies and procedures of the company of which he/she is selected a leader.

#### E. ADMINISTRATION

1. Applicability
  - a. The requirements contained in this standard shall be applicable to all suppression officer selections by member companies, which occur after adoption of this standard by the Baltimore County Volunteer Firemen's Association.
  - b. The requirements of this standard are not applicable to out-of-country mutual aid companies who may respond into Baltimore County as part of a mutual aid agreement.
  - c. Companies responding into Baltimore County do not have a specific requirement to meet these requirements. Mutual aid agreement negotiations should consider including the requirements of this standard in any mutual aid agreement, just as minimum staffing requirements are included.
  - d. This amendment becomes effective on the first day of September, year 2001.
2. Documentation
  - a. Any individual who is selected to hold a fire line position shall have a copy of their successful training completion documentation in their training file at the company where they hold the position.
  - b. When submitting annual credential forms, member companies shall indicate the training levels of their suppression officers.
  - c. Non-compliance shall be addressed under the provisions of *Article XI - Discipline* of the Constitution of the Association.

## ARTICLE V – MISCELLANEOUS STANDARDS

### Section 1 – Quarters, Communications, and Service Tests

- A. **QUARTERS, COMMUNICATIONS AND SERVICE TESTS:** All Active and Associate Member Companies shall have quarters adequate for housing their apparatus and capable of being heated in the winter. They shall be constructed of masonry or of insulated metal.
- B. **COMMUNICATIONS:** All Member Companies must have and operate such communications systems as are provided by Baltimore County, including radios, pagers, telephones and teleprinters. All authorized emergency vehicles operated by Member Companies must be equipped with radio equipment provided by the tuned to frequencies assigned by Baltimore County.
- C. **SERVICE TESTS**
  - 1. **Testing of Pumps.** All permanently mounted pumps used by Member Companies for emergency service or emergency training shall be tested annually, at the time, in the place, and in the manner prescribed by the Association. (See Appendix C-1).
  - 2. **Testing of Aerial Ladders.** All aerial ladders used by Member Companies for emergency service or emergency training shall be tested annually, at the time, in the place, and in the manner prescribed by the Association.
  - 3. **Testing of Booms or A-Frames.** All booms or A-frames shall be tested at the time, in the place, and in the manner prescribed by the Association.
  - 4. **Testing of Firehose.** All 1 ½”, 1 ¾”, 2”, 2 ½”, and 3” double-jacket rubber-lined fire hose used for emergency service or emergency service training shall be tested when new at 600 psi. All fire hose used in emergency service or emergency training by Member Companies shall be tested annually, at the time, in the place, and in the manner prescribed by the Association, to the following standards:
    - a. 1 ½” through 3” diameter fire hose shall be tested at 300 psi for three (3) minutes.
    - b. 4” diameter fire hose shall be tested at 200 psi for five (5) minutes.
    - c. 5” diameter fire hose or greater shall be tested at 150 psi for five (5) minutes.
  - 5. **Testing of Breathing Air Cylinders.** Steel air cylinders shall be hydrostatically tested at least once every five (5) years. Composite air cylinders shall be hydrostatically tested at least once every three (3) years.
  - 6. **Testing of Oxygen Cylinders.** Oxygen cylinders shall be hydrostatically tested at least once every five (5) years.

### Section 2 – Annual Service Test Guidelines

- A. The Association will be advised of the desire to down rate a pump and will require the approval of the following: Chief Officers Committee, Executive Board, and the Association, at a Regular Meeting. A letter should be drafted to the Baltimore County Fire Department should the capacity change affect the I.S.O. rating. As part of the above notification, the company will have to fully explain in writing why they are requesting to down rate the pump.
- B. No pumps will be allowed to down rate unless the unit can pass the pump test for its rated capacity as indicated by the Underwriters plate. The only exception will occur if the pump cannot be repaired.
- C. Down rating will only be allowed for one pump size smaller than the rated capacity. This can only occur if the down rated pump meets the minimum current standard for a Class A pumper.

- D.** If pumps are tested by the Baltimore County Fire Department Repair Shop or Fire Academy, it is the Member Company's responsibility to see that the annual service test chairman is given copies of the test. Failure to do so will result in the pump having to be retested. The test will only be accepted if it meets the requirements of the Baltimore County Firemen's Association annual service test.
- E.** New and refurbished pumps will not be subject to an annual service test if copies of the underwriter's Certificate of Inspection is given to the chairman of the Annual Service Test Committee prior to the unit going into service. (For the current year; current year is defined as if tests are being done for 1988, the certificate must be dated 1988).
- F.** All water source units with Class A fire pumps that do not run as pumpers shall be tested annually for 10 minutes at 120 psi engine pressure.
- G.** All pumps with capacities of 500 gpm or more shall be subject to an annual service test. Mutual Aid Companies which run into Baltimore County will be subject to an annual service test for each of the units which meet Item C, Section I that run into Baltimore County. They may elect to have their pumps tested in Baltimore County, or if they are done in their own County, shall forward those test papers to the annual pump test chairman. The test shall be accepted only if it meets the requirements of the Baltimore County Volunteer Firemen's Association annual service test. Failure to forward test papers or failure of the pump will result in that unit not being allowed to run into Baltimore County.

### Section 3 – Annual Service Test consist of the Following:

- A. Hydrant Check: Each pump shall be hooked to a hydrant to check for: Pump packing leaking. All gauges will be checked for accuracy. Incorrect gauges shall be noted on test papers.
  
