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**ITEM: ADAPTER, 1-INCH  
ADAPTER, 1 1/2-INCH**

**NFES #0003, #0004  
#0006, #0007**

**A. Initial Inspection/Disposal Criteria**

1. Check for obvious damage.
2. Check for burrs.
3. Check tail gasket.
4. Check for fire damage. May cause failure in the future.
5. Check hose coupling threads for damage.

**B. Tests**

None.

**C. Refurbishing Procedures**

Replace tail gasket if missing, cracked, or stiff.

**D. Retesting Criteria**

None.

**E. Cleaning Procedures**

1. Clean in parts washer, high pressure wash, or clean in sink with dishwashing detergent using a brush or scouring pad.
2. Rinse thoroughly and let dry.

**F. Repackaging**

Package to protect threads.

Pack 10 each in carton (cache option) or 60 each in carton (cache option) and label accordingly.

**G. Storage and Shelf Life Checks**

None at this time.

## Storage and Refurbishing Standards

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**ITEM: APPLICATOR, WATER, 2 PIECE**

**NFES #0720**

### **A. Initial Inspection/Disposal Criteria**

1. Check for burns.
2. Check for bad threads.
3. Check for cracks.
4. Check for gaskets in female fittings.

### **B. Tests**

1. Assemble 2-piece applicator.
2. Attach to hose.
3. Check for leaks.

### **C. Refurbishing Procedures**

Wash and remove dirt and grime.

### **D. Retesting Criteria**

1. Attach to hose.
2. Check for leaks.

### **E. Cleaning Procedures**

1. All items will be washed and cleaned of mud, dirt, and grease. Clean with a dishwashing detergent with bristle brush or scouring pad; pressure wash as needed.
2. Rinse thoroughly and let dry.

### **F. Repackaging**

Package 20 each in NFES #0385 and label accordingly.

### **G. Storage and Shelf Life Checks**

None at this time.

**ITEM: BAG, BACKPACK PUMP**

**NFES #1197**

**A. Initial Inspection/Disposal Criteria**

1. Fabric and webbing.
  - a. Any holes, cuts, tears, burns, or torn seams that are not economically repairable.
  - b. Any fastener missing that does not provide adequate closure.
  - c. Unsightly dirt or fuel stain that cleaning cannot eliminate.
2. Hardware.

Check all plastic hardware for dirt, cracks, breaks, and proper function.
3. Replaceable liner if nonfunctional.

**B. Tests**

Open and close hook and pile fastener to determine if closure is adequate.

**C. Refurbishing Procedures**

1. Repair holes, cuts, tears, and broken seams.
2. Replace nonfunctioning hardware.
3. Replace, insert extra plastic liners in pouch, if required. (See sections A and B).
4. Install rubber gasket on cap, if needed, to prevent leakage.

**D. Retesting Criteria**

Test replacement hook and pile fastener after sewing in place, as specified in section B.

**E. Cleaning Procedures**

1. Allow mud and loose dirt to dry. Remove with a stiff-bristle brush. If stains remain, wash as recommended below.
2. To remove heavy oil, as well as dirt and stains.
  - a. Soak in a solution of a water soluble, biodegradable degreaser for 30 minutes. Brush with a bristle brush, rinse thoroughly, and hang to dry.
  - b. Or, pretreat with a water-soluble biodegradable degreaser, high pressure wash, and hang to dry.
3. **DO NOT MACHINE WASH OR DRY. DO NOT USE BLEACH TO CLEAN FABRIC.**

**F. Repackaging**

Pack 10 each in carton (cache option) and label accordingly.

**G. Storage and Shelf Life Checks**

None.

See appendix K for information on water-soluble biodegradable degreasers.

**ITEM: BAG, BACKPACK PUMP (OLD STYLE)**

**NFES #1149**

**NOTE: When available stock is depleted, this item will be no longer be available.**

### **A. Initial Inspection/Disposal Criteria**

1. Check for:
  - a. Rips, holes.
  - b. Caps.
  - c. Straps (make sure they are all there and in good condition).
  - d. Pump and hose. (Refer to pump, single action NFES #0151)
2. Items that will determine disposal.
  - a. Bad seams and deterioration of adhesive.
  - b. Tears larger than 1 inch.
  - c. Depending on condition of bag, two to five patches.
  - d. Handheld pump that does not provide adequate pressure. See procedure for testing pumps.
  - e. Inoperative quick connection points.

### **B. Tests**

1. Testing Bags.
  - a. Fill bag with 4 pounds of air.
  - b. Dip in water to check for leaks.
  - c. Patch leaks.
  - d. Check quick connections on bladder bags for proper seating.
2. Testing Straps.
  - a. Check buckles and D rings on straps for serviceability.
  - b. Check to see if strap attachments are coming unglued from bag. If needed, reglue.

**NOTE: See gluing procedure.**

- c. Pull test strap patch on bag to 45 pounds at 180 °F pull from bag.

### **C. Refurbishing Procedures**

1. Wash unit.
  - a. Wash with soap and water, or steam clean.
  - b. Rinse in clear water.
  - c. Drain and let air dry.
2. Patching.
  - a. Gluing.

**IMPORTANT NOTE: Most adhesives and thinners are flammable. Keep away from fire. Use in well ventilated space. Avoid prolonged contact with skin as well as breathing vapors. Cleanse hands thoroughly after contact. Read manufacturer's instructions and recommendations for adhesives and thinners before use.**

- b. Patching procedure.
  - (1) Clean both surfaces to be bonded.
  - (2) Use abrasive strip or wire wheel to rough both surfaces before application of adhesive. Clean both surfaces again after roughing.
  - (3) Apply adhesive to both surfaces and let dry (15 to 25 minutes). Check for dryness by lightly touching surface with fingertip. Dry adhesive will feel tacky, but will not transfer to fingertip. If adhesive is allowed to dry more than 3 hours, apply a second coat of adhesive to both surfaces.

(4) Press the adhesive-coated surfaces together and use the roller to press the parts together. Use heavy pressure.

(5) For best results cure bonded surfaces for 72 hours.

c. Strap attachments.

(1) Remove all “old glue” residues from strap. Sand or wire wheel a 2-inch area on each strap, rough on both sides.

(2) Remove all “old glue” from attachment patch. Sand or wire wheel the backside of the patch. If the detached patch is not available, make patch of proper dimensions from salvaged bag material of same color. Clean using sandpaper or wire wheel to lightly roughen surface for adhesive.

(3) Check appearance of the patch. There should be a slit in the upper portion of the patch. If no slit exists, use a razor blade or sharp knife to add one.

(4) Locate the portion of the bag where the patch came from. Remove all old glue. Sand or wire wheel an area larger than the patch originally covered.

(5) **IMPORTANT:** All surfaces to be glued should be thoroughly sanded. Remove residue and clean surface. Check manufacturer’s recommendations for proper gluing and cleaning procedures. Failure to do so will adversely affect the strength of the adhesive.

(6) Assembling strap to patch: See section B.

(a) Slide D-ring on strap.

(b) Apply adhesive to sanded side of patch (just enough to cover where the strap will go) and on mating side.

(c) Slide strap through the slit in the patch.

(d) Press together.

(e) Use a roller to ensure a good bond.

**NOTE: For best results, repaired bag should be held for 7 days at not less than 65 °F and not more than 70 percent humidity.**

**D. Retesting Criteria**

None.

**E. Cleaning Procedures**

None.

**F. Repackaging**

1. Pack rolled bag similar to packaging of manufacturer. This prevents damage to bag by storage, transfer, handling, and ozone.

2. Pack 6 each in carton NFES #2007.

**G. Storage and Shelf Life Checks**

None at this time.

**ITEM: BAG; TENT AND PERSONAL GEAR**

**NFES #0281**

### **A. Initial Inspection/Disposal Criteria**

1. Fabric and webbing.
  - a. Any hole, cut, tear, fray, or burn that cannot be repaired economically.
  - b. Any area of abrasion that has weakened the fabric beyond repair.
  - c. Any webbing that is cut, burned, or abraded beyond economical repair.
2. Hardware.

Check all plastic hardware for dirt, cracks, breaks, and proper function. See section B.
3. Zippers.

Check all zippers for broken coils, missing or broken sliders, and for proper function. See section B.
4. Any writing, drawings, and so on on pack; dispose of unit.

**NOTE: The cache manager shall determine when repair is economical. This decision will depend on available repair facilities.**

### **B. Tests**

1. Test hardware by fastening and unfastening the item. The hardware should function easily with little force being applied and with no difficulty in the release.
2. Open and close zipper to test. The zipper should operate smoothly through its full length.

### **C. Refurbishing Procedures**

1. Repair holes, cuts, or tears.
2. Replace nonfunctioning hardware.

### **D. Retesting Criteria**

Retest all replacement hardware as specified in section B.

### **E. Cleaning Procedures**

1. Allow any mud and loose dirt to dry, then remove using a stiff-bristle brush.
2. Remove light oil using a solution of warm water and mild detergent and a brush. Rinse with clear water, let dry.
3. Remove heavy oil by soaking in water-soluble biodegradable degreaser for 30 minutes and then high-pressure wash or steam clean, and hang to dry.
4. Pretreat with water-soluble biodegradable degreaser, steam clean or high-pressure wash, and hang to dry
5. **DO NOT MACHINE WASH OR DRY. DO NOT USE BLEACH TO CLEAN FABRIC.**

### **F. Repackaging**

Store 10 bags in carton (to be determined).

### **G. Storage and Shelf Life Checks**

None at this time.

See appendix K for information on water-soluble biodegradable degreasers.

**ITEM: BAG, DRINKING WATER, 55 GALLON**

**NFES #0435**

**A. Initial Inspection/Disposal Criteria**

1. Nylon outer bag.
  - a. Any holes, cuts, tears, burns, or torn seams that are not economically repairable.
  - b. Any zipper that does not close properly.
  - c. Unsightly dirt or fuel stain that cleaning cannot eliminate.
  - d. Any buckle that does not function properly.
2. Fill and drain hardware.

Any part missing or damaged.
3. Liners.
  - a. Replace old liner and make sure plugs are tightly threaded onto fitment caps to keep new liner sanitary.
  - b. Check condition of spare liner. Unless the integrity of the liner is in question, do not remove from the sealed bag to make this inspection.

**NOTE: The cache manager shall determine when repair is economical. This decision will depend on available repair facilities.**

**B. Tests**

1. Test fill and drain fittings for proper function and tight seal. The fill fitting is the special hardware that keeps dirt and bacteria out of the liner.
2. Test buckles by fastening and unfastening. They should function easily with little force applied and with no difficulty in the release.
3. Test zippers by opening and closing. Zipper should operate smoothly over its full length.

**C. Refurbishing Procedures**

1. Repair holes, cuts, tears, and broken seams.
2. Replace nonfunctioning buckles.
3. Replace nonfunctioning zipper.
4. Replace used liners (NFES #0436).
5. Replace missing or damaged fittings.

**D. Retesting Criteria**

Test any replacement buckle, zipper, or fitting as specified in section C.

**E. Cleaning Procedures**

1. Nylon outer bag.
  - a. Allow mud and loose dirt to dry, then remove with a stiff bristle brush. If stains remain, clean as recommended in E.1.b
  - b. To remove heavy oil, as well as dirt and stains, soak in a solution of water-soluble biodegradable degreaser for 30 minutes, then brush with a bristle brush. Rinse thoroughly and hang to dry.
  - c. Pretreat by spraying a solution of water-soluble biodegradable degreaser on bag and pressure wash and hang to dry.

**DO NOT MACHINE WASH OR DRY. DO NOT USE BLEACH TO CLEAN FABRIC.**
2. Filling and draining hardware.
  - a. Wash thoroughly in a solution of chlorine bleach, consisting of 1-ounce bleach per gallon of water. Rinse in potable water and dry completely.
  - b. Once hose and fittings are sanitized and dried, reseal in the plastic storage bag provided and put in zipper pocket.

## **Storage and Refurbishing Standards**

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### **F. Repackaging**

Pack 1 each in carton 18 inch by 15 inch by 10 inch with printed instructions and information and parts list enclosed.

### **G. Storage and Shelf Life Checks**

None at this time.

See appendix K for information on water-soluble biodegradable degreasers.

**ITEM: BAG, SLEEPING, GENERAL PURPOSE M-1980**

**NFES #0022**

**A. Initial Inspection/Disposal Criteria**

See Local Job Hazard Analysis for proper personnel protective equipment required for inspecting bags.

1. Any hole, cut, tear, abrasion, or torn seam that cannot be repaired economically.
2. Unsightly dirt or stain that laundering cannot eliminate.
3. Missing slider, damaged chain, or other defects that make zipper unusable.
4. Polyester batting in hard clumps or inadequate lofting.
5. Ink or any type of writing on bag.
6. Any signs of any type of body fluids.

**NOTE: The cache manager shall determine when repair is economical. This decision will depend on available repair facilities.**

**B. Tests**

1. Check spring lock to ensure spring works properly and that the cord passes freely through when the lock is disengaged.
2. Close zipper to ensure it provides a smooth and secure closure the full length of the bag opening.
3. Open and close the hook and pile fastener to ensure closure is adequate.

**C. Refurbishing Procedures**

1. Repair any hole, cut, tear, abrasion, or open seam. See note in section A.
2. Remove dirt or stains.
3. Replace any zipper that has damaged chain and replace any missing slider. See note in section A.
4. Check loft of batting in bags prior to sending for laundering.

**D. Retesting Criteria**

Retest all replacement hardware.

**E. Cleaning Procedures**

1. Remove all contents not part of the bag and zip closed before laundering.
2. Launder bags in front-loading machine. Use mild soap in water of no more than 130 °F. Bags shall undergo six wash and rinse cycles in an alternating combination, i.e., three washes and three rinses.
3. With bag unzipped, sterilize by dry tumbling with vacuum extraction of loosened dirt and soil particles, with a controlled heat application. The heat shall be held at an average of 130 °F for a minimum of 20 minutes. The dryer unit shall be of the reverse-action type. All bags shall be unfolded and shall tumble free. (To obtain the average temperature, test the temperature every 5 minutes and average the findings.)
4. After drying, zip bags closed.

**F. Repackaging**

Package 5 bags in carton NFES #0644 (NSN 8115-00-139-0691).

Cache Option: Package 10 bags in carton NFES #0513 (NSN 8115-01-290-9543).

**G. Storage and Shelf Life Checks**

Prior to shipping, check carton for rodent damage. If found, handle accordingly and dispose of carton and contents in appropriate manner.

## Storage and Refurbishing Standards

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ITEM: BAG, SLEEPING, FIREFIGHTERS, M-1981

NFES #1062

### A. Initial Inspection/Disposal Criteria

See Local Job Hazard Analysis for proper personnel protection equipment required for inspecting bags.

1. Any hole, cut, tear, abrasion, or torn seam.
2. Unsightly dirt or stain that laundering cannot eliminate.
3. Polyester batting in hard clumps or lofting inadequate.
4. Head tie(s) loose or missing.
5. Ink or any type of writing on bag.
6. Any signs of any type of body fluids.

**NOTE: The cache manager shall determine when repair is economical. This decision will depend on available repair facilities.**

### B. Tests

None.

### C. Refurbishing Procedures

1. Repair any hole, cut, tear, abrasion, or open seam. See note in section A.
2. Remove unsightly dirt or stains.
3. Check loft of batting in bags that have been laundered more than three times.

### D. Retesting Criteria

None.

### E. Cleaning Procedures

1. Remove all contents not part of the bag before laundering.
2. Launder bags in front-loading machine. Use mild soap in water of no more than 130 °F. Bags shall undergo six wash and rinse cycles in an alternating combination, i.e., three washes and three rinses.
3. Sterilize bag by dry tumbling with vacuum extraction of loosened dirt and soil particles, with a controlled heat application. Heat shall be held at an average of 130 °F for a minimum of 20 minutes. The dryer shall be of the reverse-action type. All bags shall be unfolded and shall tumble free. (Obtain average temperature by testing temperature every 5 minutes and averaging the findings).
4. Lay out each dry bag flat and fold in half lengthwise. Tightly roll bag from head to foot and tie in the middle with a suitable cord.

### F. Repackaging

1. Package 10 bags in carton NFES #0513 (NSN 8115-01-290-9543).
2. Local cache option to package in plastic bag prior to final packaging.

### G. Storage and Shelf Life Checks

Prior to shipping, check carton for rodent damage. If found, handle accordingly and dispose of carton and contents in appropriate manner.

**ITEM: BAG, SLINGABLE, WATER, 72 GALLON, NON-POTABLE**  
**BAG, SLINGABLE, WATER, 250 GALLON, NON-POTABLE**  
**BAG, SLINGABLE, WATER, 360 GALLON, NON-POTABLE**

**NFES #0426**  
**NFES #6017**  
**NFES #6021**

**A. Initial Inspection/Disposal Criteria**

1. Separate by NFES #.
2. Visually inspect for missing components, or need for repair such as: straps, hoses, spigot, cap, and gasket.

**B. Tests**

1. Fill with air or clean water (NFES #0426). Check for obvious leaks and mark leaks (drain water). Check for bad seams and deterioration of adhesives (previous patches).
2. Visually inspect bags for rips, tears, or obvious defects. (NFES #6017, #6021)

**C. Refurbishing Procedures**

1. Clean area around damaged spot with lacquer thinner or other suitable cleaner. Caution: Utilize well-ventilated area. Apply suitable glue (manufacturers recommendation) to both surfaces (patch and tank). Let dry until tacky. Place patch on damaged area and apply pressure with roller or suitable device for at least 1 minute.
2. Repair or replace any damaged components. Clean exterior of tank thoroughly (with filler cap attached).
3. Support or hang tank with spigot closed, remove cap and fill with water to rinse out tank. Replace cap. Shake tank vigorously until all foreign matter is removed. Drain tank completely through hose and spigot.
4. Invert tank after removing cap, open spigot and empty as much water as possible. Let dry inverted for 1 hour in sun, if possible.

**D. Retesting Criteria**

1. Recheck any patches or repairs.
2. Replace cap and close spigot.

**E. Cleaning Procedures**

None.

**F. Repackaging**

1. Ensure that tank is stenciled visibly with the words "NON-POTABLE" or "SUPPRESSION USE ONLY" and proper NFES # is stenciled on tank.
2. Use carton (cache option) for NFES #0426 and label accordingly.
3. Use carton (cache option) for NFES #6017 and label accordingly.
4. Use carton (cache option) for NFES #6021 and label accordingly.

**G. Storage and Shelf Life Checks**

None at this time.

**ITEM: BAG, SUPPRESSION WATER, 55 GALLON**

**NFES #0437**

### **A. Initial Inspection/Disposal Criteria**

1. Nylon outer bag.
  - a. Any holes, cuts, tears, burns, or torn seams that are not economically repairable.
  - b. Any zipper that does not close properly.
  - c. Unsightly dirt or fuel stain that cleaning cannot eliminate.
  - d. Any buckle that does not function properly.
2. Fill and drain hardware.

Any part missing or damaged.
3. Liners.
  - a. Replace old liner and ensure that plugs are tightly threaded onto fitment caps to keep new liner sanitary (GSA does not supply extra bag).

**NOTE: The cache manager shall determine when repair is economical. This decision will depend on available repair facilities.**

### **B. Tests**

1. Test fill and drain fittings for proper function and tight seal. The fill fitting is a special piece of hardware that keeps dirt and bacteria out of the liner.
2. Test buckles by fastening and unfastening. They should function easily with little force applied and with no difficulty in the release.
3. Test zippers by opening and closing. Zipper should operate smoothly over its full length.

### **C. Refurbishing Procedures**

1. Repair holes, cuts, tears, and broken seams.
2. Replace nonfunctioning buckles.
3. Replace nonfunctioning zipper.
4. Replace used liners (NFES #0438).
5. Replace missing or damaged fitting parts.

### **D. Retesting Criteria**

Test any replacement buckle, zipper, or fitting as specified in section C.

### **E. Cleaning Procedures**

1. Nylon outer bag.
  - a. Allow mud and loose dirt to dry; remove with a stiff-bristle brush. If stains remain, clean as recommended in E.1.b.
  - b. To remove heavy oil, as well as dirt and stains, soak in water-soluble biodegradable degreaser for 30 minutes and brush with a bristle brush. Rinse thoroughly and hang to dry.
  - c. Pretreat by spraying water-soluble biodegradable degreaser on bag, high-pressure wash, and hang to dry.  
**DO NOT MACHINE WASH OR DRY. DO NOT USE BLEACH TO CLEAN FABRIC.**

### **F. Repackaging**

Suggested carton is 18 inch by 15 inch by 10 inch (NSN 8115-00-190-5007). Package printed instruction information and parts list with bag.

### **G. Storage and Shelf Life Checks**

None at this time.

See appendix K for information on water-soluble biodegradable degreasers.

**ITEM: BATTERY FOR HAND-HELD RADIOS**

**NFES #0293, #1203, #1231,  
#1255, #1264, #1520, #1538**

**A. Initial Inspection/Disposal Criteria**

Established by the National Radio Cache, Boise, ID, March 2, 1990.

1. Visual inspection of package—if package opened, return credit will not be given.
2. Batteries may be used by the agency ordering the batteries if package opened.
3. All unopened boxes of batteries that have not reached their expiration date will be returned for credit.

**B. Tests**

None at this time.

**C. Refurbishing Procedures**

None at this time.

**D. Retesting Criteria**

None at this time.

**E. Cleaning Procedures**

None at this time.

**F. Repackaging**

None at this time.

**G. Storage and Shelf Life Checks**

Not to exceed expiration date.

## Storage and Refurbishing Standards

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**BERM, CONTAINMENT, 55 GAL. (1 to 4 drums)**  
**BERM, CONTAINMENT, MK III**

**NFES #0692**  
**NFES #0693**

### **A. Initial Inspection/Disposal Criteria**

1. Check for fuel or other liquids which may be present.
  - a. Use absorbent cloth or similar to pick up excess fluids.
  - b. Dispose of soiled absorbent according to local hazardous materials standards.
2. Check for small holes, rips or tears which may be repairable.
  - a. Mark with felt tip pen or other means of identification.

### **B. Tests**

None.

### **C. Refurbishing Procedures**

1. Clean and repair as stated in SEI Industries Guidelines For Use and Repair.
2. See section F.

### **D. Retesting Criteria**

None.

### **E. Cleaning Procedures**

1. Clean with steam cleaner/power washer to remove matter such as mud, dirt, and grease.
2. Use a solution of water-soluble biodegradable degreaser and water to remove grease with an absorbent cloth. Dispose of saturated cloth according local hazardous materials standards.

### **F. Repackaging**

1. Roll berm and band for storage.
2. Store in a dry environment.

### **G. Storage and Shelf Life Checks**

None at this time.

More information:  
Mulligan & Associates  
P.O. Box 819  
Canby, OR 97013  
Phone: 503-239-2311

SF1 Industries  
7400 Wilson Avenue  
Delta, BC, Canada V4G 1F5  
Phone: 604-946-3131  
Web site: <http://www.sei-ind.com>

See appendix K for information on water-soluble biodegradable degreasers.

**ITEM: BLANKET, WOOL**

**NFES #0441**

**A. Initial Inspection/Disposal Criteria**

1. Check for visible rips, burns, or tears.
2. Check for possible mildew.

**B. Tests**

None.

**C Refurbishing Procedures**

1. To be DRY CLEANED ONLY.
2. Have small rips or holes sewn by laundry (up to 1-inch rip or hole).

**D. Retesting Criteria**

None.

**E. Cleaning Procedures**

Wool blankets must be DRY CLEANED ONLY.

**F. Repackaging**

1. Individually pack in plastic if possible.
2. Pack 15 each in carton NFES #0644 (33 inch by 16 inch by 22 inch) (NSN 8115-00-139-00691).

**G. Storage and Shelf Life Checks**

None at this time.

## Storage and Refurbishing Standards

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**ITEM: BUCKET, HELICOPTER, FIBERGLASS OR SLINGABLE (COLLAPSIBLE)**

**NFES #0157, #6011  
#6012, #6013**

### **A. Initial Inspection/Disposal Criteria**

1. Inspect visually for missing parts (fill caps, etc.)
2. Inspect for structural damage that prevents repair—dispose (salvage usable parts).
3. Inspect, if used, to ensure serviceability.
4. Clean and forward to qualified inspector.

