



Fire Protection Training

Procedures Handbook 4300

EMERGENCY MEDICAL SERVICES

TOPIC: Inspection, Testing, and Maintenance of Resuscitation Equipment

TIME FRAME: 30 Minutes

LEVEL OF INSTRUCTION:

BEHAVIORAL OBJECTIVE:

Condition: A written quiz

Behavior: The student will describe the inspection, testing and maintenance procedures for resuscitation equipment.

Standard: With a minimum of 70% accuracy

MATERIALS NEEDED:

- Appropriate visual aids
- Audio visual equipment and supplies

REFERENCES:

- Manufacturer's Operation Manual

PREPARATION:

The resuscitator is one of the most frequently used pieces of life saving equipment carried on the fire apparatus. The resuscitator can only operate if it is in good working order. By performing routine maintenance and testing, the firefighter will verify that the equipment is operational, and will gain valuable hands-on training in the resuscitator's use. If the resuscitator is out of service, the firefighter may have to give mouth-to-mouth resuscitation to the non-breathing victim.



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INSPECTION, TESTING, AND
MAINTENANCE OF RESUSCITATION
EQUIPMENT

PRESENTATION	APPLICATION
<p>I. TWO TYPES OF RESUSCITATORS</p> <ul style="list-style-type: none">A. Bag Valve Mask<ul style="list-style-type: none">1. The bag valve mask ventilates by manually squeezing an oxygen filled bagB. Demand Valve Resuscitator<ul style="list-style-type: none">1. Demand valve resuscitator ventilates using the oxygen pressure in the cylinder <p>II. COMPONENTS OF THE BAG VALVE MASK</p> <ul style="list-style-type: none">A. Bag - Can be Used With or Without Supplemental Oxygen (O₂)B. Valve (One Way)C. Mask - Transparent to Visualize Vomitus and SecretionsD. O₂ Induction Line - Supplies O₂ to Bag <p>III. THE FIVE MAIN COMPONENTS OF A DEMAND VALVE RESUSCITATOR</p> <ul style="list-style-type: none">A. O₂ Cylinder<ul style="list-style-type: none">1. Usually "E" size (4.5" x 30")2. Pin-indexing safety attachment system which only allows connection of O₂ equipment3. Always green in color4. 2000 PSI CapacityB. Regulator/Pressure Valve	<p>See Information sheets #1 and #2</p>



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<ul style="list-style-type: none">1. Controls flow from cylinder2. Reduces high pressure in cylinder to a safe respirable pressure<ul style="list-style-type: none">a. The regulated pressure for resuscitators 40-60 PSI depending on manufacturer3. Controls flow from 1 to 25 liters per minute with adaptor for canula or mask <p>C. Hose - Delivers O₂ from Regulator to Demand Valve</p> <p>D. Demand Valve</p> <ul style="list-style-type: none">1. Flow rate<ul style="list-style-type: none">a. Inspiratory pressure limits, measured in centimeters of water (cm/H₂O) is 35-60 cm/H₂Ob. Some units have pressure limit relief valves and alarms set in the range of 40-60 cm/H₂Oc. Most demand valves deliver at a flow rate of 40 liters per minute2. Manually triggered ventilation device for non-breathing patients3. If patient is breathing, O₂ flow is triggered by negative pressure produced when the patient inhales <p>E. Mask</p> <ul style="list-style-type: none">1. Covers both the mouth and nose2. Provides for high O₂ concentrations3. Used at flow rates of at least 6 liters per minute (L.P.M.)	



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<p>4. Different sizes</p> <p>5. Transparent to visualize vomitus and secretions</p> <p>IV. INSPECTION OF RESUSCITATION EQUIPMENT</p> <p>A. Inspect All Parts for Deterioration or Wear</p> <p>B. Inspect All Parts for Cleanliness to Prevent the Spread of Communicable Disease</p> <p>1. Do not use petroleum products for cleaning</p> <p>2. Do not tape orifices</p> <p>V. INSPECTION OF RESUSCITATION EQUIPMENT</p> <p>A. Regulator/Gauge</p> <p>1. Physical appearance</p> <p>a. Gauge function</p> <p>b. Check for leaks</p> <p>B. Connecting Hose</p> <p>1. Look for signs of wear or deterioration</p> <p>a. Kinking the hose</p> <p>b. Exposure to oil or grease</p>	<p>Why is clean resuscitation equipment important to the personnel using the equipment?</p> <p>What would cause premature wear-out of the resuscitator hose?</p>



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<ul style="list-style-type: none"> c. Abrasion from dragging the hose over sharp objects <p>C. Demand Valve</p> <ul style="list-style-type: none"> 1. Properly assembled <ul style="list-style-type: none"> a. Owner's manual <p>D. Mask</p> <ul style="list-style-type: none"> 1. Cleanliness 2. Complete set of sizes <p>VI. TESTING OF RESUSCITATION EQUIPMENT</p> <p>A. Daily</p> <ul style="list-style-type: none"> 1. Check bottle pressure 2. Check for leaks 3. Refill cylinder according to local policy 4. Check for corrosion 5. Inspect regulator and valve 6. Check for other visible damage <p>B. After Use</p> <ul style="list-style-type: none"> 1. Clean and disinfect <ul style="list-style-type: none"> a. Proper disinfectant and cleaning procedures as per manufacturer's recommendations 	<p>Where can information be found to show the proper assembly sequence of the demand valve?</p>



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<p>C. Hydrostatic Testing</p> <ol style="list-style-type: none">1. Five year intervals for steel and aluminum2. Three year intervals for composite	<p>How often must compressed gas cylinders be hydrostatically tested?</p>



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SUMMARY:

Keeping resuscitator equipment clean and in good repair is important not only to the patient but also to the personnel who must use this equipment to save lives.

EVALUATION:

A written quiz.

ASSIGNMENT:

To be determined by instructor(s).