- B. Drafting: Each pump shall pump at a ten (10) foot lift:
  - 1. 100% rated capacity @ 150 psi for twenty (20) minutes.
  - 2. 70% rated capacity @ 200 psi for ten (10) minutes.
  - 3. 50% rated capacity @ 250 psi for ten (10) minutes.
  
- C. During the drafting portion of the test, the following will also be checked:
  - 1. RPM hand counters
  - 2. Relief valves and/or pressure governors.
  - 3. RPM gauges in the cab and on the pump panel.
  - 4. Oil pressure and water temperature gauges.All non-working items will be noted on the test papers.
  
- D. Any pump that has any of the following conditions shall be subject to retest. The pump and unit shall be allowed to remain in service. The Company shall have sixty (60) days to repair the pump and have it retested. At the end of the sixty (60) days if the problem has not been corrected, the unit shall be placed out of service until it has successfully passed.
  - 1. Failure to hold a prime during testing or between tests.
  - 2. Failing only one of the tests, as long as it is not the capacity (or maximum flow) test.
  - 3. RPM hand counters, if broken, will not be cause for retesting. However, if the hand counter has not been repaired by the next test, it will be cause for total failure of the unit at that time.
  - 4. On any pump that fails to hold RPM's to within 10% of the underwriter's plate, the proof test will be done. This is pumping 100% of the rated capacity at 165 psi for ten (10) minutes. If the pump can perform this test within the no-load governed speed of the engine, then it does not have to be retested. If the pump cannot perform this test within the no-load governed speed of the engine, then it will be placed out of service.
  - 5. Any pump or unit that fails the first (capacity) test shall be allowed to remain in service until the next annual service test provided the following conditions are met.
    - a. The pump will be allowed to temporarily down rated to the next pump size smaller. If the pump can pass all three tests of the annual service test for the next pump size smaller, the unit will be allowed to remain in service.

#### Down Rating Chart

2000 gpm to 1750 gpm

1750 gpm to 1500 gpm

1500 gpm to 1250 gpm

1250 gpm to 1000 gpm

1000 gpm to 750 gpm

750 gpm No down rating will be allowed

500 gpm No down rating will be allowed

- b. If the pump cannot pass all three tests for the next pump size smaller, then the unit will be placed out of service until the pump can pass the annual service test for its original rated capacity.
  - c. If the pump has already been down rated, it will not be allowed to down rate again and the unit will be placed out of service until it passes the annual service test.
  - d. No 750 gpm or 500 gpm pumps will be allowed to down rate.
  - e. This temporary down rating will remain in effect only until the next annual service test. If the pump cannot pass the next annual service test at its original capacity, the unit will be placed out of service until it can pass.
  - f. When the Annual Report is submitted in January, all units that have been temporarily down rated will be noted. At that time, the units that have not been repaired, retested and returned to their original capacity will be required to submit a report to the Executive Board of the Baltimore County Volunteer Firemen's Association on the status of the repairs to the unit.
- E.** Any pump that has any of the following conditions shall be placed out of service. It shall be returned to service only after it has passed an annual service test that meets the requirements of this test, and the chairman of the annual service test committee is given copies of the test.
- 1. Failure to obtain water from a draft within the specified time. Unless otherwise noted on the official underwriter's test papers:
    - 500 1250 gpm 30 seconds is allowed
    - 1500 to 2000 gpm 45 seconds is allowed
  - 2. Failure to remain in pumper gear during testing.
  - 3. Any 750 gpm or 500 gpm units that fail the first test are out of service.
  - 4. Failing two of the three tests or all tests.
  - 5. Failure to hold the required flow and pressure for the required time.
  - 6. Failure of one or more gate valves if that leaves an insufficient number of gates to flow the rated capacity of the pump.

## Section 4 - Drug and Alcohol Policy

- A. All new applicants with the exception of members entering a non-riding cadet program will be required to have a standard drug test at an appropriate medical facility approved by the BCVFA. The test should be applied when membership has been approved but not yet implemented, awaiting only the result of the test. The applicant shall report to an approved facility and donate a urine specimen within seventy-two (72) hours of being given the test form by the company.
- B. Any member driving an emergency vehicle of a Member Company, the Baltimore County Fire Department or the BCVFA which vehicle is involved in an accident will have standard drug and alcohol tests completed as soon as practically possible after the occurrence if: (a) any person who was involved in the accident is transported by ambulance from the scene of the accident to an emergency or urgent care facility; or (b) if the condition of any vehicle that was involved in the accident causes the need for towing or otherwise assisting the movement of the vehicle from the scene of the accident.
- C. All results will be treated within the guidelines of applicable law with regard to confidentiality and due process and reports only released to the two designated (per rules established by the Executive Board of the BCVFA) officials of the Company of which the tested Member is a member. The fees incurred for any test administered pursuant to this Policy will be paid or reimbursed by the Baltimore County Volunteer Firemen's Association or Baltimore County, Maryland. This Policy shall only be in effect when such funding is available. It shall be the responsibility of the Executive Board of the BCVFA to notify its Members when funding is available, and when it is not available.
- D. The Executive Board, with the approval of the BCVFA, shall establish and maintain, from time to time, Rules governing the administration of this Policy, to the extent determined by the Executive Board or by the BCVFA to be appropriate.
- E. It shall be the responsibility of each Member Company to establish and enforce policies and procedures for dealing with positive test results and the administration of this Policy except as otherwise specified by this Policy as amended, from time to time, by action of the BCVFA.
- F. New members may not be approved for Breathing Apparatus Fit Testing prior to completion of drug testing