### **B. Tests**

1. Tests conducted on specific bucket are by certified inspectors.
2. On NFES #6012 inspector is manufacturer:

SEI Industries  
7400 Wilson Avenue  
Delta, BC, Canada V4G 1E5  
Phone: 604-946-3131

Manufacturer's authorized U.S. overhaul facility: (NFES #6012)  
Field Support Services  
2001 Flightway Drive  
Atlanta, Georgia 30341  
Phone: 770-454-1130

3. On other buckets, area inspectors can be used, such as:

Aero Accessory Service  
612 S. Scott  
Boise, Idaho 83705  
Phone: 208-344-6461

### **C. Refurbishing Procedures**

Completed in sections A and B.

### **D. Retesting Criteria**

Completed in section B.

### **E. Cleaning Procedures**

Completed in section A.

### **F. Repackaging**

Local cache options.

### **G. Storage and Shelf Life Checks**

None at this time.

**ITEM: CAN, GASOLINE, SAFETY, 5 GAL. DOT, OSHA APPROVED STYLE**

**NFES # 0606**

**A. Initial inspection/Disposal Criteria**

1. Check for fuel and dispose of properly.
2. See appendix F.

**NOTE: Dispose of contaminated fuel according to hazardous material regulations in your area.**

3. Check for leaks or separation along seams.
4. Check all threads on nozzles for serviceability.
5. Check for proper labeling.
6. Check all cotter keys and pins.

**B. Tests**

1. Visible checks only.
2. Dispose of unserviceable cans.

**C. Refurbishing Procedures**

1. Drain all existing fuel.
2. Turn upside down with lids off or open to dry.
3. Replace any defective cotter key or pins.
4. Check spring closure devices to be sure they are functioning properly.
5. Secure proper spout to top of can (3/4 inch on old style and 1 inch on new style).
6. Visually verify that no rust exists inside container.
7. Wipe down outside of container and repaint if necessary.
8. Purge can.
9. Ensure that containers are properly marked and labeled flammable liquids only.

**D. Retesting Criteria**

None.

**E. Cleaning Procedures**

See section C.

**F. Repackaging**

Package according to DOT standards.

**G. Storage and Shelf Life Checks**

Annual visual inspection for rust.

Replacement parts available from:  
SAFE-T-WAY  
National Sales Office  
P.O. Box 1188  
Salem, OH. 44460

Phone: 330-332-3200  
Fax: 330-332-2340  
Fax order entry: 800-721-7216  
Web site: <http://www.safetway.thomasregister.com/>

## Storage and Refurbishing Standards

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**ITEM: CAN, GAS, VARIOUS  
CONTAINER, FUEL/OIL**

**NFES #0085, #0265, #0350,  
#0741, #1175, #1290, #1291**

### **A. Initial Inspection/Disposal Criteria**

1. Check for fuel and dispose of properly.

**NOTE: Dispose of contaminated fuel according to hazardous material regulations in your area.**

2. Check for leaks or separation along seams.
3. Check all threads on nozzles for serviceability.

### **B. Tests**

1. Visual checks only.
2. Dispose of unserviceable cans including those with unidentifiable contents.

### **C. Refurbishing Procedures**

1. Drain all existing fuel.
2. Use a rag and air hose to dry the interior of the container.
3. Turn upside down with lids off or open to dry.
4. Inspect vent hole to ensure it is clean and serviceable.
5. Visually verify that no rust exists inside container.
6. Wipe down outside of container and repaint if necessary.
7. Purge can.

### **D. Retesting Criteria**

None.

### **E. Cleaning Procedures**

See section C.

### **F. Repackaging**

Local cache option.

### **G. Storage and Shelf Life Checks**

Annual visual inspection for rust.

**ITEM: CASE, CARRYING, FIRE SHELTER, M-2002**

**NFES #0927**

**A. Initial Inspection/Disposal Criteria**

1. The M-2002 Fire Shelter Carrying Case is royal blue in color with white markings.
2. Inspect for cuts, tears, torn seams or flap. If any found that are unrepairable, remove from service.
3. Ensure that M-2002 use instructions (English on one side, Spanish on the other) are in the Use Instructions pocket on the front.
4. Check that there are two belt clips and that they are in good working condition.

**NOTE: The cache manager shall determine when repair is economical. This decision will depend on the available repair facilities.**

**B. Tests**

None.

**C. Refurbishing Procedures**

1. If necessary, replace Use Instructions with M-2002 Use Instructions English on one side, Spanish on the other.
2. If necessary, replace belt clips.

**D. Retesting Criteria**

None.

**E. Cleaning Procedures**

1. Allow any mud and loose dirt to dry, then remove with a stiff brush.
2. Remove light oil using a solution of warm water and detergent and a brush. Rinse with clear water, let dry.
3. Remove heavy oil with a water-soluble biodegradable degreaser; brush with spray cleaners or detergent and water solution; rinse with clear water and let dry.
4. Or steam clean and let dry.
5. Do not machine wash or dry.

**F. Repackaging**

If not part of the Fire Shelter, Complete, M-2002, pack 100 carrying cases in a commercial carton, Style RSC, Type CF, class domestic, grade 275, sized to fit.

**G. Storage and Shelf Life Checks**

None.

## Storage and Refurbishing Standards

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**ITEM: CASE, CARRYING, FIRE SHELTER, PRACTICE, M-2002**

**NFES #2680**

### **A. Initial Inspection/Disposal Criteria**

1. The M-2002 Practice Fire Shelter Carrying Case is orange in color.
2. Inspect for cuts, tears, torn seams or flap. If any found that are unrepairable, remove from service.
3. Ensure that a M-2002 use instruction sheet and a folding instructions sheet are in the Use Instructions pocket on the front.
4. Check that there are two belt clips and that they are in good working condition.

**NOTE: The cache manager shall determine when repair is economical. This decision will depend on the available repair facilities.**

### **B. Tests**

None.

### **C. Refurbishing Procedures**

1. If necessary, replace Use Instructions with M-2002 Use Instructions, English on one side, Spanish on the other.
2. If necessary, replace Folding Instructions with M-2002 Folding Instructions.
3. If necessary, replace belt clips.

### **D. Retesting Criteria**

None.

### **E. Cleaning Procedures**

1. Allow any mud and loose dirt to dry, then remove with a stiff brush.
2. Remove light oil using a solution of warm water and detergent and a brush. Rinse with clear water, let dry.
3. Remove heavy oil with a water-soluble biodegradable degreaser, brush with spray cleaners or detergent and water solution, rinse with clear water and let dry; or steam clean and let dry.
6. Do not machine wash or dry.

### **F. Repackaging**

If not part of the Practice Fire Shelter, Complete, M-2002, pack 100 carrying cases in a commercial carton, Style RSC, Type CF, class domestic, grade 275, sized to fit.

### **G. Storage and Shelf Life Checks**

None.

**ITEM: CHAIN SAW**

**NFES #0159**

**A. Initial Inspection/Disposal Criteria**

Check Local Job Hazard Analysis for proper personnel protection equipment required when working on this item.

1. Evidence of use (dust, oil, fuel and starter seal broken).
2. Return to stock if not used and run within the last 12 months.
3. Evidence of damage.
4. Check and remark/replace accountable property tags if necessary.

**B. Tests**

NOTE: See Refurbishing Procedures (section C).

1. Repair to recommended manufacturer's standards using local repair procedures.
2. Test for performance.
3. Drain fuel and purge.
4. Tie off starter rope to handle to determine field use. Use plastic snap seal.
5. Dispose of according to local policies if saw is not economically repairable.

**C. Refurbishing Procedures**

1. Refurbish to manufacturer's specifications and tolerances.
2. Check for broken seal to verify that saw was used, even if seal is intact, look for exterior damage. If used, disassemble and clean complete saw, removing chain, bar, sprocket cover, sprocket, clutch drum clutch, worm gear, air filter cover, air filter, cylinder cover, sparkplug, starter cover, pawls, rope rotor, and muffler.
3. Clean all parts, inspecting each part as reassembling.
4. Filters should be cleaned with warm soap and water. New filter material (flocking) degrades quickly with solvent washing. Replace if holes appear in flocking.
5. Replace sparkplug if there are any doubts. Inspect sparkplug boot and high-tension lead.
6. Lubricate starter spring. Check rope for fraying. Replace if frayed.
7. Clean muffler of excess carbon. Check spark arrestor screen for build up. Bead blast and repair if necessary.
8. Replace sprocket or star drum if the wear is deep enough to catch a fingernail.
9. Sharpen chain, using manufacturer's procedures after each use. Check and adjust raker depth with a depth gauge regularly. Replace chain if: cutters are of unequal length on opposing sides; two or more cutters are broken; tiestraps are worn down to rivets; if stretched beyond tensioning abilities; or when side plate is filed back to rear attaching rivet.
10. Service bar after each use. Check groove depth and width; true and file rails; and check for bends. Replace if rails are cracked, chipped, burned, or have a dip deeper than 1/16 inch. Check sprocket tip for wear and looseness. Lubricate tip if grease type.
11. Inspect clutch shoes and springs. Replace if burned or missing. Replace clutch drum if badly burned (discolored).
12. Test run. Set oiler to full open and check function, test brake function. Set RMS's with a digital tach, between 12,500 and 13,000 (or manufacturer's specifications). Make a test cut.
13. If saw runs properly, purge fuel, wipe sawdust and oil off saw, seal starter rope, and tag it with the date and a signature.
14. If a problem is exposed on run-up, use Stihl 15-minute engine analysis to troubleshoot.

**D. Retesting Criteria**

Completed in section B.

**E. Cleaning Procedures**

Completed in sections B and C.

## Storage and Refurbishing Standards

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### **F. Repacking**

1. Place bar cover over chain saw bar for safety.
2. If packaged in kit form, assemble in carton NFES #0353 with other component items.

### **G. Storage and Shelf Life Checks**

Retest annually when used.

**ITEM: CHAPS, PROTECTIVE**

**NFES #0044, #0045  
#0078, #0150**

**A. Initial Inspection/Disposal Criteria**

1. Fabric and webbing.
  - a. Any hole, cut, tear, or burn that cannot be repaired economically.
  - b. Any area of abrasion that has weakened fabric beyond repair.
  - c. Any webbing that is cut, burned, or abraded beyond economical repair.
  - d. Either leg has more than five patches.
  - e. Any cut exceeds 7 inches.
  - f. All layers have been cut through.
2. Hardware.

Check all plastic and metal hardware for dirt, cracks, breaks, and proper function. See section B.

**NOTE: The cache manager shall determine when repair is economical. This decision will be based on available repair facilities.**

**B. Tests**

- See appendix A.
- Test hardware by fastening and unfastening. The hardware should function easily with little force being applied and no difficulty in the release.

**C. Refurbishing Procedures**

1. Repair burn holes and cuts. Repair techniques vary depending on whether damage is restricted to the outer layer of green nylon duck or involves the yellow Kevlar also. If only the nylon is burned or cut through, hand stitch this folded edge to the nylon. When hand stitching the patch to the nylon, ensure no stitches are sewn into the Kevlar. Deeper cuts that involve the Kevlar material must be repaired with a patch equal to the number of layers cut and must be machine sewn. If three layers are cut, the patch must contain these three layers. Make the patch large enough to extend 1-inch beyond the damaged area. Insert the patch under the nylon, then sew on all four sides and along the cut in the nylon shell. Obtain patch materials from a pair of previously damaged chaps.
2. Replace burned, abraded, or cut webbing with like items.
3. Replace broken or nonfunctioning hardware.
4. Reference: Inspection and Repairing Your Chainsaw Chaps, MTDC Publication 8267 2505.

**D. Retesting Criteria**

Retest all replaced hardware as specified in section B.

**E. Cleaning Procedures**

1. Allow any mud or loose dirt to dry, then remove using a stiff-bristle brush. If stains remain, wash as recommended below.
2. Clean to remove heavy oil, as well as dirt and stains. Soak in a water-soluble biodegradable degreaser for 30 minutes. Brush with a bristle brush, rinse thoroughly, and hang to dry.
3. Or pretreat with a water-soluble biodegradable degreaser, pressure wash, and hang to dry.  
**DO NOT MACHINE WASH OR DRY. DO NOT USE BLEACH TO CLEAN FABRIC.**

**F. Repackaging**

Recommended carton is 16 inch by 14 inch by 12 inch (NSN 8115-00-183-9484). Pack 10 pair of chaps of the same size in carton and label with proper NFES label.

**G. Storage and Shelf Life Checks**

None at this time.

See appendix K for information on water-soluble biodegradable degreasers.

### ITEM: CHEST HARNESS, FIRE SHELTER

NFES #0294

#### A. Initial Inspection/Disposal Criteria

1. Webbing.
  - a. Any webbing that has been cut, torn, frayed, or burned beyond economical repair.
  - b. Any area of abrasion that has weakened the webbing beyond repair.
2. Hardware  
Check all plastic hardware for cracks, breaks, and proper function (see section B).

**NOTE: The cache manager shall determine when repair is economical. This decision will depend on the available repair facilities.**

#### B. Tests

Test hardware by fastening and unfastening. The hardware should function easily with little force and difficulty in opening and closing.

#### C. Refurbishing Procedures

1. Repair holes, cuts, tears, and/or burns.
2. Replace damaged hardware.

#### D. Retesting Criteria

Retest as specified in section B.

#### E. Cleaning Procedures

1. Allow any mud and loose dirt to dry; remove with a stiff brush.
2. Remove light oil by spraying with a water-soluble biodegradable degreaser, power wash or scrub with a stiff brush, and hang to let dry.
3. Remove heavy oil by soaking in water-soluble biodegradable degreaser, power wash, and hang to dry.

Do not machine wash or dry.

#### F. Repackaging

Pack 20 chest harnesses in (carton to be determined).

#### G. Storage and Shelf Life Checks

None at this time.

See appendix K for information on water-soluble biodegradable degreasers.

**ITEM: CONNECTOR, PIGTAIL**

**NFES #0398**

**A. Initial Inspection/Disposal Criteria**

1. Inspect wire and connections for damage.
2. Broken wires (electrical cord).
3. Bent or distorted electrical connections.
4. Cuts, tears or frayed electrical wires.

**B. Tests**

Check electrical connections per drawing FS/OAS A-16 accessory connector pin assignments: simplex helitorch, bambi bucket, remote hook, and seeders (2-wire). Electrical pin connections can be checked per the above drawing with an ohmmeter.

**C. Refurbishing Procedures**

Repair if economically feasible.

**D. Retesting Criteria**

See section B.

**E. Cleaning Procedures**

Clean electrical connections with electrical cleaner, wipe, or blow dry.

**F. Repackaging**

Local cache option.

**G. Storage and Shelf Life Checks**

None at this time.

## Storage and Refurbishing Standards

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**ITEM: CORD, MULTI-LIGHT SOCKETS**

**NFES #0563**

### **A. Initial Inspection/Disposal Criteria**

1. Bent or missing bulb guards.
2. Missing or broken bulbs.
3. Bent plug.
4. Dispose of if:
  - a. Cracked and/or broken light sockets.
  - b. Broken plugs (deliberate alterations).
  - c. Broken, frayed, or burned cords.
5. Validate cord is a UL approved with a 12/3 gauge minimum wire.

### **B. Tests**

1. Install new bulbs in all sockets.
2. Plug into 110-volt outlet.
3. Test cord with a Ground Fault Interrupter (GFI) testing device.
4. Test 110-volt outlet first, then plug cord into outlet and check cord by plugging GFI testing device into end of cord.

### **C. Refurbishing Procedures**

1. Replace blown and/or broken bulbs.
2. Replace missing bulb guards.

### **D. Retesting Criteria**

Retest if bulbs were replaced.

### **E. Cleaning Procedures**

1. Damp wipe with mild detergent solution to remove mud, dirt, and grease.
2. Clean guards with soapy water, brush, and scouring pad.
3. Do NOT soak.
4. Dry completely before use (due to possible electric shock).

### **F. Repackaging**

Local cache option for coiling and repacking.

### **G. Storage and Shelf Life Checks**

None at this time.

**ITEM: CORDS, EXTENSION, 3 WIRE**

**NFES #0560, #1172**

**A. Initial Inspection/Disposal Criteria**

1. Visually inspect for broken plugs, cracked, or damaged cord.
2. Discard field modified cords if not economically feasible to repair.
3. Ensure that neutral grounding prong is intact.
4. Validate cord is a UL approved with a 12/3 gauge minimum wire.

**B. Tests**

Test cord with a Ground Fault Interrupter (GFI) testing device. Test 110-volt outlet first, then plug cord into outlet and check cord by plugging GFI testing device into end of cord.

**C. Refurbishing Procedures**

Wipe down cord with damp cloth to remove foreign material.

**D. Retesting Criteria**

Check visually before issue to ensure that damage has not occurred during storage or that someone possibly placed a defective cord in storage location.

**E. Cleaning Procedures**

Completed in section C.

**F. Repackaging**

1. Rollup cord (approximately 12- to 14-inch loop). Tie off with wire ties or strappex banding (minimum of 1 per cord).
2. Tag cord with proper NFES number and nomenclature.
3. Repack in carton 18 inch by 15 inch by 5 inch (NSN 8115-00-290-3386).
  - a. NFES #0560-3 each per carton.
  - b. NFES #1172-2 each per carton.

**G. Storage and Shelf Life Checks**

None at this time.

## Storage and Refurbishing Standards

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ITEM: COT, FOLDING

NFES #0053

### A. Initial Inspection/Disposal Criteria

1. Visually inspect for tears in cover, soiled cover, missing parts, and loose nuts and bolts.
2. Structural damage to frame.
3. Broken wooden framed cots—dispose (salvage usable parts when feasible).

### B. Tests

Assemble to check for weakness or nonvisual damage.

### C. Refurbishing Procedures

1. If cover is torn or its seam is separated, replace the cover. See parts list section C.4.a.
2. Replace damaged rail-rubbing pieces. See parts list section C.4.b.
3. If plug for cot ends are missing replace them with the appropriate plug. See parts list, section C.4.c, d, e.
4. Parts list for cot parts available from Department of Defense-S9I.
  - a. Cover, Nylon 7105-00-935-1845.
  - b. Rail End Tubing 7105-00-935-0424.
  - c. Plug (Dowel) 7105-00-935-0433.
  - d. Plug (Spacing) 7105-00-935-0344.
  - e. Plug (End) 7105-00-935-0435.
5. Soiled covers can be steam cleaned and left to dry. Assemble cot before steam cleaning covers.

### D. Retesting Criteria

Reassemble to ensure completeness and all parts fitting properly.

### E. Cleaning Procedures

Completed in section C.

### F. Repackaging

1. Refold and seal with nylon tie wrap or band. When it is returned from the next incident, visual inspection can readily determine if it is used. If still sealed, it will not need rechecking.
2. Local cache option for repackaging.

### G. Storage and Shelf Life Checks

None at this time.

**ITEM: COUPLINGS**

NFES #0710, #0855, #0856  
#0857, #0916

**A. Initial Inspection/Disposal Criteria**

1. Visual checks on male couplings.
  - a. Check for worn or damaged threads.
  - b. Check coupling to ensure it has not been smashed, bent, or cracked.
  - c. Ensure that rocker lugs are not stripped.
2. Visual checks on female couplings.
  - a. Check for worn or damaged threads.
  - b. Check coupling to ensure it has not been smashed, bent, or cracked.
  - c. Check for gaskets.
  - d. Ensure that swivel operates properly.
  - e. Ensure that rocker lugs are not stripped.

**B. Tests**

1. Male coupling.

Attach to female coupling to ensure that threads operate smoothly.
2. Female coupling.

Ensure that threads operate smoothly.

**C. Refurbishing Procedures**

1. Male coupling.
  - a. If threads are damaged, try to file with a triangular file.
2. Female coupling.
  - a. Replace gaskets if necessary.
  - b. Lubricate with a dry lubricant, i.e., graphite.

**D. Retesting Criteria**

1. Recheck male threads that have been repaired or “chased.”

**E. Cleaning Procedures**

1. Wash and clean of mud, dirt, and grease.
2. Clean in parts washer, high pressure wash or clean in sink with dishwashing detergent with a brush or scouring pad.
3. Rinse thoroughly and let dry.

**F. Repackaging**

- Package 10 each in carton (cache option) and label accordingly.  
Package 60 each in carton (cache option) and label accordingly.

**G. Storage and Shelf Life Checks**

None at this time.

## Storage and Refurbishing Standards

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<b>ITEM:</b>	<b>EXTINGUISHER, FIRE, DRY CHEMICAL 20 POUND</b>	<b>NFES #0307</b>
	<b>EXTINGUISHER, FIRE, DRY CHEMICAL 10 POUND</b>	<b>NFES #0319</b>
	<b>EXTINGUISHER, FIRE DRY CHEMICAL 2-B:C</b>	<b>NFES #1033</b>
	<b>EXTINGUISHER, FIRE DRY CHEMICAL 5 POUND</b>	<b>NFES #2143</b>

### **A. Initial Inspection/Disposal Criteria**

1. Visual inspection indicating use (discharge).
2. Check for missing parts.
  - a. Safety pin.
  - b. Inspection card.

### **B. Tests**

1. Testing and filling performed by authorized service representatives only.

### **C. Refurbishing Procedures**

1. Verify expiration date and signature of authorized service representative.
2. Clean extinguisher with damp rag to remove dust, dirt, and grime. Completed in sections A and B.

### **D. Retesting Criteria**

Completed in section B.

### **E. Cleaning Procedures**

Completed in section B.

### **F. Repackaging**

- NFES #0307 Package 1 each in carton NFES #0385 to prevent accidental discharge of extinguisher.
- NFES #0319 Package 1 each in carton (cache option) to prevent accidental discharge of extinguisher.
- NFES #1033 Package 1 each in carton (cache option) to prevent accidental discharge of extinguisher.
- NFES #2143 Package 1 each in carton (cache option) to prevent accidental discharge of extinguisher.

### **G. Storage and Shelf Life Checks**

Yearly inspection by authorized service representative.

**ITEM: FENCE, BARRICADE, PLASTIC, 4' X 50' ROLL**

**NFES #0608**

**A. Initial Inspection/Disposal Criteria**

1. Check for damage.
2. Check for length.
3. Check for grease, oil, or paint.

**B. Tests**

Measure to ensure that length is 50 feet. If short, splice as required.

**C. Refurbishing Procedures**

Replace damage barricade section by splicing. Splice using small cable ties or small hog rings one top, one bottom, and one every 6 inches to ensure splice security; only one splice for each barricade fence.

**D. Retesting Criteria**

Measure to ensure that the roll is 50 feet.

**E. Cleaning Procedures**

Clean with high-pressure wash; or clean in sink with dishwashing detergent using a brush or scouring pad.

**F. Repackaging**

Reroll and secure. Store as needed.

**G. Storage and Shelf Life Checks**

None at this time.

## Storage and Refurbishing Standards

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**ITEM: FIRELINE PACK, COMPLETE**

**NFES #0674**

### **A. Initial Inspection/Disposal Criteria**

1. The Fireline pack with canteen case and stuff sack is royal blue in color with white markings.
2. Inspect for cuts, tears, torn seams or flaps. Work the zippers on the cap for proper operation. Check that there are cord locks in place for both side pockets, the top rain skirt, and on the stuff sack, and that all cords are serviceable. If any are found that are unrepairable, remove from service.
3. Check that all buckles are complete and serviceable. Replace any that are not.
4. Check that there are two belt clips on the canteen case and that they are in good working condition.

**NOTE: The cache manager shall determine when repair is economical. This decision will depend on the available repair facilities.**

### **B. Tests**

None.

### **C. Refurbishing Procedures**

1. If necessary, replace belt clips, cords, cord locks, and buckles.

### **D. Retesting Criteria**

None.

### **E. Cleaning Procedures**

1. Allow any mud and loose dirt to dry, then remove with a stiff brush.
2. Remove light oil using a solution of warm water and detergent and a brush. Rinse with clear water, let dry.
3. Remove heavy oil with a water-soluble biodegradable degreaser; brush with spray cleaners or detergent and water solution; rinse with clear water and let dry.
4. Or steam clean and let dry.
5. Do not machine wash or dry.

### **F. Repackaging**

Insert 1 blue canteen case and blue stuff sack into main compartment. Close all buckles, secure the shoulder yoke. Pack 20 packs per box.

### **G. Storage and Shelf Life Checks**

None.

**ITEM: FLIGHT SUIT**

**NFES #0501, #0507, #0508, #0509  
#0514, #0517, #0518, #0519  
#0521, #0525, #0527, #0539  
#0545, #0546, #0547, #0548  
#0567, #0572, #0574, #0576**

**A. Initial Inspection/Disposal Criteria**

1. Any holes, cuts, tears, burns, or torn seams that cannot be repaired economically.
2. Any hook and pile fastener missing or that does not provide adequate closure.
3. Any zipper broken or missing a slider.

NOTE: The cache manager shall determine when repair is economical. This decision will depend on available repair facilities.

**B. Tests**

1. Open and close the hook and pile fasteners to ensure they provide an adequate and secure closure.
2. Open and close zipper to ensure smooth operation and a secure closure.

**C. Refurbishing Procedures**

1. Repair holes, cuts, tears, burns, and torn seams by darning, patching, or by duplicating original construction (see note in section A).
2. Replace damaged hook and pile fastener tape, with tape of the same length, width, and quality as the original (see note in section A).
3. Replace damaged zippers with the same type, length, and quality as the original (see note in section A).
4. Use Nomex® (Aramid) thread and Nomex® (Aramid) materials for all repairs.

**D. Retesting Criteria**

Test all replacement hook and pile fasteners and zippers after sewing in place, as specified in section B.

**E. Cleaning Procedures**

See appendix B.

1. Follow the cleaning procedures described in the publication, Nomex®- Aramid -Laundering Guide (2197). The publication can be obtained by calling DuPont at 1-800-453-8527 or by writing:

DuPont Company  
Aramid Inquiry Center  
Chestnut Run Plaza  
Laurel Run Building  
Wilmington, DE 19880-0705

2. Washing procedures from above publication:
  - a. "Tests show that (commercial and industrial detergent) formulations designed for use at a temperature of 140 °F (60 °C) or less, adequately clean NOMEX® and provide the best fabric color retention.
  - b. "Garments of NOMEX® must be adequately rinsed to remove residual wash chemicals.
  - c. "In some instances, tumble dry conditioning is the only finishing necessary for garments of NOMEX®."
3. In addition to these guidelines:
  - a. Select temperatures to maintain color fastness, except as necessary to clean heavily soiled items.
  - b. The use of commercial cold-water process may be used in remote field locations as necessary.
  - c. Garments heavily soiled with petroleum products may require dry-cleaning with perchloroethylene.

## Storage and Refurbishing Standards

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### **F. Repackaging**

1. Close zipper and pocket flaps. With inseams meeting, fold flight suit lengthwise toward the collar.
2. Repack per local cache options. Standard pack is 20 each (same size) in carton.

### **G. Storage and Shelf Life Checks**

None at this time.

**ITEM: FLY, SUNSCREEN, 20' x 20' W/GUY ROPES**

**NFES #6131**

**A. Initial Inspection/Disposal Criteria**

1. Nonstandard item.
2. Rips and tears (uneconomical to repair).
3. Stained with petroleum products.
4. Mildew present.

**NOTE: The cache manager shall determine when repair is economical. This decision will depend on available repair facilities.**

**B. Tests.**

None

**C. Refurbishing Procedures**

1. Completely unfold fly on clean, dry floor or work area so that any defects (tears, burns, mildew, etc.) will be visible.
2. Sweep off entire fly with stiff-bristle broom.
3. Power wash if needed
4. Dry fly at this time if necessary.
5. Repair any rips, tears, or any other defects at this time (if possible). If repairs cannot be made easily and cost effectively, continue to clean fly and tag it for repair. Replace missing or damaged guy ropes with 25 foot by 1/4 inch manila rope w/ sliders.
6. Replace missing grommets with 5/8-inch brass grommets.

**D. Retest Criteria.**

None.

**E. Cleaning Procedures**

See section C.

**F. Repackaging**

1. Utilize flat, clean surface greater than 20 foot by 20 foot. Fold lengthwise once, fold lengthwise again, sweep after each fold until fly is in a neat, tight package approximately 16 inch by 24 inch.
2. Secure fly with 1/4 inch manila or similar rope. Use carton NFES #2006 (NSN 8115-00-139-0722), or band.
3. Tag finished product with proper NFES # and nomenclature.

**G. Storage and Shelf Life Checks**

None at this time.

## Storage and Refurbishing Standards

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**ITEM: FLY, TENT, TYPE II, 9' x 10'**

**NFES #1521**

### **A. Initial Inspection/Disposal Criteria**

1. Nonstandard item.
2. Rips and tears.
3. Mold or mildew.
4. Missing or loose grommets.

### **B. Tests**

None.

### **C. Refurbishing Procedures**

1. Wash with soapy water and rinse with clean water (use a mild degreasing soap) or high-pressure wash.
2. Air dry.
3. Replace missing or damaged grommets.
  - a. Ridge grommets are number 4 spur, brass.
  - b. Guy line grommets are number 2 spur, brass.
4. Repair rips and tears.

### **D. Retesting Criteria**

None

### **F. Cleaning Procedures**

1. Wash with water and mild degreaser detergent.
2. Rinse to remove all soap residue.
3. Air dry.

### **F. Repackaging**

Package 20 each in carton (cache option) and label accordingly.

### **G. Storage and Shelf Life Checks**

None at this time.

**ITEM: FLY, TENT, 16" X 24" W/GUY ROPES  
FLY, TENT, KIT, 16' X 24' W/GUY ROPES**

**NFES #0070, #0960**

**A. Initial Inspection/Disposal Criteria**

1. Nonstandard item.
2. Rips and tears (uneconomical to repair).
3. Stained with petroleum products.
4. Mildew present.

**NOTE: The cache manager shall determine when repair is economical. This decision will depend on available repair facilities.**

**B. Tests**

None.

**C. Refurbishing Procedures**

1. Completely unfold fly on clean, dry floor or work area so that any defects (tears, burns, mildew, etc.) will be visible.
2. Sweep off entire fly with stiff-bristle broom.
3. Power wash if needed.
4. Dry fly at this time if necessary.
5. Repair any rips, tears, or any other defects at this time (if possible). If repairs cannot be made easily and cost effectively, continue to clean fly and tag it for repair. Replace missing or damaged guy ropes with 25 foot by 1/4 inch manila rope with sliders.
6. Replace missing grommets with 5/8-inch brass grommets.

**D. Retest Criteria**

None.

**E. Cleaning Procedures**

See section C.

**F. Repackaging**

1. Utilize flat, clean surface greater than 20 foot by 20 foot. Fold lengthwise once, fold lengthwise again, sweep after each fold until fly is in a neat, tight package approximately 16 inch by 24 inch.
2. Secure fly with 1/4 inch manila or similar rope. Use carton NFES #2006 (NSN 8115-00-139-0722), or band.
3. Tag finished product with proper NFES # and nomenclature.

**G. Storage and Shelf Life Checks**

None at this time.

## Storage and Refurbishing Standards

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**ITEM: FOOD, MEALS, READY-TO-EAT (MRE)**

**NFES #1842**

### **A. Initial Inspection/Disposal Criteria**

1. Receipt inspection: Verify shipping container for marking of MRE meals. The container must show the following data.

NSN (Military Stock Number)

Item Nomenclature

Wt. \_\_\_\_\_ Cu \_\_\_\_\_

Contract No. \_\_\_\_\_ Lot No. \_\_\_\_\_

Name and Address of Ration Assembly Contractor

Date packed

ITD Inspection test date

Subsistence Symbol

2. Disposal of MRE Meals, (Ready-to-Eat) will be based on official food service inspection documentation, or based on MRE item manager disposal authority.

- a. MRE meals will be disposed of if the meal storage pouch is open.
- b. That meal will be removed from its container and rendered unusable and placed in a wet-garbage container.
- c. The water activated heater, for heating the MRE entree will be removed from the meal and held at the cache.
- d. The storage cache will advise the South Zone (SZ) Cache of the number of heating units held.
- e. SZ Cache will provide disposition instruction for MRE heating unit.

### **B. Tests**

None. Requires food service inspection.

### **C. Refurbishing Procedures**

See appendix C.

None. Dispose of all loose, partial, or open MRE meals, and all unmarked MRE meals, and MRE meals in unmarked shipping containers, i.e., not in original shipping containers.

### **D. Retesting Criteria**

Inspect container for proper marking, look for container damage, look for insect or rodent damage, look for product leakage and foul odor. If damage found follow section A. Mark case/pallet with next inspection test date if no damage found.

### **E. Cleaning Procedures**

Dust case, look for damage as noted in section D.

### **F. Repackaging**

Label appropriately and store accordingly.

### **G. Storage and Shelf Life Checks**

Ensure that shelf life records for MRE cache stock are maintained. The inspection date is established at time of cache receipt.

Ensure that pallets and loose cases are marked with the next inspection test date.

**ITEM: GENERATOR, GASOLINE ENGINE 3 to 6 KW**

**NFES #0709**

**A. Initial Inspection/Disposal Criteria**

1. Inspect generator for any obvious damage to body, frame, or shock absorbing system.
2. Inspect for oil leaks, dirty air filters, and condition of spark plug.

**B. Tests**

1. Check oil level, fuel level, condition of gas and oil, and condition of spark plug and air filter. Do this before starting.
2. See operator's manual for specified generator. Start generator; look for items that need repair.
  - a. Engine smoking, running rough, missing.
  - b. Not starting.
  - c. Leaking fuel lines.
3. Turn on generator.
  - a. Check voltage output using test meter.
  - b. Plug in an electric tool to check the generator under load.

**SAFETY NOTES:**

1. Ensure that generator is grounded properly to prevent electrical shock.
2. Attach noise label on generator to warn operator.
3. Do not fuel generator when hot. Watch out for hot mufflers.
4. Check operation of Ground Fault Interrupter (GFI).
5. Check to be sure there is a 12-gauge GET at generator.

**C. Refurbishing Procedures**

A generator should be able to run properly and put out the proper amount of voltage (see operator's manual). If the generator does not meet this criteria, refer to the operator's manual and troubleshooting guide, or send it out to a local repair shop to be repaired. Ensure that the shop has the operator's manual and troubleshooting guide.

**D. Retesting Criteria**

1. Start generator to make sure it is operating properly.
2. Use a test meter to check for proper voltage output.

**E. Cleaning Procedures**

Clean off dirt and oil (using degreaser if necessary). Allow generator to dry.

**F. Repackaging**

1. Drain fuel from tank and fuel lines.
2. Purge gas tank using NFES #0700 Purge.
3. Ensure that all identification is on the generator: Property No's, Serial No's, Cache Identification.
4. Tie off starter rope to handle to determine field use. Use plastic snap seal.

**G. Storage and Shelf Life Checks**

Shelf life checks should be made once or twice a year to ensure proper operating conditions. This is necessary if they are not shipped out during the year.

## Storage and Refurbishing Standards

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**ITEM: HEADLAMP, 4-CELL "AA"**

**NFES #0713**

### **A. Initial Inspection/Disposal Criteria**

1. Broken wires.
2. Rust or corrosion on any metal part.
3. Cracked case or lens cover.

### **B. Tests**

1. Test unit with new batteries.
2. Test both bulbs; if defective, replace.
3. Test elasticity of headband; if defective, replace.
4. If cracks in insulation are less than 3 inches from termination point, cut out bad section and rewire or throw away.

### **C. Refurbishing Procedures**

NFES #0713 Check battery adapter type and replace with one of the same kind (9-volt battery configuration or battery with contacts on outer part of adapter).

1. Install test batteries.
2. Test and clean entire unit, install new bulbs and headband if required.
3. Remove test batteries.
4. Validate "O" rings are present in lens and battery compartment.

### **D. Retesting Criteria**

None.

### **E. Cleaning Procedures**

Wipe entire unit clean to include lamp housing, battery cam, and both sides of lens.

### **F. Repackaging**

1. Package 48 individual headlamps in 20 inch by 20 inch by 20 inch carton (NSN 8115-00-428-4158).
2. **CAUTION—Do not repack units with batteries.**

### **G. Storage and Shelf Life Checks**

None at this time.

**ITEM: HEADLAMP, FIREFIGHTER'S (5 AA CELL)**

**NFES #0667**

**A. Initial Inspection/Disposal Criteria**

1. Lamp head.
  - a. Lamp head should have two bulbs, one in place for use, and one inside the housing as a spare.  
The computer chip inside the housing should be intact and firmly in place.
  - b. Lens/reflector should be clear, unscratched, and turn on the housing with resistance.
  - c. The housing should be free of cracks and the switch boot free of cracks or tears. The strap lugs should be intact.
  - d. The o-ring should be free of cracks and pliable.
  - e. The wire should be tight and have no cracks; the connector should be round and clean.
2. Battery pack.
  - a. Housing should free of cracks, both cap lugs and strap lugs should be present and intact.
  - b. The cap should be free of cracks, the wire tight and without defect, and the o-ring intact. The cap should fit snugly on the battery housing and lock in place. The connector plate inside the cap should be centered and free of corrosion.
  - c. The battery frame should be intact and firmly hold 5 AA batteries. The electrical connectors should mate with the connectors in the cap.
3. Helmet strap.

The helmet strap should be without tears, pliable, and hold the headlamp components.

**NOTE: The cache manager shall determine when repair is economical. This decision will depend on the available repair facilities.**

**B. Tests**

1. Insert 5 new AA batteries into the battery frame all pointing towards the top. Insert battery frame into the battery housing. Tighten the cap, attach the lamp head, the light should go on. Press and release the lamp button, the light should either brighten or dim. Press and hold the lamp button, the light should go off.
2. Remove batteries.

**C. Refurbishing Procedures**

Replace components until the lamp works properly.

**D. Retesting Criteria**

Retest as specified in section B.

**E. Cleaning Procedures**

Clean headlamp with clean water.

**F. Repackaging**

Store 48 headlamps per carton.

**G. Storage and Shelf Life Checks**

Headlamps should be stored without batteries.

Replacement parts can be obtained from:  
Easter Seals Greater Hartford Rehabilitation Center, Inc.  
100 Deerfield Road  
Windsor, CT 06095  
Phone: 860-714-9500

## Storage and Refurbishing Standards

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**ITEM: HEATER, PROPANE, 20# TANK MOUNTED  
HEATER, PROPANE, OUTDOOR, 360° RADIANT HEAT**

**NFES #6139  
NFES #6187**

### **A. Initial Inspection/Disposal Criteria**

1. Visual inspection indicating use or missing parts (guards, knobs, etc.).
2. Structural damage preventing repair—dispose (salvage usable parts).
3. Torn or cut heater element.
4. Damaged hose connections.
5. Damaged built in regulators.

### **B. Tests**

1. Check to see if cost effective to repair.
2. Check hoses for cracks, checking for breaks by flexing.
3. Check “O” rings on supply hose and replace if needed.
4. Check for out-of-round fittings by screwing regulator into tank POL fitting.
5. Mount or install heater unit.

**CAUTION: Do not check by using a match or any other type of flame.**

7. When assured that there are no leaks, light heater. If heater does not ignite within 5 seconds, extinguish flame and shut off gas valve.
8. Once lit, let run for 5 minutes, cycle on/off cycle 2 to 3 times.
9. If heater fails, repair and retest.
10. Check auto shut off valve is in working condition by tipping unit over.

### **C. Refurbishing Procedures**

1. Replace regulator if there is any damage to the regulator or threads do not properly seat.
2. Replace or straighten any damaged or bent parts.
3. Check hose or valve for foreign material that might cause a blocked line.
4. Repair or replace auto shut off valve if not working properly.
5. Replace “O” ring on feeder hose if necessary.
6. Wipe unit clean.

### **D. Retesting Criteria**

Follow procedures in section B.

### **E. Cleaning Procedures**

Wipe entire unit clean.

### **F. Repackaging**

Repack in original carton if possible or pack to local cache requirements.

### **G. Storage and Shelf Life Checks**

None at this time.

**ITEM: TANK, HELIWELL 15,000 GALLON**

**NFES #0669**

**A. Initial Inspection/Disposal Criteria**

1. Observe condition prior to take down or after setting unit up following manufacturer's assembly procedures.
2. Look at rim covers and inspect attached webbing.
3. Remove rim covers and inspect top of tank for abrasions or tears.
4. Look in tank for slices or holes and mark with felt pen if repairs needed.
5. Inspect panels to ensure they are not bent or misshapen and attached clips are functional.
6. Inspect turn buckles and cables for frays and buffs.

**B. Tests**

Verify panels close together by inspecting placement.

**C. Refurbish Procedures**

1. Clean interior by running hose through a 3-inch drain hole and washing with water.
2. Patch all holes.
3. Rivet rim covers if missing.
4. Straighten panels and replace clips if needed.
5. File off buffs on turn buckles.

**D. Retesting Criteria**

None.

**E. Cleaning Procedures**

Clean tank liner and panels using warm soapy water. Steamcleaning, plus brushes efficiently expedites this process.

**F. Repackaging**

1. Fold tank in a shape that fits under one panel. Place folded tank on provided pallet and stack panels atop tank.
2. Box other components, place on pallet, and strap down securely.

**G. Storage and shelf life checks.**

None.

## Storage and Refurbishing Standards

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**ITEM: HELMET, FLIGHT, SPH-4C, SPH-5TPL  
HELMET, FLIGHT, SPH-5C**

**NFES #1314, #1315, #1214, #1215  
NFES #2313, #2314, #2315**

### **A. Initial Inspection/Disposal Criteria**

1. Visual inspection indicating use or missing parts (screws, visors, worn cords, etc.).
2. Structural damage (cracked shell, visor housing, booms, etc.).
3. Structural damage preventing repair and refurbishment (cracked helmet shell, salvage useable part and dispose of helmet shell).
4. Flight helmets must meet requirements in Instruction Memo No. 96-2006 (In reply refer to: 9400 (FA-100)).
5. See appendix D.

### **B. Tests**

1. All testing and refurbishment will be conducted by qualified personnel.
2. Concerns and questions about flight helmet testing and refurbishment procedures may be directed to:

National Interagency Fire Center  
Ramp Services  
3833 S. Development Avenue  
Boise, ID 83705  
Phone: 208-387-5529  
Fax: 208-387-5785

### **C. Refurbishing Procedures**

1. Test avionics.
  - a. earphones.
  - b. microphone.
  - c. cord assembly.
  - d. microphone cable assembly.
2. Clean flight helmet thoroughly.
3. Replace missing or damaged parts.
4. Replace thermoplastic liner (TPL) in SPH-5 TPL only.
  - a. Size Regular NFES #3063.
  - b. Size XL- NFES #3064.
  - c. Size Small NFES #3065.

Contact address above for further information.

### **D. Retesting Criteria**

Retest avionics if necessary.

### **E. Cleaning Procedures**

Use general purpose cleaner. (Do not use bleach, paint remover, thinner, or acetone on flight helmet shell. It may cause damage).

### **F. Repackaging**

Package 1 each in 12 inch by 12 inch by 12 inch carton (NSN 8115-00-079-8680).

### **G. Storage and Shelf Life Checks**

None at this time.

**ITEM: HELMET, SAFETY, PLASTIC**

**NFES #0109**

**A. Initial Inspection/Disposal Criteria**

1. Cracks/chips in shell.
2. All attachment clips present (chin strap, headlamp, liner, neck and face shroud).
3. Nonremovable markings.
4. All certification labels must be present in helmet. (ANSI, etc)

**B. Tests**

See appendix E.

**C. Refurbishing Procedures**

1. Wash with soap and water and air dry.
2. Replace with new liner and new chin strap, if needed.  
Bullard helmet use liner NFES #2025  
Mine Safety Appliances (MSA) helmets use liner NFES #1840
3. Attach front 2 suspension clips to helmet to ensure proper fit.
4. Add or replace reflective strips.
5. Add or replace Velcro strips
  - a. Velcro strips 1 1/2 inch by 2 1/4 inch and placed at center at rear of helmet and 9 1/2 inch around curvature of helmet on each side.
  - b. The adhesive used shall be approved by the manufacturer for use on the helmet

Velcro available from:

Textrol Systems Inc.  
435 Meadow Lane  
Carlstadt, NJ 07072  
Part #193973 (Part B-male)  
Phone: 800-624-8746

**D. Retesting Criteria**

None.

**E. Cleaning Procedures**

Wash entire shell with soap and water, or high-pressure wash.

**F. Repackaging**

1. Pack in carton NFES #2007 (NSN 8115-00-292-0123).
2. Place 20 helmets per carton and label accordingly.

**G. Storage and Shelf Life Checks**

None at this time.

## Storage and Refurbishing Standards

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**ITEM: HOOK, CARGO, ELECTRIC W/BRUSH GUARD**

**NFES #0243**

### **A. Initial Inspection/Disposal Criteria**

1. Check for structural damage.
2. Ensure safety latch is not bent.

### **B. Tests**

No local testing is recommended.

### **C. Refurbishing Procedures**

Repair of corrosion of the cargo hook must be authorized by an approved government maintenance inspector, FAA certified Airframe Mechanic, or FAA Repair Station.

### **D. Retesting Criteria**

1. The hook assembly shall be functionally tested each 5 years.
2. The hook can be functionally tested by:

Aero Accessory Service  
612 S. Scott  
Boise, ID 83705  
Phone: 208-344-6461

Field Support Services  
2001 Flightway Drive  
Atlanta, Georgia 30341  
Phone: 770-454-1130

Boise Rigging Supply  
106 West 32nd St.  
Garden City, ID 83714  
Phone: 208-342-8919; 800-342-7673  
Fax: 208-342-8919

### **E. Cleaning Procedures**

The hook assembly may be cleaned with hot water. A light water-displacement oil (such as WD 40) may be used to displace water on the hook assembly. Any use of degreasing products during cleaning of the hook assembly will require the hook to be lubricated in accordance with the hook manufacturer's recommendations.

### **F. Repackaging**

Local cache option.

### **G. Storage and Shelf Life Checks**

None at this time.

For further information on this subject, see copy of Office of Aircraft Services Memorandum, dated December 14, 1989 (or later revision) on this subject.

**ITEM: HOSE ROLLER, ELECTRIC OR GAS (ELECTRIC ONLY)**

**NFES #0633**

**A. Initial Inspection/Disposal Criteria**

Check local Job Hazard Analysis for proper personnel protective equipment required when checking this item.

1. Check for missing parts, foot pedal switch, cracks in frame structure power cord and motor.
2. Verify protective guards are on any and all moving parts. (i.e., pulleys, etc.).

**NOTE: The cache manager shall determine when repair is economical. This decision will depend on available repair facilities.**

**B. Tests**

Plug in and test motor and moving parts.

**C. Refurbishing Procedures**

1. Blow dust and dirt out of electric motor.
2. If needed wash with high-pressure washer (cover electric motor).
3. Let dry.
4. Repair cracks in frame as needed.
5. Tie-wrap power cord and control switch (foot pedal) to frame.

**D. Retesting Criteria**

Plug and test motor and moving parts.

**E. Cleaning Procedures**

Covered in section C.

**F. Repackaging**

None.

**G. Storage and Shelf Life Checks**

None at this time.

## Storage and Refurbishing Standards

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### ITEM: HOSE ROLLER, ELECTRIC OR GAS (GAS ONLY)

NFES #0633

#### A. Initial Inspection/Disposal Criteria

Check local Job Hazard Analysis for proper personnel protective equipment required when checking this item.

1. Pressure wash hose roller.
2. Inspect hose roller for any obvious damage to body or frame.
3. Inspect motor for:
  - a. Oil leaks.
  - b. Dirty air filters.
  - c. Condition of spark plug.
4. Check all belts.
5. Inspect all cables and accessories.
6. Verify protective guards are on any and all moving parts (i.e., pulleys, etc.).

NOTE: The cache manager shall determine when repair is economical. This decision will depend on available repair facilities.

#### B. Tests

1. Try to start engine and check for:
  - a. Hard starting.
  - b. Smoking engine.
  - c. Running rough.
  - d. Missing.
  - e. Adjust carburetor as needed to run smoothly. (Refer to the engine owner's manual and troubleshooting guide for specifications.)
2. Worn or loose belts.
3. Leaking fuel lines.
4. Worn pulleys.

#### C. Refurbishing Procedures

1. Engine should be properly adjusted to obtain the standard idle speed. (Refer to engine owner's manual and troubleshooting guide for proper adjustments.)
2. Replace any worn belts, worn pulleys, and fuel line if it leaks.
3. Tighten all loose belts.
4. Adjust carburetor as needed. (Refer to engine owner's manual and troubleshooting guide for specifications).
5. Drain fuel from tank and fuel line. Start engine to ensure that all gas has been run out of unit.
6. Use clean rag to rid fuel tank of any excess fuel and then purge fuel tank.
7. Ensure that all identification labels are on unit (i.e., property numbers and serial numbers on engines). If lost, reapply to unit.
8. Use plastic TY-RJP to tie off starter rope (gas units) to determine field use.
9. Lubricate wheels on hose roller.

#### D. Retesting Criteria

If unit has not been run in past 12 months, start hose roller and complete section C.

#### E. Cleaning Procedures

Clean dirt and oil off unit using a degreaser if necessary.

**F. Repackaging**

Place back in stock area. Tag with dated last tested.

**G. Storage and Shelf Life Checks**

See section D.

Refer to specific engine owner's manual and troubleshooting guide for all needed specifications on gas engine.

## Storage and Refurbishing Standards

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**ITEM: HOSE, GARDEN, SYNTHETIC, 3/4" NH x 50'**

**NFES #1016**

### **A. Initial Inspection/Disposal Criteria**

1. Visually inspect for burns, cuts, damaged fittings, and gasket.
2. Recycle brass fittings from discarded hose.

### **B. Tests**

1. Start pump.
2. Test hose at 150 psi.
3. Check hose for leaks.
4. Shut down pump.
5. Drain excess water from hose.

### **C. Refurbishing Procedures**

Replace gasket if necessary.

### **D. Retesting Criteria**

None required.

### **E. Cleaning Procedures**

1. Remove excess dirt from hose.
2. Wash hose with clean water or clean water with mild detergent or high pressure wash.
3. If detergent is used, rinse with clean water.
4. Allow hose to dry thoroughly.

### **F. Repackaging**

1. Roll hose in single-roll configuration, male fitting in center of roll.
2. Secure roll with band, string, etc.
3. Package 20 lengths in a carton 16 inch by 12 inch by 10 inch and label accordingly.

### **G. Storage and Shelf Life Checks**

None at this time.

**ITEM: HOSE, LINED**

NFES # 0966, #0967  
#1238, #1239

**A. Initial Inspection/Disposal Criteria**

1. Segregate by NFES number.
2. Check for obvious burns, cuts, damaged couplings, worn or defective gaskets.

**B. Tests**

1. Replace gasket if necessary.
2. Connect female end of hose to pump or manifold (confirm not out of round and no damaged threads). All 1 1/2-inch hose should be NH threads. All 1-inch hose should be NPSH threads
3. See current edition of Water Handling Guide for hose testing procedures.
4. When hose is under pressure, walk the length of hose checking for the following which will indicate a need for repair or disposal: leaks between hose and couplings, and at swivel portion of female coupling.
5. Pressure Test
  - a. Start pump.
  - b. Make sure nozzles are open. Let all air escape from hose. Shut nozzles.
  - c. Time for 3 minutes after reaching 250 psi.
  - d. Walk the length of the hose looking for burns or cuts.
  - e. Test for 3 minutes, turn off pump water.
  - f. Female and male couplings.
    - (1) Check for leaks where hose goes into coupling.
    - (2) Check for crooked coupling (easier to see when hose is charged).
  - g. Remove hose.
  - h. Stretch out good hose to drain.

**C. Refurbishing Procedures**

1. Refurbished hose shall result in lengths that are a minimum of 90 percent of original length.
2. Good couplings shall be salvaged from discarded hose.
3. Recoupling procedures.
  - a. Remove old expansion ring and coupling from hose.
  - b. Remove unserviceable portion of hose, squaring end to be recoupled.
  - c. Utilize expander machine to insert new expander and coupling. Follow specific machine operating instructions.
4. Refurbished hose shall result in hoses that are 90 to 100 foot in length.

**D. Retesting Criteria**

1. None required unless recoupling has occurred.
2. Following recoupling, follow test procedures as outlined in section B.5.

**E. Cleaning procedures**

1. Clean excess dirt from hose.
2. Run hose through hose washer using other clean water or clean water with a mild detergent.
3. If detergent is used, rinse with clean water.
4. Allow jacket to dry thoroughly.

**F. Repackaging**

1. Roll in a single roll configuration-male coupling in center of roll.
2. Secure roll (rubber or plastic band, string)
3. Local cache option for storage.
  - a. Roll, secure, and place on pallet. Cache option quantity per pallet 1 inch by 100 foot length/pallet.

## Storage and Refurbishing Standards

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- b. Roll, secure, and place on pallet. Cache option quantity per pallet 1 1/2 inch by 100 foot length/pallet.
- c. Roll, secure, and package 2 lengths in carton (to be determined). Cache option quantity per pallet.

### **G. Storage and Shelf Life Checks**

None at this time.

**ITEM: HOSE, LINEN AND SYNTHETIC WEEPING**

NFES #1873, #0334

**A. Initial Inspection/Disposal Criteria**

1. Segregate by NFES number.
2. Check for obvious burns, cuts, damaged couplings, worn or defective gaskets.

**B. Tests**

1. Replace gasket if necessary.
2. Connect female end of hose to pump or manifold (confirm not out of round and no damaged threads). All 1 1/2 inch hose should be NH threads. All 1 inch hose should be NPSH threads.
3. See current edition of the Water Handling Guide for hose testing procedures.
4. For linen hose, begin pressure test with a 5-minute wet soak at 50 psi prior to applying full test pressure.
5. When hose is under pressure, walk the length of hose checking for the following which will indicate a need for repair or disposal: leaks between hose and couplings and at swivel portion of female coupling.
6. Pressure test.
  - a. Start pump.
  - b. Time for 3 minutes after reaching 250 psi.
  - c. Walk the length of the hose two or three times looking for burns or cuts.
  - d. After 3 minutes turn off pump water.
  - e. Female and male couplings.
    - (1) Check for leaks where hose goes into coupling.
    - (2) Check for crooked coupling (easier to see when hose is charged).
  - f. Remove hose.
  - g. Stretch out good hose to drain.

**NOTE: Items 6.c and 6.e require special attention with synthetic hose.**

**C. Refurbishing Procedures**

1. Refurbished hose shall result in lengths that are a minimum of 90 percent of original length.
2. Good couplings shall be salvaged from discarded hose.
3. Recoupling procedures:
  - a. Remove old expansion ring and coupling from hose.
  - b. Remove unserviceable portion of hose, squaring end to be recoupled.
  - c. Utilize expander machine to insert new expander and coupling. Follow specific machine operation instructions.

**D. Retesting Criteria**

1. None required unless recoupling has occurred.
2. Following recoupling, follow test procedures as outlined in section B.6.

**E. Cleaning procedures**

1. Clean excess dirt from hose.
2. Run hose through hose washer using other clean water or clean water with a mild detergent.
3. If detergent is used, rinse with clean water.
4. Dry linen hose immediately after testing and washing to avoid mildew. Allow synthetic hose to dry thoroughly before rolling.
  - a. A 100-foot hose is hung from the middle and left to drain for 4 hours.
  - b. After 4 hours, double hose again, with couplings off the ground.

## Storage and Refurbishing Standards

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### **F. Repackaging**

1. Roll in a single roll configuration-male coupling in center of roll.
2. Secure roll (rubber or plastic band, string).
3. Local cache option for storage.

### **G. Storage and Shelf Life Checks**

Linen hose should be checked periodically for mildew or rot, and should be retested after 3 years on the shelf, regardless of appearance.

**ITEM: HOSE, SUCTION**

NFES #0115, #0652  
#0914, #1808

**A. Initial Inspection/Disposal Criteria**

Visually inspect for cracks, cuts, damaged couplings, and gasket.

**B. Tests**

1. Service pressure test.
  - a. Start pump.
  - b. Test for 3 minutes at 50 psi.
  - c. Check hose for leaks.
  - d. Shut down pump.
  - e. Drain hose completely.
2. Dry vacuum test.

See current edition of the Wildland Fire Hose Guide for complete annual testing procedures.

**C. Refurbishing Procedures**

Replace gasket if necessary.

**D. Retesting Criteria**

None required.

**E. Cleaning Procedures**

1. Remove excess dirt from hose.
2. Clean with damp rag.
3. Apply a rubber protectant to prevent drying and cracking.

**F. Repackaging**

1. No special repack requirements.
2. Protect male coupling threads.

**G. Storage and Shelf Life Checks**

None at this time.

## Storage and Refurbishing Standards

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### ITEM: INCREASERS

NFES #0416, #0854, #2235

#### A. Initial Inspection/Disposal Criteria

1. Check for obvious damage.
2. Cracks.
3. Bad threads.
4. Tail gaskets.

#### B. Tests

None.

#### C. Refurbishing Procedures

1. Replace tail gasket if stiff, missing, or cracked.
2. Check threads for damage. Use triangular file to “chase” threads.

#### D. Retesting Criteria

Recheck threads by using appropriate female fitting.

#### E. Cleaning Procedures

1. Clean in parts washer, high pressure wash or clean in sink with dishwashing detergent with a brush or scouring pad.
2. Rinse thoroughly.
3. Stand upright to drain and dry.

#### F. Repackaging

1. NFES #0416 package 10 each in carton (cache option) or 60 each in carton (cache option) and label accordingly.
2. NFES #0854 package 10 each in carton (cache option) or 60 each in carton (cache option) and label accordingly.
3. NFES #2235 package 10 each in carton (cache option) or 60 each in carton (cache option) and label accordingly.

#### G. Storage and Shelf Life Checks

None at this time.

ITEM: JEAN, BDU

NFES #2700 - #2707, #2800 - #2807

**A. Initial Inspection/Disposal Criteria**

1. Any holes, cuts, tears, burns, or torn seams.
2. Any alterations cutting of the pants cuff off that cannot be repaired to a minimum of 30-inch inseam.
3. Buttonhole has frayed or broken stitching.
4. Any hook and pile fastener missing or that does not provide adequate closure.
5. Zipper broken or missing teeth.
6. Any belt loop missing or broken.
7. Any side take-up tape or buckle missing, damaged, or with loose thread (see section C note).

**NOTE: Lost or damaged cuff closure cord should not be disposal criteria. It is not recommended to replace any lost or damaged cuff closure cords.**

**NOTE: The cache manager shall determine when repair is economical. This decision will depend on the available repair facilities.**

**B. Tests**

1. Open and close the hook and pile fasteners to ensure that they provide an adequate and secure closure.
2. Open and close zipper to ensure smooth operation and a secure closure.

**C. Refurbishing Procedures**

1. Repair holes, cuts, tears, burns, and torn seams by darning, patching, or by duplicating the original construction (see note in section A).
  - a. Use Nomex® (Aramid) patching material for all repairs.
2. Restitch frayed buttonholes using a buttonhole or zig-zag stitch that has 50 to 60 stitches per buttonhole.
3. Replace damaged hook and pile fastener tape with tape of the same length, width, and quality as the original (see note in section A).
4. Replace damaged zipper with the same type, length, and quality as the original.
5. Replace damaged belt loops with loops of the same material and construction as the original (see note in Section A).
6. Replace side take-up tape using Nomex® (Aramid) tape with a metal tri-glide. The replacement tape should be 3/4 inch wide Aramid tape, style #70-6185-2007-3/4 inch, color black. Order from:

C. M. Offray & Son, Inc.  
Rt. 24, Box 601  
Chester, NJ 07930  
Phone: 908-879-4700

**NOTE: The first lot of pants manufactured in 2000 have thin light green side take-up tapes, later contracts have heavier black side take up-tapes. It is recommended that the loose end of the light green take-up tapes be replaced by the recommended Nomex® tape (#6 above). It is not necessary to replace the tape that is holding the metal tri-glide.**

**D. Retesting Criteria**

Test all replacement hook and pile fasteners and zippers after sewing in place, as specified in section B.

## Storage and Refurbishing Standards

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### **E. Cleaning Procedures**

See appendix B for Nomex® laundering instructions.

**DO NOT USE BLEACH TO CLEAN FABRIC.**

### **F. Repackaging**

1. Close fly and all pocket flaps, properly thread side take-up tape, untie cuff cord. With inseams meeting, fold pants from the leg bottom up toward the waist band to an overall length of about 23 inches.
2. Pack 30 pairs of the same size pants in carton NFES #2007.

### **G. Storage and Shelf Life Checks**

None at this time.

**ITEM: JEANS, FLAME RESISTANT  
MENS AND WOMENS**

**NFES #0503 to #0506  
#0581 to #0585  
#2010 to #2024  
#2117**

**A. Initial Inspection/Disposal Criteria**

1. Any holes, cuts, tears, burns, or torn seams that cannot be repaired economically.
2. Any alterations or cutting of the jeans cuff off that cannot be repaired to a minimum 30-inch inseam.
3. Any buttonholes with frayed or broken stitching.
4. Any missing or tack buttons.
5. Any hook and pile fastener missing or that does not provide adequate closure.
6. Any zipper broken or missing a slider.
7. Any belt loops missing or broken.

**NOTE: The cache manager shall determine when repair is economical. This decision will depend on available repair facilities.**

**B. Tests**

1. Open and close the hook and pile fasteners to ensure that they provide an adequate and secure closure.
2. Open and close zipper to ensure smooth operation and a secure closure.

**C. Refurbishing Procedures**

1. Repair holes, cuts, tears, burns, and torn seams by darning, patching, or by duplicating original construction (see note in section A).
2. Restitch frayed buttonholes using a buttonhole or zig zag stitch that has 50 to 60 stitches per buttonhole.
3. Replace damaged hook and pile fastener tape with tape of the same length, width, and quality as the original (see note in section A).
4. Replace damaged zippers with the same type, length, and quality as the original (see note in section A).
5. Replace damaged belt loops with loops of the same material and construction as the original (see note in section (A)).
6. Use Nomex® (Aramid) thread and materials for all repairs.

**D. Retesting Criteria**

Test all replacement hook and pile fasteners and zippers after sewing in place, as specified in section B.

**E. Cleaning Procedures**

See appendix B for NOMEX® laundering instructions.

**DO NOT USE BLEACH TO CLEAN FABRIC.**

**F. Repackaging**

1. Close fly and pocket flaps. With inseams meeting, fold jeans from the leg bottom up toward the waistband to an overall length of about 23 inches.
2. Pack 30 pairs of the same size jeans in carton NFES #2030 (NSN 8115-00-183-9481).

**G. Storage and Shelf Life Checks**

None at this time.

## Storage and Refurbishing Standards

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**ITEM: JUG, INSULATED 5 GALLON  
JUG, VACUUM 10 GALLON**

**NFES #0827, #0943**

### **A. Initial Inspection/Disposal Criteria**

1. Check for damage.
2. Dents interior and exterior.
3. Check interior for warping.
4. Holes.
5. Spigots.
6. Lids.

### **B. Tests**

1. Fill with water, check for leaks.
2. Check lid for secure fit.
3. Check spigot and seals properly, no leaks.
4. Check spigot gasket.

### **C. Refurbishing Procedures**

1. Replace spigot and spigot gaskets if necessary.
2. Vacuum jugs may need gasket replaced on lid.

### **D. Retesting Criteria**

If spigots or gaskets were replaced, retest according to section B.

### **E. Cleaning Procedures**

1. Clean outside with a mild to strong detergent solution and rinse.
2. Clean vent hole and sterilize lid.
3. Sterilize inside of jug with a solution of unscented chlorine bleach (i.e., Purex®) and water using either of these options:
  - a. Mix 1 cup unscented chlorine bleach (i.e., Purex®) to 50 gallons of water, let solution stand in container for minimum of 4 hours, drain, and air dry with lid off.
  - b. Mix 1 cup unscented chlorine bleach (i.e., Purex®) to 5 gallons of water, rinse inside of container with solution, drain, and air dry with lid off.
  - c. An antibacterial solution per manufacturer's specifications.

### **F. Repackaging**

1. Suggested repack carton is NFES #0943, 20 inch by 16 inch by 16 inch (NSN 8115-00-275-5777).
2. Or, band top on jug and place in storage in clean area without carton.

### **G. Storage and Shelf Life Checks**

None at this time.

**ITEM: KIT, COFFEE HEATING**

**NFES #0480**

**A. Initial Inspection Disposal Criteria**

1. Visually inspect kit components.
2. Dispose of bad hose lines, badly bent stove, urn, lid, and broken faucets.

**B. Tests**

1. Connect stove and all fittings to propane source.
2. Turn on tank with valve in "OFF" position at burner.
3. Check connections for leaks.
4. Light burner and make sure it is operable.
5. Check and test propane regulator.
6. Confirm test date on propane tank. (Must be recertified, [hydrostatic testing] 12 years from manufacture date and every 5 years after the first recertification).
7. Check handle to ensure that tank meets current 04/01/2002 standards for proper valve.  
See appendix L about propane tanks

**C. Refurbishing Procedures**

1. Clean heater components.
2. Clean with soap and water and disinfect urn, lid, and faucets.
3. Repaint if necessary with high-temperature paint.

**D. Retesting Criteria**

Concerns and questions about propane fittings, regulators, and propane tanks should be directed to an authorized service representative.

**E. Cleaning Procedures**

1. Use soap, water, and disinfectant to clean coffee urn, lid, and faucets.
2. Clean heater components.

**F. Repackaging**

Recommended carton is NFES #0500.

**G. Storage and Shelf Life**

None at this time.

### ITEM: KIT, FOAM PROPORTIONER (FLOW-MIX MODEL 500)

NFES #0626

#### A. Initial Inspection/Disposal Criteria

1. Remove proportioner from kit box, clean by rinsing off with water.
2. Check all lines, fittings, and alien bolts for wear and tightness.

#### B. Tests

1. Fill unit with a small amount of foam (1/2 gallon).
  - a. Set selector valve to “REFILL” (D, F-i).
  - b. Connect foam wand to pump opening (E, F-i).
  - c. Put wand into foam bucket and pump. As foam is pumped into the unit, water should come out at the water discharge tube (I, F-i).
  - d. Set selector valve to “FOAM” (D, F-i).
  - e. Set metering valve to 1.0 percent (C, F-i).
  - f. Connect fire hoses (use a foam nozzle).
  - g. Open hydrant valve to fire hose, turn on foam nozzle.
2. Foam concentrate should be seen flowing through the clear plastic tube (G, F-I) into the differential valve. It should only take a few seconds for the concentrate to enter the hose line and come out the nozzle as white foam. (Use as short a piece of hose as possible from proportioner unit to nozzle).
3. If foam is not being produced, see Troubleshooting Section of the Model 500 Operation Manual enclosed in the kit. (The selector, metering and differential valves may have to be serviced.)
4. Test the short 1 1/2 inch piece of standard fire hose that is in the kit to fire hose testing specifications. If bad, replace the hose.

#### C. Refurbishing Procedures

1. Flush the unit.
  - a. Disconnect lines (F and G, F-i) on the differential valve.
  - b. Set selector valve to “FOAM” (D, F-i).
  - c. Set metering valve (C, F-I) to 1.0 percent.
  - d. Place an air line in line F to blow foam concentrate from the bladder. Do not use a very high air pressure, only enough to do the job. Collect the foam from line G. (Continue until foam stops coming out of line G.)
  - e. Open drain cock (H, F-I). Continue blowing air until air is coming out of drain cock: tilt unit for complete draining.
  - f. Disconnect foam hose from refill pump at (A, F-I).
  - g. Disconnect foam hose from bladder fitting on tank (B, F-i).
  - h. Hold water hose to open end of foam line (B, F-i) and turn on water to flush—about 2 minutes.
  - i. Turn selector valve (D, F-i) to refill and continue to flush—about 2 minutes.
  - j. Hold water hose to pump opening (E, F-I) and flush pump.
  - k. Blow with low pressure air into line B. Move selector valve setting from “FOAM” to “REFILL” and back about 1 minute of air at each setting. Blow air into the foam fill pump opening (E, F-I) and into the end of line F with the selector valve set for FOAM. Air will come out at drain cock. This will help dry lines, pump, and valves.
2. Reassemble hoses.
3. Return metering and selector valves to “ON” and “OFF” positions, and close drain cock.
4. Let dry.

#### D. Retesting Criteria

Retest (same as B above) if a new bladder was installed, or the valves needed to be serviced, otherwise no retest is needed.

#### E. Cleaning Procedures

1. Remove all equipment from kit box and clean each item and box.
2. Check equipment against inventory list and replace missing items.

**F. Repackaging**

Replace all equipment in kit box.

**G. Storage and Shelf Life Checks**

None at this time.

### ITEM: KIT, LONGLINE WITH REMOTE HOOK

NFES #1309

#### A. Initial Inspection Disposal Criteria

1. Inspect for structural damage:
  - a. Broken wires (electrical cord).
  - b. Severe kinks in wire rope (bad line cable).
  - c. Ballooning of cable wires (bad line cable).
  - d. Collapsed hooks and rings (bad line cable ends and hook assembly).
  - e. Distorted hook, rings, and wire rope eyes.
  - f. Missing or broken nylon tie raps.
  - g. Bent, squashed, or distorted electrical connections.
  - h. Cuts, tears, or frayed electrical wires.
2. Inspect longline wire rope
  - a. Wearing gloves, run a dry rag over the entire length of the wire rope.
  - b. Snags indicate broken wires—replace wire rope if broken cable wires are discovered.
3. Repair of corrosion of the wire rope, ring, or cargo hook must be authorized by an approved government maintenance inspector, FAA certified Airframe Mechanic, or FAA Repair Station.

#### B. Tests

The wire rope can be proof tested by a certified wire rope rigging company, such as:

Boise Rigging Supply  
106 West 32nd St.  
Garden City, ID 83714  
Phone: 208-342-8919; 800-342-7673  
FAX: 208-342-8919

The wire rope and hook assembly can be functionally tested by:

Aero Accessory Service 612 S. Scott Boise, ID 83705 Phone 208-344-6461	Field Support Services 2001 Flightway Drive Atlanta, GA 30341 Phone: 770-454-1130
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#### C. Refurbishing Procedures

1. Replace missing or broken nylon tie raps.
2. Other repairs should be completed by qualified testing personnel, see Section B.
3. Replace unserviceable sections if possible to maintain a serviceable unit.
4. Damaged sections of the wire rope may be repaired provided the repaired section does not reduce the length of the section by more than 10 percent. The minimum length of a 50-foot section shall be at least 45 feet.

#### D. Retesting Criteria

1. Repaired sections shall be tested at twice the rated working load prior to being returned to the available stores system.
2. The wire rope and hook assembly shall be proof and functionally tested each 5 years. Completed in section B.

#### E. Cleaning Procedures

The cable and hook assembly may be cleaned with hot water. A light water-displacement oil (such as WD 40) maybe used to displace water on the hook assembly. Any use of degreasing products during cleaning of the hook assembly will require the hook to be lubricated in accordance with the hook manufacturers recommendations.

**F. Repackaging**

Local cache option.

**G. Storage and Shelf Life Checks**

None.

For further information on this subject, see copy of Office of Aircraft Services Memorandum, dated December 14, 1989 (or later revision) on this subject.

## Storage and Refurbishing Standards

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ITEM: KIT, SHELTER, 15' X 27'  
KIT, SHELTER, 16' OCTAGON  
KIT, SHELTER, 18' OCTAGON  
KIT, SHELTER, 20' OCTAGON

NFES #0430,  
NFES #0550  
NFES #0540  
NFES #0549

### A. Initial Inspection/Disposal Criteria

1. Check packing list and instructions. Assemble the mainframe and components according to instructions. All locking pins and flex joints should move easily. Check for burrs on all components of mainframe, even bars, and base bars.
2. Loosen flex joints and remove burrs as needed.
3. Install door; should open and close easily.
4. Install shelves and desk, making sure the proper clamps are used.
5. Repair or replace any part of the main frame as needed. When dismantling, wipe all component parts with a damp cloth and return to proper container.
6. Check roof and wall panels for any tears or rips and repair as needed. Repair according to instructions. Clean the roof and wall panels with a mild soap and water solution using a brush to remove hard dirt and grime. Check windows and screens in wall panels. Ensure that the Velcro is dry on all panels before folding and replacing in proper container.
7. Stencil all parts that need to be identified for tracking/demobilization process.

### B. Tests

None.

### C. Refurbishing Procedures

1. Repair or replace any part of the main frame as needed.
2. Check roof and wall panels for any holes, tears or rips, repair as needed.
3. Ensure that all locking buttons snap into place.  
Major repairs and replacement parts may be obtained by contacting:

#### Western Shelter Systems

830 Wilson Street  
Eugene, OR 97402  
Phone: 541-344-7267

### D. Retesting Criteria

None.

### E. Cleaning Procedures

1. When dismantling, wipe all component parts with a damp cloth.
2. Clean the roof and wall panels with a mild soap and water solution; use a brush to remove hard dirt and grime or high pressure wash.
3. Ensure that the Velcro is dry on all panels before folding and replacing in proper container.

### F. Repackaging

1. Repack according to manufacturer's instructions and local cache standards.
2. Ensure that installation/assembly instructions are included in package.

### G. Storage and Shelf Life Checks

None at this time.

**ITEM: KIT, FIRST AID, 10-PERSON, BELT**  
**KIT, FIRST AID, 10-PERSON, BOX**  
**KIT, FIRST AID, 24-PERSON, BOX**

**NFES #1143**  
**#0068**  
**#1604**

**A. Initial Inspection/Disposal Criteria**

1. Case is checked for excessive wear and cleanliness. Check belt and buckles for serviceability.
2. Open case and check contents. Standard updated packing slip should be utilized while inventorying contents.
3. Empty contents and check expiration dates.
4. Check any items that require sanitary package for tears or other damage.

**B. Tests**

None required.

**C. Refurbishing Procedures**

Clean, repair, or replace container as needed.

**D. Retesting Criteria**

None required.

**E. Cleaning Procedures**

Clean as necessary.

**F. Repackaging**

1. Utilizing packing slip, replace items in elastic retainers inside container.
2. Hook belt buckles together and fold against back of container on belt kit.
4. Enclose in a clear plastic bag with kit label and expiration dates visible and then heat seal bag.
5. Package 10 each NFES #1143 in carton NFES #2007 and label accordingly.

**G. Storage and Shelf Life Checks**

Check expiration dates of contents annually.

## Storage and Refurbishing Standards

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**ITEM: LADDER, STEP 8' FIBERGLASS**

**NFES #0586**

### **A. Initial Inspection/Disposal Criteria**

1. Check for damage, nicks, gouges, or broken parts; replace unit.
2. Check for paint, if covered with large amount—dispose.
3. Check footpads, if missing replace with matching set.
4. Check steps for damage, if missing—dispose.
5. Check legs for damage.
6. Check pail platform for damage.
7. Check ladder for cracks or breaks.
8. Check ladder for oil and grease.
9. Check ladder hinge supports and cross supports for damage.
10. Check ladder for missing cross supports.

### **B. Tests**

Visual inspection of all ladder steps, ladder legs, and ladder cross supports.

### **C. Refurbishing Procedures**

See section E below.

### **D. Retesting Criteria**

Visually inspect ladder steps, ladder legs, ladder foot pads, and ladder cross supports.

### **E. Cleaning Procedures**

1. Fiberglass.
  - a. Remove all oil and grease.
  - b. Clean with soap and water or power wash.
  - c. Air dry.

### **F. Repackaging**

Local cache option for storage.

### **G. Storage and Shelf Life Checks**

If stored upright, must be securely strapped to prevent falling.

**ITEM: LANTERN, MANTLE, GAS WITH SPARK LIGHTER**

**NFES #0125**

**A. Initial Inspection/Disposal Criteria**

1. Check for usage, fuel in tank, burned mantles, etc.
2. Inspect for missing or damaged parts.
  - a. Glass broken, handle missing, mantles missing.
  - b. Rust in fuel or found on the tank seams—dispose.
3. Dirty.
4. Broken frame—dispose.

**B. Tests**

1. Ensure that lantern has working mantle(s).
2. Fill tank with fuel and charge with air.
3. Light mantles and test for proper burning.
4. Replace with new mantles at conclusion of test.

**C. Refurbishing Procedures**

1. Drain fuel and purge.
2. Clean and paint.

**D. Retesting Criteria**

See section B.

**E. Cleaning Procedures**

See section C.

**F. Repackaging**

1. Package in 8 inch by 8 inch by 16 inch carton (NSN 8115-00-079-8693) or manufacturer's travel case.
2. Place one lantern in each carton with packing to keep it from rattling loose in the carton and possibly breaking.

**G. Storage and Shelf Life Checks**

Check oil plunger assembly yearly to prevent drying.

**NOTE: When stock is depleted this item will no longer be available.**

## Storage and Refurbishing Standards

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**ITEM: LANTERN, PORTABLE, ELECTRIC, 6 VOLT,  
LANTERN, CAMP, ELECTRIC, FLUORESCENT**

**NFES #0127,  
NFES #2501**

**A. Initial Inspection/Disposal Criteria**

Check for broken lens, cracked cases, missing bulbs, and broken switches.

**B. Tests**

Install batteries to test operation of switch and bulbs.

**C. Refurbishing Procedures**

Clean as necessary, remove batteries and repair as needed.

**D. Retesting Criteria**

Only if needed.

**E. Cleaning Procedures**

Use soft cloth to clean lens and battery compartment.

**F. Repackaging**

Local cache options.

**G. Storage and Shelf Life Checks**

None at this time.

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**ITEM: LEADLINE, HELICOPTER, EXTERNAL LOADS, 6,000 POUNDS  
LEADLINE, HELICOPTER, EXTERNAL LOADS, 3,000 POUNDS**

**NFES #0380  
#0528**

**A. Initial Inspection/Disposal Criteria**

1. The leadline/hook shall be inspected for damage each time it is received into the cache.
2. Make sure there is a proof tag on the leadline. If not, send it out to a rigging house to be proofed to twice the rated working load and retagged.
3. Measure all leadlines, swivels, rings, and hooks length and diameter to make sure they meet Forest Service 5100-500 Standard.
4. Inspect the leadline; wear gloves. Run a dry rag over the entire length of the line. Snags indicate broken wires; dispose of or repair (see number 8 below) if broken cable wires are discovered.
5. Ensure that cable has no basketing or kinks; dispose of or repair if basketing is discovered.
6. Ensure that the swedge has not slipped and that it is painted. If it has slipped, have it replaced, painted red, and proof tested. (With a painted swedge and cable, if the swedge has moved, you will see an unpainted space on the cable.)
7. If the leadline is plastic coated, and the coating is scratched down to the steel, it is OK; provided there are no broken strands.
8. If the leadline is damaged, the cable can be cut and reswedged into shorter lengths: 12-, 25-, or 50-foot lengths only. (See 5100-500 Standard.)
9. Safety gates (keepers or latches) that are bent or distorted shall be replaced.
10. Always ensure that the spring will force the hatch against the tip of the hook.
11. A replacement latch kit may be ordered from the original vendor.

**NOTE: For numbers 9, 10, and 11 above, see 5700 Aviation Tech Tips. July 1993, 9357 1304-SDTDC.**

A suspension cable is not a leadline. A leadline is not the same as a suspension cable. A suspension cable section is part of the remote hook system and is larger in diameter and stiff, so that it will not rotate. (If it rotates the electrical cable attached to it will twist around the suspension cable.)

**B. Tests**

Any certified rigging company can test the leadline assembly such as:

Boise Rigging Supply  
106 West 32nd St.  
Garden City, ID 83714  
Phone: 208-342-8919; 800-342-7673  
FAX: 208-342-8919

**C. Refurbishing Procedures**

1. Qualified rigging personnel should make repairs. See section B.
2. Spray paint swedge, if needed, before testing.

**D. Retesting Criteria**

The wire rope and hook assembly shall be proof and functionally tested each 5 years. See section B.

**E. Cleaning Procedures**

1. Remove dirt using water only—no soap, which can cause corrosion.
2. Thoroughly dry and lubricate all exposed steel parts before storing.
3. Remove grease by using petroleum solvent.

## Storage and Refurbishing Standards

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### **F. Repackaging**

1. NFES #0528 package individually in carton (cache option) and label accordingly
2. NFES #0528 package in carton NSN 8115-00-417-9378, 5 each per carton and label accordingly.
3. NFES #0380 package, commercial carton Style RSC, Type CF, class domestic, grade 275, size 17 inch by 17 inch by 4 inch and label accordingly.

### **G. Storage and Shelf Life Checks**

None.

For further information on leadlines, hooks, rings, swivels, and links, see Forest Service Standard 5100-500, with amendments.

**ITEM: LINER, FIRE SHELTER CARRYING CASE, M-2002**

**NFES #0928**

**A. Initial Inspection/Disposal Criteria**

Inspect the plastic liner for cracks or tears, if there is any evidence of damage the liner should be removed from service.

**B. Tests**

None.

**C. Refurbishing Procedures**

None.

**D. Retesting Criteria**

None.

**E. Cleaning Procedures**

1. Clean with a damp cloth.

**F. Repackaging**

If not part of the Fire Shelter, Complete, M-2002, pack 100 liners in a commercial carton, Style RSC, Type CF, class domestic, grade 275, sized to fit.

**G. Storage and Shelf Life Checks**

None.

## Storage and Refurbishing Standards

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**ITEM: LITTER, S.K.E.D.**

**NFES #1670**

### **A. Initial Inspection/Disposal Criteria**

1. If bloodstained, alert supervisor for further instructions.
2. Visual inspection for cuts or tears in plastic surface, soiled surface, missing parts such as straps or fasteners.
3. Structural damage such as grommets pulled out.
4. All straps, handles (web gear) are intact and functional.

### **B. Tests**

Check for weakness or nonvisible damage.

### **C. Refurbishing Procedures**

1. If plastic is cut or torn and cannot be economically repaired, remove from service. Retain all serviceable components for replacement on other litters.
2. Wash S.K.E.D. with mild soap and warm water. Wash with power washer and hang to dry.
3. Replace worn or damaged straps or fasteners.

### **D. Retesting Criteria**

Reassemble to ensure completeness and all parts are fitting properly.

### **E. Cleaning Procedures**

Completed in section C.

### **F. Repackaging**

Roll up S.K.E.D (using rubber gloves for better grip) small enough to fit into case. Fasten retaining strap tightly so S.K.E.D can be easily extracted.

### **G. Storage and Shelf Life Checks**

None at this time.

For information and parts lists see:

#### **SKEDCO, Inc.**

PO Box 230487

Portland, OR. 97281

Phone: 800-770-7533

Web site: <http://www.skedco.com>

**ITEM: LONGLINE, CABLE 50' WINEMA PLUGS**

**NFES #0849**

**A. Initial Inspection/Disposal Criteria**

1. Inspect for structural damage.
  - a. Broken wires (electrical cord).
  - b. Severe kinks in wire rope (bad line cable).
  - c. Ballooning of cable wires (bad line cable).
  - d. Distorted hook, rings, and wire rope eyes.
  - e. Missing nylon tie raps.
  - f. Bent or distorted electrical connections.
  - g. Cuts, tears, or frayed electrical wires.
  - h. Inspect longline wire rope cable; wear gloves and run a dry rag over the entire length of the wire rope. Snags indicate broken wires—dispose or replace wire if broken cable wires are discovered.

**B. Tests**

The wire rope can be proof tested by any certified rigging company, such as:

Boise Rigging Supply  
106 West 32nd St.  
Garden City, ID 83714  
Phone: 208-342-8919; 800-342-7673  
FAX: 208-342-8919

**C. Refurbishing Procedures**

1. Replace missing or broken nylon tie raps.
2. Other repairs should be completed by qualified testing personnel. See section B.
3. Replace unserviceable sections if possible to maintain a serviceable unit.
4. Damaged sections of the wire rope may be repaired provided the repaired section does not reduce the length of the section by more than 10 percent. The minimum length of a 50-foot section shall be at least 45 feet.

**D. Retesting Criteria**

1. Repaired sections shall be tested at twice the rated working load prior to being returned to the available stores system.
2. The wire rope shall be proof tested each 5 years.

**E. Cleaning Procedures**

The wire rope may be cleaned with hot water.

**F. Repackaging**

Local cache option.

**G. Storage and Shelf Life Checks**

None.

For further information on this subject, see copy of Office of Aircraft Services Memorandum, dated December 14, 1989 (or later revision) on this subject.

## Storage and Refurbishing Standards

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<b>ITEM: NET, CARGO, 12' x 12'</b>	<b>NFES #0531</b>
<b>NET, CARGO, 15'x 15'</b>	<b>#0458</b>
<b>NET, CARGO, LIGHTWEIGHT CARGO, 10' X 10'</b>	<b>#0695</b>

### A. Initial Inspection/Disposal Criteria

1. Any fraying or deterioration of lines. (If more than 10 percent of strands in any two adjacent cycles of the net are broken, see Equip Tips 8657 1304 5700-Aviation Oct 1986).

**NOTE: Before disposal, consider cost effectiveness of repair by manufacturer.**

2. Any netting that has contamination by fuel oils or other liquids considered degenerative to netting.
3. Verify certification tag is attached to net. (300, 3,000 or 6,000 pounds)
4. Any NFES #0695 net that has black mesh must be taken out of service.

### B. Tests

1. Brittleness: Test by bending several areas of the nets rope 180 degrees back on itself. If more than 2 strands break per bend, dispose of net or return to manufacturer for repair. (See Equip Tips 8657 1304 5700-Aviation Oct 1986).

### C. Refurbishing Procedures

1. Lay out net and inspect all ropes for fraying, burns, or wear points.
2. Clean all dirt from netting.
3. Remove all flagging, string, and rope.

**NOTE: On some heavy cargo nets, the mesh intersections are fixed with molded plastic crosses. These should be visually inspected for cracks and missing parts whenever the loop thimbles are inspected.**

### D. Retesting Criteria

None.

### E. Cleaning Procedures

Hang or stack polypropylene nets and clean with water from high-pressure hose.

### F. Repackaging

Suggested cartons are:

1. NFES #0531 net, package in carton NFES #2006, 23 inch by 19 inch by 10 inch (NSN 8115-00-139-0722). Label accordingly.
2. NFES #0458 net, package in carton NFES #2007. 24 inch by 16 inch by 16 inch (NSN 8115-00-292-0123). Label accordingly.
3. NFES #0695 net, package in carton NFES #2006. 23 inch by 19 inch by 10 inch (NSN 8115-00-139-0722). Label accordingly.

### G. Storage and Shelf Life Checks

None at this time.

**ITEM: NOZZLE TIPS, STRAIGHT-STREAM AND SPRAY**

**NFES #0635, #0636, #0637, #0638,  
#0903, #0094, #0737**

**A. Initial Inspection/Disposal Criteria**

1. Check for obvious damage:
  - a. Check for burrs.
  - b. Check for tail gasket (correct or not correct). Replace if needed.
  - c. Check for cracks.
  - d. Check for bad threads.
  - e. Look through tip, if clogged, clean out. Take out disk to clean out on spray tips.

**B. Tests**

1. Attach to hose.
2. Turn on water and ensure adequate flow and pattern are attained.

**C. Refurbishing Procedures**

None.

**D. Retesting Criteria**

None.

**E. Cleaning Procedures**

1. All items will be washed and cleaned of mud, dirt, and grease. Clean in a dishwashing detergent with brush or scouring pad or high-pressure wash as needed. Do not soak for extended periods of time or the detergent will corrode the metal.
2. Rinse thoroughly.
3. Stand upright to drain water and dry.

**F. Repackaging**

1. Local cache option and label accordingly.
2. Standard pack is 24 each per carton.

**G. Storage and Shelf Life Checks**

None at this time.

## Storage and Refurbishing Standards

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**ITEM: NOZZLE, GARDEN HOSE**

**NFES #0136**

**A. Initial Inspection/Disposal Criteria**

1. Check for burrs.
2. Check for washer.
3. Check for bad threads.

**B. Test**

Test at hose bib pressure.

**C. Refurbishing Procedures**

Replace missing or cracked gaskets.

**D. Retesting Procedures**

Test at 100 psi. If nozzle leaks, throw away.

**E. Cleaning Procedures**

1. Wash and clean of mud, dirt, and grease.
2. Clean in a dishwashing detergent with brush or scouring pad or high-pressure wash.
3. Rinse thoroughly.
4. Stand upright to drain water and dry.

**F. Repackaging**

Local cache option for repacking.

Standard pack is 10 each per carton or 100 each per carton.

**G. Storage and Shelf Life Checks**

None at this time.

**ITEM: NOZZLE, TWIN TIP SHUTOFF, 1-INCH BASE**

**NFES #0024**

**A. Initial Inspection/Disposal Criteria**

1. Check for obvious damage:
  - a. Check for burrs.
  - b. Check for tail gasket and screen.
  - c. Check handle for damage or missing screw. Is handle in right position?
  - d. Does handle turn freely in proper position?
  - e. Check for fire damage. May cause failure in the future.
  - f. Check hose coupling threads for damage.

**B. Tests**

1. Install on pump.
2. Open handle on nozzle.
3. Turn on water.
4. Check pattern on fog-tip to see if clogged—CLEAN OUT.
5. Close handle.
6. Turn on pump to 250 psi.
7. Check for leaks:
  - a. Tail gasket.
  - b. Under the handle.
  - c. At both tips.

**C. Refurbishing Procedures**

1. Replace handle and ball with a new kit if needed.
2. Replace tail gasket and/or screen if missing, cracked, or stiff.
3. Nozzle will have a 3/16 inch straight-stream tip (NFES #0637) and a 2- to 4-gal/min fog tip (NFES #0635).

**D. Retesting Criteria**

See section B.

**E. Cleaning Procedures**

1. Clean in a dishwashing detergent with brush, scouring pad, or high-pressure wash as needed. Do not soak for extended periods of time or the detergent will corrode the metal.
2. Rinse thoroughly, stand upright with handle in open position and allow to dry.
3. Lubricate with appropriate dry lubricant such as graphite.

**F. Repackaging**

1. Package in units containing nozzle body with a 3/16 inch straight-stream tip and 2- to 4-gal/min fog tip.
2. Package 20 each in carton 12 inch by 9 inch by 10 inch (NSN 8115-01-012-5504).

**G. Storage and Shelf Life Checks**

None at this time.

## Storage and Refurbishing Standards

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**ITEM: NOZZLE, SHUTOFF, COMBINATION, BARREL  
NOZZLE, SHUTOFF, COMBINATION, BARREL, PLASTIC**

**NFES #1081, #1082  
#0137, #0138**

### **A. Initial Inspection/Disposal Criteria**

1. Check for obvious damage:
  - a. Check for burrs and cracks.
  - b. Check tail gasket. Replace if missing, cracked, or stiff.
  - c. Check screw or washer.
  - d. Must turn freely.
  - e. Check for fire damage. May cause failure in the future.
  - f. Check hose coupling threads for damage.
  - g. Old Style KK: check threads inside of barrel; if they show—dispose.

### **B. Tests**

1. Pressure testing:
  - a. Turn on pump to 250 psi.
  - b. Check for leaks:
    - (1) Around the tail gasket.
    - (2) Behind the barrel.
    - (3) The tip of the barrel.
    - (4) If plastic nozzle is found defective, dispose (NFES #0137, #0138).

### **C. Refurbishing Procedures**

Replace tip, screw, and “O” ring, if needed (NFES #1081, #1082).

### **D. Retesting Criteria**

Retest according to section B.

### **E. Cleaning Procedures**

1. All items will be washed and cleaned of foreign matter, such as mud, dirt, and grease. Clean in a dishwashing detergent with brush and scouring pad, or high-pressure wash”as needed. Do not soak for extended periods of time or the detergent will corrode the metal.
2. Rinse thoroughly.
3. Stand upright with barrel in open position to drain water and dry.
4. Lubricate threads on back of the barrel with appropriate dry lubricant (graphite).

### **F. Repackaging**

Package 20 each in carton 12 inch by 9 inch by 10 inch and label accordingly.

### **G. Storage and Shelf Life Checks**

None at this time.

**ITEM: NOZZLE, FIRE FOAM, PLASTIC**

NFES #0627, #0628, #0629

**A. Initial Inspection Disposal Criteria**

1. Check for worn or damaged threads.
2. Check for gasket.
3. Ensure nozzle barrel has no cracks in plastic.

**B. Tests**

None required.

**C. Refurbishing Procedures**

Replace gasket if necessary.

**D. Retesting Criteria**

None.

**E. Cleaning Procedures**

1. Wash and clean of foreign matter, such as mud, dirt, and grease.
2. Clean with scrub brush in water with dishwashing detergent or high pressure wash.
3. Rinse thoroughly.
4. Stand upright and allow to dry.

**F. Repackaging**

Package 10 each in carton (cache option) and label accordingly.

**G. Storage and Shelf Life Checks**

None at this time.

**ITEM: PACK, FIREFIGHTER'S FIELD**

**NFES #1372**

### **A. Initial Inspection/Disposal Criteria**

1. Fabric and webbing.
  - a. Any hole, cut, tear, fray, or burn that cannot be repaired economically.
  - b. Any area of abrasion that has weakened the fabric beyond repair.
  - c. Any webbing that is cut, burned, or abraded beyond economical repair.
2. Hardware.

Check all plastic and metal hardware for dirt, cracks, breaks, and proper function. See section B.
3. Zippers.

Check all zippers for broken coils, missing or broken sliders and for proper function. See section B.
4. Any writing, drawings, etc. on pack; dispose of unit.

NOTE: The cache manager shall determine when repair is economical. This decision will depend on available repair facilities.

### **B. Tests**

1. Test hardware by fastening and unfastening. The hardware should function easily with little force being applied and no difficulty in the release.
2. Open and close to test zippers. The zipper should operate smoothly through its full length.

### **C. Refurbishing Procedures**

1. Assemble complete pack by attaching NFES #0590 (pack, belt), NFES #1529 (2 each case, canteen), and NFES #1557 (harness) to NFES #1530 (belt, equipment).
2. Check all plastic fasteners and hardware and then place in NFES #1559 (pack).
3. Replace nonfunctioning hardware.

### **D. Retesting Criteria**

Retest all replacement hardware. See section B.

### **E. Cleaning Procedures**

1. Allow any mud and loose dirt to dry, then remove using a stiff-bristle brush.
2. Remove light oil using a solution of warm water and mild detergent and a brush. Rinse with clear water, let dry.
3. Soak in water-soluble biodegradable degreaser for 30 minutes. Brush with a bristle brush, rinse thoroughly, and hang to dry.
4. Or, pretreat with water-soluble biodegradable degreaser, steam clean, and hang to dry.
5. DO NOT MACHINE WASH OR DRY. DO NOT USE BLEACH TO CLEAN FABRIC.

### **F. Repackaging**

Package 10 each in carton NFES #2007, 24 inch by 16 inch by 16 inch (NSN 8115-00-292-0123).

### **G. Storage and Shelf Life Checks**

None at this time.

See appendix K for information on available water-soluble biodegradable degreasers.

**ITEM: PACK, PERSONAL GEAR**

**NFES #1855**

**A. Initial Inspection/Disposal Criteria**

1. Fabric and webbing.
  - a. Any hole, cut, tear, fray, or burn that cannot be repaired economically.
  - b. Any area of abrasion that has weakened the fabric beyond repair.
  - c. Any webbing that is cut, burned, or abraded beyond economical repair.
2. Hardware.

Check all plastic and metal hardware for dirt, cracks, breaks, and proper function. See section B.
3. Zippers. Check all zippers for broken coils, missing or broken sliders, and for proper function. See section B.
4. Any writing, drawings or etc. on pack; dispose of unit.

**NOTE: The cache manager shall determine when repair is economical. This decision will depend on available repair facilities.**

**B. Tests**

1. Test hardware by fastening and unfastening the item at least three times. The hardware should function easily with little force being applied and no difficulty in the release.
2. Open and close zipper to test. The zipper should operate smoothly through its full length.

**C. Refurbishing Procedures**

1. Replace nonfunctioning hardware.

**D. Retesting Criteria**

Retest all replacement hardware as specified in section B.

**E. Cleaning Procedures**

1. Allow any mud and loose dirt to dry, then remove using a stiff bristle brush.
2. Remove light oil using a solution of warm water and mild detergent and a brush. Rinse with clear water, let dry.
3. Remove heavy oil by soaking in water-soluble biodegradable degreaser for 30 minutes; high pressure wash or steam clean and hang to dry.
4. Pretreat with a water-soluble biodegradable degreaser, steam clean or high pressure wash, and hang to dry.
- 5. DO NOT MACHINE WASH OR DRY. DO NOT USE BLEACH TO CLEAN FABRIC.**

**F. Repackaging**

Store 10 packs in carton 18 inch by 14 inch by 18 inch.

**G. Storage and Shelf Life Checks**

None at this time.

See appendix K for information on available water-soluble biodegradable degreasers.

## Storage and Refurbishing Standards

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**ITEM: PACKBOARD, MOLDED PLYWOOD W/SHOULDER STRAPS**

**NFES #0140**

### **A. Initial Inspection/Disposal Criteria**

1. Check for obvious damage.
2. Check for cracks in plywood.
3. Check shoulder straps and buckles.
4. Check rope and grommets.
5. Check fabric for cuts, tears, holes, burns, etc.
6. Check for broken or damaged tie down hooks.

### **B. Tests**

None.

### **C. Refurbishing Procedures**

1. Sand and paint chipped and rough spots in plywood.
2. Replace ropes, straps, or other defects.
3. Replace tiedown rope if bad or missing. (50 foot)

### **D. Retesting Criteria**

None.

### **E. Cleaning Procedures**

1. Packboard should be washed and cleaned of foreign matter such as mud, dirt, and grease.
2. Hang or set aside until packboard is completely dry.

### **F. Repackaging**

1. Local cache option for repackaging.
2. Pack 10 packboards per carton.

### **G. Storage and Shelf Life Checks**

None at this time.

**ITEM: PACKSACK, NYLON, W/STRAPS**

**NFES #0744**

**A. Initial Inspection/Disposal Criteria**

1. Fabric and webbing.
  - a. Any hole, cut, tear, fray, or burn that cannot be repaired economically.
  - b. Any area of abrasion that has weakened the fabric beyond repair.
  - c. Any webbing that is cut, burned, or abraded beyond repair.
2. Hardware.

Check all plastic and metal hardware for dirt, cracks, breaks, and proper function.
3. Zippers.

Check zipper (new style) for broken coils, missing or broken sliders, and proper function.
4. Check for writing or any drawings made with markers that cannot be removed.

**B. Tests**

1. Test hardware by fastening and unfastening. The hardware should function easily with little force being applied and release with ease.
2. Open and close zipper to test. The zipper should operate smoothly through its full length.
3. To test spring lock (new style) make sure spring works properly and cord passes through spring lock with ease.

**C. Refurbishing Procedures**

1. Repair holes, cuts, tears, and broken seams.
2. Replace nonfunctioning hardware.

**D. Retesting Criteria**

Retest any zipper or hardware that has been replaced.

**E. Cleaning Procedures**

1. Allow any mud and loose dirt to dry, then remove using a stiff-bristle brush.
2. Remove light oil using a solution of warm water and mild detergent and a brush. Rinse with clear water, let dry.
3. Soak in a solution of a water-soluble biodegradable degreaser for 30 minutes. Brush with a bristle brush, rinse thoroughly, and hang to dry.
4. Or, pretreat with a water-soluble biodegradable degreaser, steam clean, and hang to dry.
5. Old style may be washed in a commercial washing machine.
6. **DO NOT MACHINE WASH OR DRY. DO NOT USE BLEACH TO CLEAN FABRIC.**

**F. Repackaging**

Package 20 each in carton (cache option) and label accordingly.

**G. Storage and Shelf life Checks**

None at this time.

See appendix K for information on available water-soluble biodegradable degreasers.

## Storage and Refurbishing Standards

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**ITEM: PAD, SLEEPING, GRAY 3/8" by 23" by 75"**

**NFES #1566**

**A. Initial Inspection/Disposal Criteria**

1. Check for rips, cuts, stains, mildew, dampness.
2. Determine if cost effective to refurbish.

**B. Tests**

None.

**C. Refurbishing Procedures**

See section E.

**D. Retesting Criteria**

None.

**E. Cleaning Procedures**

1. If pad is wet, expose to sun or other heat source until dry.
2. Brush with stiff-bristle brush to eliminate dirt or other foreign matter.
3. Blow off remaining dust or fine dirt particles with high-pressure air hose or vacuum.

**F. Repackaging**

Repack 50 each in original carton if serviceable or use NFES #0134 carton, sleeping pad, 76 inch by 22 inch by 20 inch, (NSN 8115-01-381-6529).

**G. Storage and Shelf Life Checks**

None at this time.

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**ITEM: POLE, RIDGE, 14' X 16' TENT**

**NFES #0089**

**A. Initial Inspection/Disposal Criteria**

1. Visual inspection indicating use or broken and/or missing parts. NFES #0082 consists of four parts and NFES #0089 consists of six parts per pole.
2. Structural failure, bent pole—dispose of damaged pieces (salvage usable parts).

**B. Tests**

Put together to ensure that all pieces fit properly and there is no unseen damage.

**C. Refurbishing Procedures**

1. Replace missing or damaged parts.
2. Clean if dirty.
3. Repaint if necessary.

**D. Retesting Criteria**

Assemble again to ensure all pieces fit correctly.

**E. Cleaning Procedures**

Completed in section C.

**F. Repackaging**

Package in commercial carton, Style RSC, Type CF, class domestic, grade 275, size 4 1/2 inch by 6 1/2 inch by 42 1/2 inch.

**G. Storage and Shelf Life Checks**

None at this time.

16-ft ridge pole consists of the following:



## Storage and Refurbishing Standards

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**ITEM: POLE, UPRIGHT**

**NFES#0083**

### **A. Initial Inspection/Disposal Criteria**

1. Visual inspection for use or broken and/or missing parts.
2. Structural damage, bent pole—dispose after salvaging usable parts.

### **B. Tests**

Extend pole to see if pole telescopes freely.

### **C. Refurbishing Procedures**

1. If top pin is bent or broken, replace with a steel pin.
2. Replace adjuster pins and cables when missing.
3. Clean if necessary.
4. Repaint if necessary to prevent rust or corrosion.

### **D. Retesting Criteria**

Inspect to ensure that all parts function correctly once refurbishing is complete.

### **E. Cleaning Procedures**

See section C.

### **F. Repackaging**

Package 6 each in commercial carton, Style RSC, Type CF, class domestic, grade 275, size 4 1/2 inch by 6 1/2 inch by 42 1/2 inch.

### **G. Storage and Shelf Life Checks**

None at this time.

**ITEM: POLYVINYL BAG, PRACTICE FIRE SHELTER, M-2002**

**NFES #2681**

**A. Initial Inspection/Disposal Criteria**

1. Inspect the bag for cracks or tears, if there is any evidence of damage the bag should be removed from service.
2. Inspect the Velcro pull strip for damage.
3. Inspect pull strap for damage.
4. Inspect all Velcro for holding capability.

**NOTE: The cache manager shall determine when repair is economical. This decision will depend on the available repair facilities.**

**B. Tests**

None.

**C. Refurbishing Procedures**

1. If any parts are damaged, repair as possible using FF thread.
2. Any damage not repairable requires entire assembly to be removed from service as components are not available separately.

**D. Retesting Criteria**

None.

**E. Cleaning Procedures**

1. Clean with a damp cloth.

**F. Repackaging**

If not part of the Practice Fire Shelter, Complete, M-2002, pack 100 bags in a commercial carton, Style RSC, Type CF, class domestic, grade 275, sized to fit.

**G. Storage and Shelf Life Checks**

None.

## Storage and Refurbishing Standards

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**ITEM: PUMP, BACKPACK, OUTFIT, COMPLETE**

**NFES #1149**

### **A. Initial Inspection/Disposal Criteria**

1. See Refurbishing Standards for Bag, Backpack Pump (Old Style)
2. See Refurbishing Standards for Bag, Backpack Pump; NFES #1197.
3. See Refurbishing Standards for Pump, Single Action; NFFES #0151.

NOTE: Combine 1 each NFES #1197 or 1 each of the old style bag and 1 each of NFES #0151 to make 1 complete unit of NFES #1149.

### **B. Tests**

Connect and disconnect male and female hose connectors to verify they are working properly.

### **C. Refurbishing Procedures**

1. Assemble complete unit, including NFES #0495, (strap, replacement, backpack pump), NFES #1197 (bag, backpackpump w/ 2 liners and couplings), and NFES #0151 (pump, single action).
2. See section A for applicable standard(s).
3. Replace male and/or female hose connectors if not functioning properly.

### **D. Retesting Criteria**

If either male or female hose connector was replaced, see section C.

### **E. Cleaning Procedures.**

See section A.

### **F. Repackaging**

1. Pack 6 each NFES #1197 (Bag, Backpack Pump) and 6 each NFES #0151 (Pump, Single Action) in NFES #2007 (24 inch by 16 inch by 16 inch) (NSN (8815-00-292-0123) carton. Label as NFES #1149.
2. Pack 6 each Old Style Bag and 6 each Pump, Single Action in NFES #2007 (24 inch by 16 inch by 16 inch) (NSN 8815-00-292-0123) carton. Label as NFES #1149.

### **G. Storage and Shelf Life Checks**

None at this time.

**ITEM: PUMP, FIRE, LIGHTWEIGHT**

**NFES #0124, #0253**

**A. Initial Inspection/Disposal Criteria**

Check local Job Hazard Analysis for proper personnel protection equipment required when working on this item.

1. Evidence of use (dust, oil, starter seal broken).
2. Evidence of damage.
3. Return to stock if not used and date last tested (DLT) does not exceed 12 months.

**B. Tests**

1. Repair to recommended manufacturer's standard, using local repair procedures.
2. Test for performance.
3. Clear fuel from fuel line.
4. Tie off starter rope to handle to determine field use. Use plastic snap seal.
5. If pump is not economically repairable, it should be disposed of using agency policies.

**C. Refurbishing Procedures**

1. Refurbished pumps should run and meet the pump performance standards set by the operator's manual and should be in good condition, i.e., no leaks, cracks, or broken parts. If not, send to an established repair shop ensuring the shop has the refurbishing standards and appropriate repair and instruction manual.
  - a. Clean off dirt, oil, and grease. (Use degreaser if needed.)
  - b. Check for identification marking, property, and serial numbers, cache identification sticker, and any other required stickers.
  - c. Ensure that water and dirt are removed from inside pump.
  - d. Grease pump as necessary.
  - e. Allow pump to dry.

**D. Retesting Criteria**

1. After the pump is repaired, it should be run tested to ensure that it meets performance standards.
  - a. Start engine to check for proper operation.
  - b. Check pump for proper performance output.

**E. Cleaning Procedures**

Completed in section C.

**F. Repackaging**

Ensure that pump is drained of water.

**G. Storage and Shelf Life Checks**

Ensure that DLT does not exceed 12 months.

## Storage and Refurbishing Standards

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### ITEM: PUMP, MARK III

NFES #0148

Check local Job Hazard Analysis for proper personnel protection equipment required when working on this item.

#### A. Initial Inspection/Disposal Criteria

1. Evidence of use (dust, oil, starter seal broken).
2. Evidence of damage.
3. Return to stock if not used and date last tested (DLT) does not exceed 12 months.
4. Ensure inspection tag is current.

#### B. Tests

See section C.

1. Repair to recommended manufacturer's standard, using local repair procedures.
2. Test for performance.
3. Clear fuel from fuel line.
4. Tie off starter rope to handle to determine field use. Use plastic snap seal.
5. In event that the pump is not economically repairable, it shall be disposed of using local policies.

#### C. Refurbishing Procedures

1. Rubber plugs and bumpers on all starters.
2. Test pumps at 1/4-inch nozzle and at shutoff. MK III should be a minimum of 230 psi.
3. Use loss of prime method to test over speed.
4. Keep decals legible.
5. Do not paint frame on Mark III.
6. Paint over speed reset button yellow.
7. Replace muffler if neck is cracked.
8. Affix hearing protection mandatory stickers.
9. Paint exposed metal on cowling and pump.
10. Check buffer and buffer coupling holes, replace if needed
11. Check head and piston for carbon buildup regularly.
12. Replace head or cylinder if two or more fins are broken.
13. Cracks in cowling overhead are okay.
14. Replace spark plug protector ("sparky") if ripped or there is a hole in the top.
15. Ensure that each pump has a fuel mix sticker and a cache owner sticker.
16. See refurbishing standards for: Tank, Gasoline, 5 Gallon, Pump Adapted, NFES #0218.

#### D. Retesting Criteria

Completed in sections B and C.

#### E. Cleaning Procedures

Local cache option.

#### F. Repackaging

Make sure pump is drained of water.

#### G. Storage and Shelf Life Checks

Ensure that DLT does not exceed 12 months.

**ITEM: PUMP, SINGLE ACTION**

**NFES #0151**

**A. Initial Inspection/Disposal Criteria**

1. Check for obvious damage.
2. Check for buns.
3. Check for cracks.
4. Bad threads.

**B. Tests**

Place hose in water and pump handle to validate that the pump works properly. If it is defective, check supply hose on pump assembly for obstructions and tight connections, bent push rods, and clogged tips.

**C. Refurbishing Procedures**

1. If pump pressure is still not sufficient, remove pump unit and replace “O” rings.
2. Check quick connection on pump for proper seating.
3. Check hose connection to pump for tightness; if loose, use a hose clamp.

**D. Retesting Criteria**

None.

**E. Cleaning Procedures**

1. Wash and clean all items of foreign matter, such as mud, dirt, and grease. Clean in dishwashing detergent with brush or scouring pad as needed.
2. Rinse thoroughly.
3. Lubricate slide with appropriate lubricant.

**F. Repackaging**

Local cache option for repackaging.

**G. Storage and Shelf Life Checks**

None at this time.

## Storage and Refurbishing Standards

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ITEM: PUMP, VOLUME, TRASH

NFES #0683, #1222

Check local Job Hazard Analysis for proper personnel protection equipment required when working on this item.

### A. Initial Inspection/Disposal Criteria

1. Pressure wash pump. Use a degreaser if necessary.
2. Inspect unit for obvious damage to body or frame.
3. Inspect for oil leaks, dirty air filters, and condition of spark plug.

**NOTE: Dispose of contaminated fuel according to hazardous materials regulations in your area.**

**NOTE: The cache manager shall determine when repair is economical. This decision will depend on available repair facilities.**

### B. Tests

1. Before starting pump.
  - a. Change engine oil.
  - b. Clean air filter.
  - c. Fill pump with water.
2. Start pump and look for items that need repair.

**NOTE: See the owner's manual for specified pump.**

- a. Engine smoking.
- b. Running rough.
- c. Missing.
- d. Adjust carburetor as needed.

### C. Refurbishing Procedures

1. Pump should run properly and discharge a specified amount of water.

**NOTE: See appropriate owner's manual for specifications and troubleshooting guide relating to your specific unit.**

If taken to local repair shop, ensure that they have the appropriate owner's manual and troubleshooting guide.

2. Drain fuel from tank and fuel lines. Start pump to ensure all fuel has been run out of unit.
3. Check to make sure all identification (serial numbers, property numbers, or other cache identification numbers) is securely fastened to pump.

### D. Retesting Criteria

If pump has not been run in past 12 months, pump must be started and run to ensure that the pump is working properly.  
(See section C.)

### E. Cleaning Procedures

Clean off dirt and oil. Use degreaser if needed.

### F. Repackaging

Use nylon tie rap to tie off starter rope to determine field use.

### G. Storage and Shelf Life Checks

See section D if unit has been stored for 12 months.

**ITEM: RAKE, COLLAPSIBLE LEAF**

**NFES #0659**

**A. Initial Inspection/Disposal Criteria**

1. Inspect for damaged/missing tines.
2. Inspect for damage to handle sliding-locking mechanism.
3. Inspect all welds to see if cracked or broken.
4. Inspect grips for tears/loss of grips.
5. Inspect nuts and bolts to make sure they are in place (2 each).
6. Inspect pin in locking mechanism.

**B. Tests**

1. Check slide mechanism to see if moves freely and does not bind up when expanding tines of rake.
2. Expand tines and check all tines to see if secure and stable.

**C. Refurbishing Procedures**

1. Clean with water, let stand and dry.
2. Repair/replace nuts, bolts, and pins as needed.
3. Replace rubber handles.

**D. Retesting Criteria**

See section B.

**E. Cleaning Procedures**

1. Damp wipe with mild detergent solution to remove dirt, mud, and grease.
2. Let stand and dry.
3. Lubricate slide mechanism with WD 40 or like solution.

**F. Repacking**

Place 10 each in carton 8 inch by 20 inch by 50 1/2 inch or equivalent.

**G. Storage and Shelf Life Checks**

None at this time.

The manufacturer of this item is:

**Mercedes Textiles Ltd.**

16633 Hymus Blvd.

Kirkland, QC, Canada

H9H 4R9

Phone: 514-697-0817

Fax: 514-697-5297

Web site: <http://www.mercedestextiles.com/english>

Various nuts, bolts, and locking pins may be procured at your local hardware store

## Storage and Refurbishing Standards

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### ITEM: REDUCERS

NFES #0009, #0010, #0417, #0418  
#0733, #2229, #2230

#### A. Initial Inspection/Disposal Criteria

Check for obvious damage.

1. Cracks.
2. Bad threads.
3. Tail gaskets—stiff, damaged, or missing.

#### B. Tests

None.

#### C. Refurbishing Procedures

Replace tail gaskets if stiff, damaged, or missing.

Check male threads. If they are damaged try using a triangular file to remove burrs, dings, etc.

#### D. Retesting Criteria

None.

Recheck damaged threads by fitting with appropriate female fitting. If not smooth fit, dispose of item.

#### E. Cleaning Procedures

1. Clean in dishwashing detergent with a brush or scouring pad or high-pressure wash.
2. Rinse thoroughly.
3. Stand upright to drain and dry.

#### F. Repackaging

1. Package 10 each (NFES #0009, #0010, #0418, and #0733) in 8 inch by 4 inch by 4 inch carton (NSN 8115-00-290-3365).
2. Package 10 each (NFES #0417, #2229, and #2230) per local cache options.

#### G. Storage and Shelf Life Checks

None at this time.

**ITEM: REGULATOR, PROPANE**

**NFES #0930**

**A. Initial Inspection/Disposal Criteria**

1. Visual inspection for loose, defective fittings.
2. Check regulating handle to ensure tightness and smooth operation.
3. Ensure that screws holding halves together are present and tight.

**B. Tests**

1. Connect to air line adapter and activate air.
2. Turn regulator control from “OFF” to “ON” position to ensure proper functioning.

**C. Refurbishing Procedures**

1. Wipe off dirt with damp cloth or blow off with air compressor.
2. Clean fitting threads with wire brush.
3. Replace fittings if worn or missing.

**D. Retesting Criteria**

None.

**E. Cleaning Procedures**

See section C.

**F. Repackaging**

Local cache option for repackaging.

**G. Storage and Shelf Life Check**

None at this time.

### A. Initial Inspection/Disposal Criteria

1. Inspect seams of polyvinyl plastic bag for thread breaks and polyvinyl material for any breaks, tears, or holes.
2. Verify that red pull tabs are unbroken and securely attached to hook and pile fastener tape.
3. Verify that NOT FOR FIRE USE labels are firmly stitched to hook and pile fastener tape.
4. Remove shelter from polyvinyl bag, unfold, and inspect for tears or other signs of wear.
5. Check attachment of tie down straps to the shelter cloth.

### B. Tests

Open and close hook and pile fastener tape. It should be free of foreign matter and provide a secure closure for the practice fire shelter in its polyvinyl bag.

### C. Refurbishing Procedures

1. If one or both red pull tabs on fastener tape are broken, or if polyvinyl has breaks, tears, or holes, replace with a new polyvinyl bag (NFES #2409).
2. If the shelter is undamaged and tie down straps are securely in place, refold shelter, place in polyvinyl bag, and reattach fastener tape. If cloth is torn or otherwise in a condition that makes it unusable as a training tool, replace with a new practice fire shelter (NFES #2408).
3. Validate user's instructions are in pocket.

### D. Retesting Criteria

None.

### E. Cleaning Procedures

The only cleaning necessary will be to the practice fire shelter carrying case (NFES #2410).

1. Allow any mud or loose dirt to dry, and remove with a stiff-bristle brush.
2. Remove light oil with a solution of warm water and mild detergent and brush. Rinse with clear water and let dry.
3. Remove heavy oil by pretreating with water-soluble biodegradable degreaser, or with a detergent and water solution and brush, or power wash. Rinse with clean water and let dry.

**DO NOT USE BLEACH!**

### F. Repackaging

Pack 10 refurbished practice fire shelters in a close fitting commercial carton, Style RSC, Type, I class domestic, grade 275, size 16 inch by 10 inch by 12 inch.

### G. Storage and Shelf Life Checks

Do not store in same area as Shelter, Fire, NFES # 0169.

See appendix K for information on water-soluble biodegradable degreasers.

**ITEM: SHELTER, FIRE, PRACTICE, COMPLETE, M-2002**

**NFES #2678**

**A. Initial Inspection/Disposal Criteria**

1. The Complete Practice Fire Shelter should consist of the following components:
  - a. Practice Fire Shelter M-2002 - See Shelter, Fire, Practice, M-2002
  - b. Practice Fire Shelter Polyvinyl Bag, M-2002 - See Case, Carrying, Fire Shelter, Practice, M-2002
  - c. Practice Fire Shelter Carrying Case M-2002 - See Polyvinyl Bag, Fire Shelter, Practice, M-2002
  - d. Liner, Fire Shelter Carrying Case, M-2002 - See Liner, Fire Shelter Carrying Case, M-2002

**NOTE: The cache manager shall determine when repair is economical. This decision will depend on the available repair facilities.**

**B. Tests**

None.

**C. Refurbishing Procedures**

See procedure for appropriate component.

**D. Retesting Criteria**

None.

**E. Cleaning Procedures**

See procedure for appropriate component.

**F. Repackaging**

Pack 10 refurbished complete practice fire shelters in a commercial carton, Style RSC, Type CF, class domestic, grade 275, sized to fit.

**G. Storage and Shelf Life Checks**

None.

## Storage and Refurbishing Standards

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**ITEM: SHELTER, FIRE, PRACTICE, M-2002**

**NFES #2679**

**A. Initial Inspection/Disposal Criteria**

Unfold practice fire shelter and inspect for tears, ripped seams, punctures.

**NOTE: The cache manager shall determine when repair is economical. This decision will depend on the available repair facilities.**

**B. Tests**

None.

**C. Refurbishing Procedures**

1. If undamaged, refold according to instructions.
2. If repair is necessary, use material from discarded practice fire shelter and FF nylon thread.

**D. Retesting Criteria**

None.

**E. Cleaning Procedures**

1. Clean polyvinyl bag with damp cloth.

**F. Repackaging**

If not part of the Fire Shelter, Complete, Practice, M-2002, pack 10 practice fire shelters in a commercial carton, Style RSC, Type CF, class domestic, grade 275, sized to fit.

**G. Storage and Shelf Life Checks**

None.

**ITEM: SHELTER, FIRE, COMPLETE, M-2002**

**NFES #0925**

**A. Initial Inspection/Disposal Criteria**

1. Should consist of Fire Shelter M-2002 in polyvinyl bag, Carrying Case M-2002, and Liner M-2002.
2. Fire Shelter in polyvinyl bag - See Shelter, Fire, M-2002
3. Carrying Case - See Case, Carrying, Fire Shelter, M-2002
4. Liner - See Liner, Fire Shelter, M-2002

**NOTE: The cache manager shall determine when repair is economical. This decision will depend on the available repair facilities.**

**B. Tests**

None.

**C. Refurbishing Procedures**

See procedure for appropriate component.

**D. Retesting Criteria**

None.

**E. Cleaning Procedures**

See procedure for appropriate component.

**F. Repackaging**

Pack 10 refurbished complete fire shelters in a commercial carton, Style RSC, Type CF, class domestic, grade 275, sized to fit.

**G. Storage and Shelf Life Checks**

None.

## Storage and Refurbishing Standards

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**ITEM: SHELTER, FIRE, M-2002**

**NFES #0926**

### **A. Initial Inspection/Disposal Criteria**

1. DO NOT OPEN POLYVINYL BAG FOR INSPECTION.
2. Inspect polyvinyl bag for cuts, puncture, torn seams, if the bag has any that may affect the integrity of the bag or the shelter, remove shelter from service (see #6 below).
3. Inspect that the red quick-opening tear strip is unbroken and it is sealed to the bag the entire length, pull rings should be unbroken, if not, remove shelter from service (see #6).
4. Look through bag at shelter for tears along seams. If any tears evident, or if sufficient gray discoloration of the interior of the polyvinyl bag to obscure interior inspection, remove shelter from service and use for training or discard.
5. If there is any doubt about the condition of the shelter or polyvinyl bag, REMOVE FROM SERVICE.
6. Due to the high cost of these shelters, rather than discard shelters that show damage to the polyvinyl bag but not to the shelter itself, it is recommended that these shelters be stored until sufficient shelters are available for rebagging to be economical.

### **B. Tests**

None.

### **C. Refurbishing Procedures**

None. Any damage to the Fire Shelter renders it unusable and it cannot be refurbished, however damage to the polyvinyl bag may allow the shelter to be rebagged.

### **D. Retesting Criteria**

None.

### **E. Cleaning Procedures**

1. Clean polyvinyl bag with damp cloth.

### **F. Repackaging**

If not part of the Fire Shelter, Complete, M-2002, pack 10 fire shelters in a commercial carton, Style RSC, Type CF, class domestic, grade 275, sized to fit.

### **G. Storage and Shelf Life Checks**

None.

**ITEM: SHIRTS, FLAME RESISTANT**

**NFES #0511, #0512, #0522, #0569, #0570,  
#0577 to #0580, #2078, #2079**

**A. Initial Inspection/Disposal Criteria**

1. Any holes, cuts, tears, or torn seams not economical to repair.
2. Any buttonholes with frayed or broken stitching.
3. Any missing or tack buttons.
4. Any hook and pile fastener on sleeves and pockets that does not provide adequate closure.

**NOTE: The cache manager shall determine when repair is economical. The decision will depend on available repair facilities.**

**B. Tests**

Open and close hook and pile fasteners. They should provide an adequate and secure closure.

**C. Refurbishing Procedures**

1. Repair any hole, cut, tear, or torn seam by darning or patching, duplicating the original construction. See note in section A.
2. Over stitch any frayed buttonhole using a buttonhole or zig-zag stitch that has 50 to 60 stitches per buttonhole.
3. Replace damaged hook and pile fastener tape with tape of the same length, width, and quality as the original. See note in section A.
4. Use Nomex® (Aramid) thread and materials for all repairs.

**D. Retesting Criteria**

Test all replacement hook and pile fasteners after sewing in place, as specified in section B.

**E. Cleaning Procedures**

See appendix B for Nomex® laundering instructions.

**DO NOT USE BLEACH TO CLEAN FABRIC.**

**F. Repackaging**

Package 50 each of same size in carton NFES #2007, 24 inch by 16 inch by 16 inch (NSN 8115-00-292-0123).

**G. Storage and Shelf Life Checks**

None at this time.

## Storage and Refurbishing Standards

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**ITEM: SHROUD, NECK AND FACE, WILDLAND FIREFIGHTERS**

**NFES #1274**

### **A. Initial Inspection/Disposal Criteria**

1. Any holes, cuts, tears, burns, or torn seams that cannot be repaired economically.
2. Any hook and pile fastener missing or that does not provide adequate closure.

**NOTE: The cache manager shall determine when repair is economical. This decision will depend on the available repair facilities.**

### **B. Tests**

Open and close the hook and pile fasteners to ensure that they provide and adequate and secure closure.

### **C. Refurbishing Procedures**

1. Repair holes, cuts, tears, burns, and torn seams by darning, patching, or by duplicating the original construction (see note in section A).
2. Replace damaged hook and pile fastener tape with tape of the same length, width, and quality as the original (see note in section A).

### **D. Retesting Criteria**

Test all replacement hook and pile fasteners and zippers after sewing in place, as specified in section B.

### **E. Cleaning Procedures**

See appendix B for Nomex® laundering instructions.

**DO NOT USE BLEACH TO CLEAN FABRIC.**

### **F. Repackaging**

1. Lay with inside up, fold both sides towards middle, fastening hook and loop fasteners.
2. Pack 20 shrouds in carton to be determined.

### **G. Storage and Shelf Life Checks**

None at this time.

See appendix K for information on water-soluble biodegradable degreasers.

**ITEM: SPOUT, GAS, FLEXIBLE, 16", STEEL**

**NFES #0210**

**A. Initial Inspection/Disposal Criteria**

1. Visual inspection for obvious damage.
  - a. Bent or crushed sections in flexible portion, dispose of unit.
  - b. Missing, cracked, or stiff tail gasket on bottom of spout.
  - c. Missing screen on pouring end.
2. Visual inspection of spout for obstructions.
3. Check locking flange to ensure it is in working condition. If not, dispose of unit.

**B. Tests**

Using a solvent, check spout for leaks.

**C. Refurbishing Procedures**

1. If possible, replace tail gasket if missing, cracked, or stiff.
2. If possible, replace screen. (Try to salvage screens from disposed items.) If unable to replace screen, dispose of unit.
3. Remove any obstructions that may be in spout.
4. Clean screen and threads on screen cap.
5. Can be washed using a pressure washer.

**D. Retesting Criteria**

None.

**E. Cleaning Procedures**

1. Clean completely with solvent or high-pressure wash. (Use in a well-ventilated area.)
2. Stand on end or lay unit down to drain and dry.
3. Make sure spout is completely dry before repacking.

**F. Repackaging**

1. Local cache option for carton.
2. Pack 10 each in carton.

**G. Storage and Shelf Life Checks**

None at this time.

## Storage and Refurbishing Standards

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**ITEM: SWIVEL, CARGO, 3,000-POUND CAPACITY  
SWIVEL, CARGO, 6,000-POUND CAPACITY**

**NFES #0526  
#0286**

### **A. Initial Inspection Disposal Criteria**

1. Review for structural damage.
2. Inspect hook and latch before storage.
3. Ensure that latch is not distorted or bent. Safety gates (latches or keepers) that have become bent or distorted no longer help the sling load from inadvertently coming off the hook.
4. Inspect for cracks, nicks, wear, gouges, and deformation.

### **B. Tests**

1. See appendix H.
2. Make sure the spring will force the latch against the tip of the hook.
3. Excessive lateral movement of the swivel hook may indicate bearing wear. Return to manufacturer for inspection.
4. Inspect “swinging” gate to be sure it moves freely and without obstructions.

### **C. Refurbishing Procedures**

1. If safety gate (latch or keeper) is bent or distorted, replace the damaged latch with hook latch replacement kit.
2. Inspect ring/pear ring for binding, ensure that nut is secure with pin in place.
3. Remove from service and return to manufacturer for inspection any swivel whose rotating swivel body or hook shows any cracks or gouges.
4. Lubricate with a lithium-base grease of medium consistency.

**NOTE: Never repair, alter, rework, or reshape a hook or swivel. Return to the manufacturer for repair.**

### **D. Retesting Criteria**

None.

### **E. Cleaning Procedures**

Wipe clean, paint as needed.

### **F. Repackaging**

1. Pack 10 each NFES #0528 in carton (cache option) and label accordingly.
2. Pack 5 each NFES #0286 in carton (cache option) and label accordingly.

### **G. Storage and Shelf Life Checks**

None at this time.

**ITEM: TABLE, MESS 4 PERSON W/BENCHES  
TABLE, FOLDING**

**NFES #1390, #2698  
#2698**

**A. Initial Inspection/Disposal Criteria**

1. Check for table surface damage.
2. Check for broken or bent legs.
3. Check for rough cutting surface edges.
4. Check for missing items and supports.
  - a. If suitcase table, and the damaged area cannot be repaired, dispose of the table.
  - b. If folding table, and legs or top cannot be repaired, dispose of the unit.

**B. Tests**

None.

**C. Refurbishing Procedures**

1. For plywood mess table, replace any missing or broken parts with 3/4-inch birch plywood and refinish.
2. For metal/plastic suitcase mess table, repair damage area by welding, pop riveting or by gluing.
3. Folding table, try to repair legs and top and if possible straighten any dents and miscellaneous damage to metal folding tables.

**D. Retesting Criteria**

None.

**E. Cleaning Procedures**

1. High pressure wash or wipe tables with household cleaner suitable for the table surface.
2. Remove any foreign matter on tables, such as gum.
3. Let table stand to dry.

**F. Repackaging**

For suitcase mess table, band case and place in proper location.  
For folding tables, collapse and place in proper location.

**G. Storage and Shelf Life Checks**

None at this time.

## Storage and Refurbishing Standards

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**ITEM: TANK, PORTABLE, 300 GALLON**  
**TANK, PYRAMID, LIQUID STORAGE 150 GALLON**

**NFES #0220**  
**NFES #0221**

### **A. Initial Inspection/Disposal Criteria**

1. Rips or holes greater than 3 inches.
2. Separating of seams.

### **B. Tests**

Fill with air and check for holes.

### **C. Refurbishing Procedures**

1. Fill with water, air, and check for holes.
2. If leaks are observed, glue and patch area, then refill after glue dries.
3. Clean with soapy water and air dry.

### **D. Retesting Criteria**

Refill with air after patching to ensure patch is secure.

### **E. Cleaning Procedures**

Clean with soapy water then air dry.

### **F. Repackaging**

1. Ensure that tank is dry.
2. Package 1 each in carton NFES #2006; 23 inch by 19 inch by 10 inch (NSN 8115-00-139-0722).

### **G. Storage and Shelf Life Checks**

None at this time.

**ITEM: TANK, GASOLINE, FIVE GALLON, PUMP ADAPTED**

**NFES #0218**

**A. Initial Inspection/Disposal Criteria**

1. Check for fuel and dispose of properly.

**NOTE: Dispose of contaminated fuel according to hazardous material regulations in your area.**

2. Check for leaks or separation along seams.
  3. Check all threads on connector for serviceability.
  4. Check gasket on cap. Replace if missing, cracked, or stiff.
  5. Check for rust, if found, dispose of tank.

**B. Tests**

Visual checks only.

**C. Refurbishing Procedures**

1. Drain all existing fuel and purge.
2. Use an air hose to dry the interior of the container and verify that no grit and or dirt material has dried within female opening of quick disconnect coupling.
3. Turn upside down with lids off or open to dry.
4. Inspect vent hole to ensure it is clean and serviceable.
5. Wipe down outside of container and repaint if necessary.

**D. Retesting Criteria**

None.

**E. Cleaning Procedures**

See section C.

**F. Repackaging**

Local cache option for repackaging.

**G. Storage and Shelf Life Checks**

None at this time.

## Storage and Refurbishing Standards

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ITEM: TANK, COLLAPSIBLE, 1,000 GALLON	NFES #0588
TANK, COLLAPSIBLE, 1,200 GALLON	#0090
TANK, COLLAPSIBLE, 1,500 GALLON	#0589
TANK, COLLAPSIBLE, 1,800 GALLON	#0668
TANK, COLLAPSIBLE, 3,000 GALLON	#0568
TANK, COLLAPSIBLE, 4,800 GALLON	#6030
TANK, COLLAPSIBLE, 6,000 GALLON	#6031

### A. Initial Inspection/Disposal Criteria

1. Segregate by NFES #.
2. Check for obvious punctures, cuts, burns, damaged hose couplings, drain plugs, etc.

### B. Tests

1. Determine that all plugs are present and in good serviceable condition.
2. Secure tank to forklift with a chain of proper size to bear the weight of the tank. Mark all punctures, cuts, etc., while forklift or hoist suspends tank. This allows light to be seen through any obvious problem areas.

### C. Refurbishing Procedures

1. Repair or replace any damaged plugs or couplings.
2. Clean entire tank with soapy water inside and out. Rinse well with clear water from high-pressure washer.
3. Allow to air dry on both sides.
4. Patch or repair any damaged areas previously noticed.

### D. Retesting Criteria

1. Suspend tank again so that any holes can be spotted while looking towards light.
2. Refer to section C. If holes are found, patch and recheck.

### E. Cleaning Procedures

See section C.

### F. Repackaging

1. Fold or roll tank as tightly as possible, secure with plastic banding or rope to keep from unrolling.
2. Local cache option for repackaging and labeling.
3. Suggest using NFES #0500 for packing NFES #0589, #0668, #0568.

### G. Storage and Shelf Life Checks

None at this time.

**ITEM: TANK, FOLDING, 1,000 GALLON  
TANK, FOLDING, 1,500 GALLON**

**NFES #0661  
#0664**

**A. Initial Inspection/Disposal Criteria**

1. Frame broken or bent beyond repair. Dispose of frame.
2. Liner seam has separation. Dispose of liner.
3. Liner has tears larger than 3 inches. Dispose of liner.
4. More than 12 patches on liner. Dispose of liner.
5. Two or more grommets are missing in succession and new grommets cannot be used, due to damage of area. Dispose of liner.

**B. Tests**

Verify hinges operate smoothly.

**C. Refurbishing Procedures**

1. Straighten frame.
2. Check welds for cracks and separation. Repair as needed.
3. Remove rust, paint as needed.
4. Lubricate hinges with appropriate lubricant.
5. Check liner seam to verify no separations exist.
6. Check for holes and tears, patch, or shoe goo small holes.
7. Check liner to ensure that it is properly attached to frame through each grommet. The use of cable ties or 1/4-inch nylon rope is recommended. Ensure that ties and ropes are secure. No damage or fraying. Replace or tighten as necessary. When using cable ties, use one per grommet and utilize large cable ties at corner and midpoints. Use smaller ties in all other grommets. When using rope, secure one end to the frame. Then using a lacing motion, go through the grommet, then over the frame and back through the next grommet. Continue this motion until entire liner is attached to frame. Secure end.
8. Fold the tank ensuring that liner is not pinched during process. Only a minimum, if any, amount of liner is to extend outside the metal frame.

**D. Retesting Criteria**

None.

**E. Cleaning Procedures**

Use warm soapy water and scrub brushes to clean the frame and liner. A steam cleaner can be used in conjunction with brushes.

**F. Repackaging**

1. Once folded and stenciled:
  - a. Band 1,000-gallon tank near both ends.
  - b. Band 1,500-gallon tank in middle and at both ends.

**G. Storage and Shelf Life Checks**

None at this time.

## Storage and Refurbishing Standards

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**ITEM: TANK, PROPANE, FUEL, LPG, 20# TANK (5 GALLON)**

**NFES #0491**

### **A. Initial Inspection/Disposal Criteria**

1. Visual inspection for rust, dents, punctures, broken valves, and valve handle. Look for weak or broken handle.
2. Confirm test date on propane tank (must be recertified, [hydrostatic testing] 12 years from manufacturer date and every 5 years after the first recertification).
3. Verify handle type to ensure that tank meets current specifications for “OPD” valve.  
See appendix L for information.

### **B. Tests**

1. Apply soapy water to valve area.
2. Watch for bubbles indicating leaks.
3. Tag immediately for repair or remove from service.

### **C. Refurbishing Procedures**

1. Repair or replace defective valves and broken handles.
2. Power wash tank, let dry, and repaint if necessary.
3. Ensure warning labels are visible and replace if necessary.
4. Install plastic cap or plug in valve opening if missing.
5. All repairs will be done by an authorized facility.
6. Ensure valve is in “OFF” position before packaging.

### **D. Retesting Criteria**

Check valve to ensure it is in “OFF” position before issuing.

### **E. Cleaning Procedures**

Completed in section C.

### **F. Repackaging**

1. Place on pallets and shrink wrap or tie with cord to ensure tanks do not fall or tip over.
2. Store in secured (no smoking) area; tanks will vent fumes when they get hot.
3. Attempt to store out of sun.

### **G. Storage and Shelf Life Checks**

Refer to Health & Safety Handbook, OSHA, NFPA, and local direction.

**ITEM: TEES, HOSELINE, ALL**

**NFES #0230, #0731, #1809, #2240**

**A. Initial Inspection/Disposal Criteria**

1. Check for obvious damage.
2. Check for buffs.
3. Check tail gasket.
4. Ensure that 1-inch valve is seated properly (NFES #0230).

**B. Tests**

None.

**C. Refurbishing Procedures**

Replace gasket if missing, cracked, or stiff.

**D. Retesting Criteria**

None.

**E. Cleaning Procedures**

1. Clean in dishwashing detergent with a brush or scouring pad.
2. Rinse thoroughly.
3. Stand upright to dry.

**F. Repackaging**

Pack 10 each NFES #0230 in carton (cache option) or 60 each in carton (cache option) and label accordingly.  
Pack 10 each NFES #0731 in carton (cache option) or 60 each in carton (cache option) and label accordingly.  
Pack 10 each NFES #1809 in carton (cache option) or 60 each in carton (cache option) and label accordingly.  
Pack 10 each NFES #2240 in carton (cache option) or 60 each in carton (cache option) and label accordingly.

**G. Storage and Shelf Life Checks.**

None at this time.

## Storage and Refurbishing Standards

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ITEM: TENT, WALL, 14' x 16'

NFES # 0084

### A. Initial Inspection/Disposal Criteria

1. Nonstandard item.
2. Rips and tears (uneconomical to repair).
3. Mildew present.

**NOTE: The cache manager will determine when repair is economical. This decision will depend on available repair facilities and replacement parts.**

### B. Tests

None.

### C. Refurbishing Procedures

1. Completely unfold tent on clean, dry floor or work area so that any defects (tears, burns, mildew, etc.) will be visible.
2. Sweep off entire tent with stiff-bristle broom.
3. Repair any rips, tears, or other defects at this time if possible. If repairs cannot be made easily and cost effectively, continue to clean tent and tag it for repair. Replace missing or damaged guy ropes (1/4 inch by 8 foot manila rope) and ridge lines (1/4 inch by 12 foot manila rope) and replace missing or damaged grommets with proper size grommets.
4. Wash tent as necessary.
5. Let dry and fold tent with guy ropes in the center of folding.

### D. Retesting Criteria

None.

### E. Cleaning Procedures

See section C.

### F. Repackaging

Place 1 each tent in carton NFES #0523 and label accordingly.

### G. Storage and Shelf Life Checks

None at this time.

**ITEM: TENT, 2 PERSON**

**NFES #0077**

**A. Initial Inspection/Disposal Criteria**

**CHECK TENTS IMMEDIATELY UPON RECEIPT AT CACHE FOR MOISTURE. WET TENTS WILL MOLD QUICKLY; SOME MOLD SMELLS ARE IMPOSSIBLE TO REMOVE.**

1. Tent body and fly.
  - a. Any tears, holes, burns, or unraveled seams that are not economically repairable.
  - b. Any mold or other stains.
  - c. Any zipper that does not provide adequate closure.
  - d. Any missing stretch cords or plastic hooks missing on rain fly.
2. Poles or stakes.
  - a. Cracked or broken poles.
  - b. Cracked or broken hinge joints.
  - c. Bent, broken, or mushroomed tops of stakes.

**NOTE: The cache manager will determine when repair is economical. This decision will depend on available repair facilities, and replacement parts.**

**B. Tests**

1. Set up the tent with the fly; check hinge joints for smooth operation.
2. Open and close all zippers ensuring adequate closure.
3. Check stretch cords and plastic clips for cracks and frays.

**C. Refurbishing Procedures**

1. Repair holes, tears, and seams.
2. Replace damaged zippers.
3. Replace nonfunctioning hardware.
4. Remove dirt from stakes with wire brush, straighten and file off burrs.

**D. Retesting Criteria**

1. Set up tent with the fly. Check hinge joints for smooth operation.
2. Open and close all zippers ensuring adequate closure.

**E. Cleaning Procedures**

1. For dirt and light stains, use warm soapy water. Wipe or brush out stain, rinse with clean water, and air dry.
2. For heavy stains, machine wash warm, permanent press. Air dry. A steam cleaner on low will also work.
  - a. Provide enough weight in tent so that winds will not blow tent away.

**F. Repackaging**

- Place clean tent into tent bag and secure.
- Pack 6 each tents in carton (cache option) and label accordingly.

**G. Storage and Shelf Life Checks**

- Check periodically for dampness.

## Storage and Refurbishing Standards

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**ITEM: TIP, APPLICATOR - 3 GPM  
TIP, APPLICATOR - 15 GPM**

**NFES #0735, #0736  
#0736**

### **A. Initial Inspection/Disposal Criteria**

Check for obvious damage:

1. Check for buns.
2. Check for tail gasket (correct or not correct). Replace if needed.
3. Check for cracks.
4. Bad threads.
5. Look through tip; if clogged, clean out. Take out disk to clean out on spray tips.

### **B. Tests**

1. Attach to hose.
2. Turn on water and ensure that adequate flow and pattern are attained.

### **C. Refurbishing Procedures**

None.

### **D. Retesting Criteria**

None.

### **E. Cleaning Procedures**

1. Wash and clean all items of foreign matter (i.e., mud, dirt, and grease).
2. High-pressure wash or clean in dishwashing detergent with a brush or scouring pad as needed.
3. Do not soak for extended periods of time or the detergent will corrode the aluminum.
4. Rinse thoroughly.
5. Stand upright to drain water and dry.

### **F. Repackaging**

Place 10 each NFES #0735 in carton (cache option) or 60 each in carton (cache option) and label accordingly.  
Place 10 each NFES #0736 in carton (cache option) or 60 each in carton (cache option) and label accordingly.

### **G. Storage and Shelf Life Checks**

None at this time.

ITEM: TOOL, AXE, SINGLE BIT  
TOOL, AXE, BOYS

NFES #0707  
#0352

Check local Job Hazard Analysis for proper personnel protective equipment required when refurbishing this item.

**A. Initial Inspection/Disposal Criteria**

1. Obvious damage to head, cutting edges.
2. Large chips in blade.
3. Cracked head eye.
4. Dispose if any modifications to head, such as rivets through side of head to hold handle.

**B. Tests**

1. Head.
  - Blades have not been tapered or rounded to point that tool cannot be sharpened properly.
  - See cache memo 02-7, appendix M.
2. Handle.
  - a. Twisted, bent, or open-grain handle.
  - b. Cracks, or suspect based on sound of hammer rap on end of handle. Sharp ringing sound is good. Dull thud sound is suspect, or pressure application to side of handle.
  - c. Head loose on handle.
  - d. Tape residue, or other residue (tar, sap, etc.).
  - e. Head is loose and/or contains metal wedges.

**C. Refurbishing Procedure**

1. Head.
  - a. Clean head.
  - b. Sharpen tool to specifications according to tool sharpening gauge.
    - CAUTION—Tool should never be ground to the degree that the metal temperature rises high enough to remove temper, i.e., blue or burned edges.**
  - c. Ensure that blade corners are square.
  - d. Paint tool head with rust inhibitor.
2. Handle.
  - a. Visually check handle.
  - b. Sand handle if it is rough, chipped, dinged, or has any type of residue that did not come off during sanding.
  - c. When replacing handle, shape eye for a snug fit. Use high impact plastic or wood-type wedges with appropriate type of epoxy.
  - d. The bottom of the tool head should be within 3/8 inch to 5/8 inch of the shoulder of the handle.
  - e. Cut excess off handle, flush with tool head after inserting wedge into handle.
  - f. Wipe handle with rag and linseed oil.

**NOTE: Metal wedges can be added only in the field as an emergency measure for field refurbishing.**

**D. Retesting Criteria**

None.

**E. Cleaning Procedures**

See section C.

## Storage and Refurbishing Standards

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### **F. Repackaging**

1. For NFES #0707 (no sheath available).  
Package 10 each in carton NFES #0338; 37 inch by 18 inch by 8 inch (NSN 8115-00-139-0673).
2. For NFES #0352 install leather sheath NFES #0359.  
Package 10 each in appropriate size carton (until an appropriate size is found).

### **G. Storage and Shelf Life Checks**

Per local cache requirements to ensure proper serviceability of tools.

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**ITEM: TOOL, COMBINATION****NFES #1180****A. Initial Inspection/Disposal Criteria**

**Check local Job Hazard Analysis for proper personnel protective equipment required when refurbishing this item.**

Obvious structural damage to pick, hoe blade or both that cannot be repaired by replacing components.

1. Pick replacement:
  - a. If bent or twisted.
  - b. If shorter than 4 1/2 inches long in extended position.
  - c. If cracks exist around hinge bolt hole or if hinge bolt hole is enlarged.
2. Hoe blade replacement:
  - a. If there are cracks or looseness in the area of the hinge leg rivets.
  - b. If hinge leg bolt hole is enlarged or cracked.
  - c. If shorter than 6 inches. Measure from turn step to blade tip.
3. Handle replacement:
  - a. Cracked, bent, twisted, or has open grain.
  - b. Has been shortened (except for detachable handle smokejumper version, which has a 4-inch shorter handle).
  - c. Has a nonstandard handle. Order replacement handles from GSA; NSN 5120-01-296-3592. Use a number 6 by 1-13/16-inch long steel rivet that can be purchased from many well stocked retail and wholesale hardware outlets.

**B. Tests**

1. Extend hoe blade and pick at right angles to tool handle.
2. Tighten friction nut (wear gloves). Move blade and pick up and down and further tighten friction nut. Refer to: Combi Tool Maintenance Instructions, March 1989, MTDC Publication 89-9.
3. Repeat process to ensure that the blade and pick can be maintained tight by the friction nut.
4. If friction nut does not turn freely, flush with water. Blow clean with air gun. (Wear safety glasses).
5. If tool head cannot be tightened, check hinge leg surface contact with friction nut. Remove hinge leg bolt, grind blade or pick hinge legs as needed so they meet flush with friction nut. Refer to MTDC 89-9.
6. Replace friction nut if defective.

**C. Refurbishing Procedures**

1. Head.
  - a. Clean head and friction nut. See Section B.
  - b. Sharpen both blade and pick at 45 degree angle per hand tool.
  - c. Optional finish: paint hoe blade and pick with a rust inhibitor.
2. Handle.
  - a. Clean handle.
  - b. Tighten handle in ferrule by peening, as described in MTDC 89-9.
  - c. Sand handle if chipped, dinged, rough, or has tape or other residues.
  - d. Optional finish: wipe with linseed oil.

**D. Retesting Criteria**

None.

**E. Cleaning Procedures**

See Section B.

## Storage and Refurbishing Standards

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### **F. Repackaging**

1. Modify and install plastic sheath (NSN 8465-00-001-6474). Modification instructions are contained in Equip Tips The Combi-A New Firefighting Hand Tool, February 1988, available from MTDC.

Order sheaths from:

Defense Personnel Support Center  
2800 South 20th Street  
Philadelphia, PA 19101-8419  
Route Identifier S9T.

2. Package 10 each in carton NFES #0384, 46 inch by 11 inch by 8 inch (NSN 8115-01-307-2951).

### **G. Storage and Shelf Life Checks.**

Per local cache requirements to ensure proper serviceability of tools.

**ITEM: TOOL, COUNCIL**

**NFES #1807**

**Check local Job Hazard Analysis for proper personnel protective equipment required when refurbishing this item.**

**A. Initial Inspection/Disposal Criteria**

1. Inspect handles for cracks, splinters, and warping.
2. Check cutting teeth for cracks, excessive wear.
3. Check for loose rivets.
4. Check mounting head for cracks, loose handles.

**B. Tests**

1. Apply pressure on handle, checking for cracks or splinters overlooked in visual inspection.
2. Hand check each cutter tooth for loose rivets.

**C. Refurbishing Procedures**

1. Replace broken, cracked, or splintered handles.
2. Replace broken or cracked tooth, flat surface inside.
3. Tighten loose rivets.
4. Grind on even bevel, use sickle stone.
5. Retain square point on cutter teeth.

**6. DO NOT ROUND CORNERS.**

- a. Paint toolhead with rust inhibitor.
7. Keep handle smooth with fine sandpaper.
8. Additional standards in Firefighter's Guide.

**D. Retesting Criteria**

None.

**E. Cleaning Procedures**

1. Clean head with fine wire brush.
2. Clean handle with damp cloth.

**F. Repackaging**

1. Oil cutting edge.
2. Sheath with NFES #1854 McLeod sheath.
3. Package 10 each in carton NFES #0305; 56 inch by 20 inch by 11 inch; (NSN 8115-00-139-0690).

**G. Storage and Shelf Life Checks**

Per local cache requirements to ensure proper serviceability of tools.

## Storage and Refurbishing Standards

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**ITEM: TOOL, FIRE SWATTER**

**NFES #1868**

Check local Job Hazard Analysis for proper personnel protective equipment required when refurbishing this item.

### **A. Initial Inspection/Disposal Criteria**

1. Inspect handle, flapper, and metal that connect the two parts.
2. Dispose of if handle is cracked or broken, flapper has large chunks missing, or is badly weathered.

### **B. Tests**

1. Push down on handle to check for strength, cracks.
2. Look down length of handle to check for warping.
3. Ensure that connection between handle and flapper is in good condition.

### **C. Refurbishing Procedures**

1. Check handle for roughness.
2. Sand down handle until smooth if necessary.
3. Visually inspect flapper condition.

### **D. Retesting Criteria**

None

### **E. Cleaning Procedures**

Wire brush and wash any mud and residue off handle and flapper.

### **F. Repackaging**

1. Cache option for repacking swatters in bundles of 5 or 10 and plastic wrap the handles into group.
2. Store in this condition (at this time tool is not boxed).

### **G. Storage and Shelf Life Checks**

Per local cache requirements to ensure proper serviceability of tools.

**ITEM: TOOL, HOE, ADZE**

NFES #1396

Check local Job Hazard Analysis for proper personnel protective equipment required when refurbishing this item.

**A. Initial Inspection/Disposal Criteria**

1. Modification to head, such as rivets through side of head to hold handle.
2. Cracked, damaged, or improper length of handle. Dispose of handle.
3. Nonstandard handle. Dispose of handle.
4. Tool head bent, twisted, or cracked.

**B. Tests**

1. Heads are within specification. Not taped or rounded beyond sharpening to gauge standards.
2. Head is not twisted or bent.
3. Handle is tight. Check by pulling tool head away from handle.
4. No metal wedges in handle.

**C. Refurbishing Procedures**

1. Check handle tightness. If loose, drive the handle into the head using a 4-pound blacksmith hammer and pound on the long planed side of toolhead. Use wooden wedges between handle and toolhead to provide more area of wood for proper tightness. When tight, drive nails into handle on underside of toolhead to lock head into position, one nail to each side of handle on the long plane of head. Handle is to be flush and is not to exceed 3/8-inch protrusion from toolhead.
2. With head tight, sand blast the head to remove all foreign objects, such as dirt, burrs, rust, etc.
3. Sharpen grubbing edge to specifications according to tool sharpening gauge. Ensure that blade corners are square. Remove all burrs with a hand file. Check with template gauge.

**CAUTION: Tool should NEVER be ground to the degree that the metal temperature rises high enough to remove temper, i.e., blue or burned edges.**

4. Check handle for proper length, cracks, and chips.
5. Sand handle if it is chipped, dinged, rough, or has other residue.
6. With handle, smooth, apply linseed oil to handle only. Remove all excess oil.
7. Apply rust inhibitor to the toolhead.

**D. Retesting Criteria**

Recheck handle tightness.

**E. Cleaning Procedures**

1. Remove all excess linseed oil from handle.
2. Check toolhead for any contaminants, i.e., dirt, metal filings, etc.

**F. Repackaging**

1. Apply protective sheath to blade edge. (Sheath is to be made by cache warehouse person using rejected fire hose.)
2. Package 10 each in carton NFES #0338; 37 inch by 18 inch by 8 inch (NSN 8115-00-139-0673).

**G. Storage and Shelf Life Checks**

Per local cache requirements to ensure proper serviceability of tools.

## Storage and Refurbishing Standards

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ITEM: TOOL, McLEOD

NFES #0296

Check local Job Hazard Analysis for proper personnel protective equipment required when refurbishing this item.

### A. Initial Inspection/Disposal Criteria

1. Obvious damage to cutting edge, rake fingers, and handle.
  - a. Broken blade.
  - b. Loose head.
  - c. Missing or severely bent fingers.
  - d. Short or nonstandard handle.

### B. Tests

1. Head.
  - a. Blade to be at least 10 to 14 inches wide from handle base.
  - b. Handle base not tilted, bent, or distorted.
  - c. Blade ends have not been rounded or severely tapered so that they cannot be ground to specifications.
  - d. Proper angle of cutting edge as per tool sharpening gauge NFES #0510.
2. Handle.
  - a. Check that handle is straight.
  - b. Check for cracks, chips, or open grain.
  - c. Head loose on handle (loose or missing rivets).
  - d. Tape residue, or other residue (tar, sap, etc.).

### C. Refurbishing Procedures

1. Head.
  - a. Remove dirt and grime from head with wire brush or hose.
  - b. Square up blade if necessary.
  - c. Paint toolhead with rust inhibitor.
  - d. Sharpen cutting edge 1/8-inch wide at 50° angle. Ensure that blade corners are square.
  - e. Check large nut on head and tighten or replace as needed.
2. Handle.
  - a. Sand handle if it is chipped, dinged, rough, or has any type of residue.
  - b. Wipe handle with rag and linseed oil.

### D. Retesting

None.

### E. Cleaning Procedures

See section C.

### F. Repackaging

1. Install plastic sheath NFES #1854.
2. Package 10 each in carton NFES #0305; 56 inch by 20 inch by 11 inch; (NSN 8115-00-139-0690).

### G. Storage and Shelf Life Checks

Per local cache requirements to ensure proper serviceability of tools.

**ITEM: TOOL, PULASKI**

NFES #0146

Check local Job Hazard Analysis for proper personnel protective equipment required when refurbishing this item.

**A. Initial Inspection/Disposal Criteria**

1. Obvious structural damage to cutting edges or head.
2. Dispose of tool if modifications have been made to head, such as rivets through side of head to hold handle.

**B. Tests/Inspections**

1. Head.
  - a. Head is within specifications as per gauge.
  - b. Grubbing end is not bent/twisted.
  - c. Blade or grubbing hoe ends have not been tapered, or rounded to point the tool cannot be sharpened to meet gauge standards.
2. Handle replacement.
  - a. Twisted, bent, or open grain.
  - b. Cracks, or suspect based on sound of hammer rap on end of handle (sharp ringing sound is good; dull thud sound is suspect), or pressure application to side of handle.
  - c. Head is loose and/or contains metal wedges.
  - d. Handle has been shortened.
  - e. Nonstandard handle.

**C. Refurbishing Procedures**

1. Head.
  - a. Clean head.
  - b. Sharpen tool to specifications as per tool sharpening gauge NFES #0510. Ensure that blade corners are square.

**CAUTION: Tool should NEVER be ground to the degree that the metal temperature rises high enough to remove temper, i.e., blue or burned edges.**

- c. Optional finish-paint toolhead with a rust inhibitor.
2. Used handles.
  - a. Clean handle.
  - b. Sand handle if it is chipped, dinged, rough, or has tape or other residues.
  - c. Optional finish-linseed handles.
3. New handles.

Local replacement-utilize NFES #1857 handle with plastic wedge or wood wedges secured using epoxy of appropriate type.
4. Metal wedges can be added only in the field as an emergency measure for field refurbishing.

**D. Retesting Criteria**

None

**E. Cleaning Procedures**

See section C.

**F. Repackaging**

1. Install plastic sheath NFES #0257.
2. Package 10 each in carton NFES #0338; 37 inch by 18 inch by 8 inch; (NSN 8115-00-139-0673).

**G. Storage and Shelf Life Checks**

Per local cache requirements to ensure proper serviceability of tool.

## Storage and Refurbishing Standards

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ITEM: TOOL, SHOVEL

NFES #0171

Check local Job Hazard Analysis for proper personnel protective equipment required when refurbishing this item.

### A. Initial Inspection/Disposal Criteria

1. Obvious damage to cutting head, step plate, and handle.
2. Loose head, severely rounded, distorted or bent blade.
3. Blade less than 3 3/4 inch from center to edge on both sides.
4. Blade has been modified by improper grinding or filing, such as modification of step plate.
5. Short or nonstandard handle.

### B. Tests/Inspections

1. Head.
  - a. Blade distortion or bent.
  - b. Blade to be at least 7 1/2 inch wide.
  - c. Shank not bent or handle base tilted.
  - d. Blade tip that has been severely rounded.
2. Handle.
  - a. Check that handle is straight.
  - b. Check for cracks, chips, or open grain.
  - c. Tape residue, or other residue (tar, sap, etc.).

### C. Refurbishing Procedures

1. Head and handle.
  - a. Wash and wipe dry.
  - b. Sand handle if it is rough, chipped, dinged, or has any type of residue.
  - c. Sharpen cutting edge using tool sharpening gauge NFES #0510.

**Caution: Tool should NEVER be ground to the degree that the metal temperature rises high enough to remove temper, i.e., blue or burned edges.**

- d. Paint toolhead with rust inhibitor.
- e. Wipe handle with rag and linseed oil.

### D. Retesting Criteria

None.

### E. Cleaning Procedures

See section C.

### F. Repackaging

1. Install plastic sheath NFES #1853.
2. Package 10 each in carton NFES #0337; 55 inch by 12 inch by 11 inch; (NSN 8115-00-139-0689).

### G. Storage and Shelf Life Checks

Per local cache requirements to ensure proper serviceability of tools.

**ITEM: TORCH, DRIP**

**NFES #0241**

**A. Initial Inspection/Disposal Criteria**

1. Tank is dented to point leakage occurs.
2. Lock ring will not seal due to thread damage.
3. Salvage usable component parts.

**B. Tests**

**CAUTION: Remove any residual fuel before testing and dispose of according to local hazardous materials regulations.**

Visually inspect tank for cracks, splits, and obvious damage that may cause tank to leak.

**C. Refurbishing Procedures**

1. Steam clean or wash with mild degreaser soap, rinse with clean water, check for and remove any scab deposits inside tank.
2. Replace igniter if screen is ruptured, crushed, or tiller is burned out or carbonized. Some carbonization can be cleaned with wire brush.
3. Tighten screw that holds igniter and screen in place.
4. Ensure that discharge plug and chain are attached to tank cover assembly.
5. Install discharge plug into tank cover assembly.
6. Thoroughly dry all components with clean rag and air hose.
7. Insert spout into tank and tighten lock ring.

**D. Retesting Criteria**

None, other than section B, if required.

**E. Cleaning Procedures**

See section C.

**F. Repackaging**

Package 1 each in 8 inch by 8 inch 16 inch carton. (NSN 8115-00-079-8693).

**G. Storage and Shelf Life Checks**

None at this time.

### ITEM: VALVE, AUTO CHECK AND BLEEDER

NFES #0228

#### A. Initial Inspection/Disposal Criteria

Visually inspect.

1. Inspect for missing parts (valves, plugs, and gaskets).
2. Inspect handle.
3. Inspect threads.

#### B. Tests

1. Pressure testing.
  - a. Install valve on test pump.
  - b. Fill with water; close handle.
  - c. Attach caps or nozzle for testing.
  - d. Test for leaks at 250 psi.
    - (1) Check for leaks around female coupling.
    - (2) Check for leaks around male flange.
    - (3) Check for leaks under top of handle shaft.
    - (4) Check for leaks on bottom end of handle shaft.
    - (5) Check for leaks in casing.
    - (6) Repair if valve is found defective.
    - (7) Ensure that the check valve (flapper) is operational.

#### C. Refurbishing Procedures

Replace missing or damaged parts (O-ring, gasket, and handle).

#### D. Retesting Criteria

Retest after repair.

#### E. Cleaning Procedures

1. Wash and clean all items of foreign matter, such as mud, dirt, and grease.
2. Rinse thoroughly.
3. Stand upright to drain and dry.
4. Lubricate with appropriate dry lubricant such as graphite.
  - a. Female coupling.
  - b. Wipe off excess.

#### F. Repackaging

Package 10 each in carton (cache option) and label accordingly.

#### G. Storage and Shelf Life Check

None at this time.

**ITEM: VALVE, PRESSURE RELIEF, 1-1/2" NH-F**

**NFES #0229**

**A. Initial Inspection/Disposal Criteria**

Visually inspect.

1. Inspect for missing parts.
2. Inspect handle.
3. Inspect threads.

**B. Tests**

1. Pressure testing.
  - a. Install valve on test pump.
  - b. Close handle.
  - c. Attach cap or nozzle for testing.
  - d. Test for leaks at 250 psi.
    - (1) Check for leaks around female coupling.
    - (2) Check for leaks under top of handle shaft.
    - (3) Check for leaks on bottom end of handle shaft.
    - (4) Check for leaks in casing.

**C. Refurbishing Procedures**

Replace missing or damaged handle.

**D. Retesting Criteria**

Retest after repair. See section B.

**E. Cleaning Procedures**

1. All items will be washed and cleaned of foreign matter, such as mud, dirt, and grease.
2. Rinse thoroughly.
3. Stand upright to drain and dry.

**F. Repackaging**

Package 10 each in carton (cache option) and label accordingly.

**G. Storage and Shelf Life Checks**

None at this time.

## Storage and Refurbishing Standards

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**ITEM: VALVE, SHUTOFF, BALL**

**NFES #1201, #1207, #0738**

### **A. Initial Inspection/Disposal Criteria**

Check for obvious damage:

1. Check for buffs.
2. Check tail gasket.
3. Must turn freely.
4. Fire damage.

### **B. Tests**

1. Tail gasket:
  - a. Replace if missing.
  - b. In good condition, not cracked or stiff.
  - c. Must be seated properly.
2. Install valve on test pump.
3. Close valve and turn on water to valve.
4. Open valve to expel air then close valve.
5. Turn on pump to 250 psi.
  - a. NFES #1201 and NFES #1207.
  - b. NFES #0738 test at 100 psi.
6. Check for leaks.
  - a. Around the tail gasket.
  - b. At the handles.
  - c. If valve leaks, dispose through local procedures.

### **C. Refurbishing Procedures**

Replace cracked or missing tail gasket.

### **D. Retesting Criteria**

None.

### **E. Cleaning Procedures**

1. Wash and clean all items of foreign matter, such as mud, dirt, and grease.
2. High pressure wash, or clean in a dishwashing detergent with brush or scouring pad as needed.
3. Do not soak for extended periods of time or the detergent will corrode the metal.
4. Rinse thoroughly.
5. Stand upright with barrel in open position to drain water and dry.

### **F. Repackaging**

Pack 10 each in 8 inch by 8 inch by 16 inch carton (NSN 8115-00-079-8693) and label accordingly.

### **G. Storage and Shelf Life Checks**

None at this time.

**ITEM: VALVE, WYE**

**NFES #0259, #0231, #0272**

**A. Initial Inspection/Disposal Criteria**

Check for obvious damage:

1. Handles.
  - a. Bent, if it has a slight bend, replace the handle.
  - b. Broken.
  - c. Missing.
  - d. Too tight.
  - e. Too loose.
  - f. Expansion pins coming out or missing.
  - g. Handles positioned properly.
  - h. Correct handle, left and right.
  - i. Burrs.
2. Male flange, lockring, and setscrews:
  - a. Damaged threads.
  - b. Missing.
  - c. Smooth, flat surface on flange.
  - d. Burrs.
  - e. Loose.
3. Female coupling:
  - a. Coupling spins freely; if not check for wear, replace bearings.
  - b. Tail gasket is present.
  - c. No rough burrs.
4. Casting (body):
  - a. Fire damage, look for further damage, "O" rings.
  - b. Corrosion.
  - c. Cracks.
  - d. Burrs.
5. Plastic sphere  
Inspect sphere while turning handle; if pitted or rough, replace.

**B. Tests**

1. Pressure Testing: (NFES #0259 & NFES #0231 test at 250 psi for 3 minutes)  
(NFES #0272 test 100 psi for 3 minutes)
  - a. Install valve on test pump.
  - b. Close handles.
  - c. Turn on water to valve.
  - d. Open handle to expel air.
  - e. Turn on pump and check valve for leaks.
    - (1) If valve is found to be defective, repair as needed.
    - (2) Retest after repair.

**C. Refurbishing Procedures**

Replace worn, cracked, or missing "O" rings or tail gasket.

**D. Retesting Criteria**

Retest if "O" rings or gaskets are replaced according to section B.

## Storage and Refurbishing Standards

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### E. Cleaning Procedures

1. Wash and clean all items of foreign matter, such as mud, dirt, and grease. High pressure wash or clean in a dishwashing detergent with brush or scouring pad as needed. Do not soak for extended periods of time or the detergent will corrode the metal.
2. Rinse thoroughly.
3. Stand upright with handles in half open position to drain water and dry.
4. Lubricate with appropriate type of lubricant.

### F. Repackaging

- Package 10 each NFES #0231 in carton (cache option) and label accordingly.
- Package 10 each NFES #0259 in carton (cache option) and label accordingly.
- Package 20 each NFES #0272 in carton (cache option) and label accordingly.

### G. Storage and Shelf Life Checks

None at this time.

**ITEM: VALVE, FOOT, 1-1/2" NH-F W/TRAINER**  
**VALVE, FOOT, 2" NPSH W/STRAINER**

**NFES #0212**  
**NFES #0906**

**A. Initial Inspection/Disposal Criteria**

1. Visually inspect.
2. Inspect for missing parts (screws, screen, and adaptor when required).
3. Inspect for damaged threads and gaskets.

**B. Tests**

Ensure that valve assembly functions.

**C. Refurbishing Procedures**

Repair or replace missing parts.

**D. Retesting Criteria**

None.

**E. Cleaning Procedures**

1. All items will be washed and cleaned of foreign matter, such as mud, dirt, and grease.
2. Rinse thoroughly.
3. Stand upright to drain and dry.

**F. Repackaging**

Package 10 each in carton (cache option) and label accordingly.

**G. Storage and Shelf Life Checks**

None at this time.

## Storage and Refurbishing Standards

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**ITEM: WYE, CONNECTION  
WYE, SIAMESE**

**NFES #0839  
NFES #0883**

### **A. Initial Inspection/Disposal Criteria**

1. Check for damage.
2. Tail gasket.
3. Buffs.
4. Damaged threads.
5. Body.

### **B. Tests**

1. Clean threads.
2. Cap male ends.
3. Attach to test pump. Test at 200 psi.
4. Check for leaks.
5. Discard if leaking.

### **C. Refurbishing Procedures**

Replace worn, cracked, or missing tail gasket. Replace tail gaskets if missing, cracked, or stiff.

### **D. Retesting Criteria**

Retest if tail gasket was replaced.

### **E. Cleaning Procedures**

1. Wash to remove all mud, dirt, and grease. High pressure wash or clean in a dishwashing detergent with a brush or scouring pad as needed.
2. Do not soak. Detergent may corrode metal.

### **F. Repackaging**

Package 10 each NFES #0839 in carton (cache option) and label accordingly.  
Package 10 each NFES #0883 in carton (cache option) and label accordingly  
Package 20 each NFES #0739 in carton (cache option) and label accordingly.

### **G. Storage and Shelf Life Checks**

None at this time.