



Fire Protection Training

Procedures Handbook 4300

HANDTOOLS

TOPIC: Pulaski

TIME FRAME: 30 Minutes

LEVEL OF INSTRUCTION:

BEHAVIORAL OBJECTIVE:

Condition: A written quiz

Behavior: The student will identify, describe the basic use, care, maintenance, and safety precautions associated with the Pulaski.

Standard: With a minimum of 70% accuracy

MATERIALS NEEDED:

- A Pulaski with guard
- Student handouts
- Wooden blocks
- Gloves
- File with handle and guard
- Appropriate visual aids
- Audio visual equipment

REFERENCES:

- Wildland Firefighting, Clayton, Day, McFadden, Chapter 6

PREPARATION:

During wildland fires much of the control line is constructed using handtools. The Pulaski is one of the most versatile tools we have at our disposal. In order to effectively use the Pulaski, the firefighter must know its uses, how to maintain it and the safety precautions to be heeded.



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PULASKI

PRESENTATION	APPLICATION
<p>I. PARTS</p> <ul style="list-style-type: none">A. Handle<ul style="list-style-type: none">1. Shoulder2. ButtB. Head<ul style="list-style-type: none">1. Cutting edge2. Grubbing edge3. EyeC. Wedges<ul style="list-style-type: none">1. Wood2. Steel <p>II. BASIC USES</p> <ul style="list-style-type: none">A. Chopping Brush<ul style="list-style-type: none">1. Obtain secure footingB. Grubbing<ul style="list-style-type: none">1. Grubbing edgeC. Trenching and Digging <p>III. CARE AND MAINTENANCE</p> <ul style="list-style-type: none">A. Inspect Tools Before and After Each Use:<ul style="list-style-type: none">1. Handle<ul style="list-style-type: none">a. Smooth	<p>Information sheet #1</p>



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PRESENTATION	APPLICATION
<ul style="list-style-type: none">(1) Sand as necessary(2) Do not apply<ul style="list-style-type: none">(a) Linseed oil(b) Waxb. Straight<ul style="list-style-type: none">(1) Place out of service if<ul style="list-style-type: none">(a) Warped(b) Twisted(c) Not properly aligned with headc. Sound<ul style="list-style-type: none">(1) Free of cracks(2) Free of burnsd. Clean and dry <p>2. Head</p> <ul style="list-style-type: none">a. Free of cracks<ul style="list-style-type: none">(1) If found place out of service(2) Do not paint head<ul style="list-style-type: none">(a) Paint will hide cracksb. Free of burrs or chips<ul style="list-style-type: none">(1) File as necessaryc. Secure	



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<ul style="list-style-type: none">(1) Head is tightly fastened to the handled. Sharp<ul style="list-style-type: none">(1) Cutting and grubbing edges properly sharpened<ul style="list-style-type: none">(a) Use a 12" flat mill bastard file(b) Apply even pressure across full width of the cutting edge. Taper back in an arc 2" at deepest point.(c) Cutting edge even across full width(d) Grubbing edge sharpened to maintain a 3/8" bevel at 45° angle(2) Free of nicks or chips(3) Permissible to treat with a rust inhibitor(4) Tool guard in place whenever tool is not in use	<p>Information sheet #2</p>
<p>IV. SAFETY PRECAUTIONS</p> <p>A. When Using</p> <ul style="list-style-type: none">1. Maintain 10 foot interval2. Maintain firm footing3. Watch for obstructions	

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PRESENTATION	APPLICATION
<ul style="list-style-type: none">a. Overheadb. Within arc of swing4. Wear gloves and full safety uniform<ul style="list-style-type: none">a. Pay particular attention when gloves are wet5. Do not allow head of tool to get too near body6. Concentrate on impact area to:<ul style="list-style-type: none">a. Prevent ricochet or glancing blowb. Avoid rocks and other hard objectsc. Avoid hazards<ul style="list-style-type: none">(1) Beehives(2) Electrical wires(3) Barbed wire7. Pace yourself8. Use proper tool for the jobB. When Carrying<ul style="list-style-type: none">1. Grasp at balance point with head forward2. Carry on downhill side3. Carry horizontally (parallel) to the ground with grubbing edge up4. Sound off when passing another person with "coming through" and wait for that person to yield right of way5. Cutting edge pointing downward and grubbing edge upward	



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<p>C. When Passing</p> <ol style="list-style-type: none">1. Pass handle (butt) first2. At arms length from other person<ol style="list-style-type: none">a. Never toss <p>D. When Grounding Tool</p> <ol style="list-style-type: none">1. Place head of tool toward center of circle with handle outward. Cover with shovel lying flat if alone2. Shield the head of the tool to the extent possible<ol style="list-style-type: none">a. Use tool guards whenever practicable3. Place all crew tools in the same area <p>E. When Sharpening</p> <ol style="list-style-type: none">1. Secure tool in vise<ol style="list-style-type: none">a. Utilize wooden blocks orb. Newman tool holder2. Use gloves3. Use file with handle and a file guard in place4. Rest the palm of the hand on the tip of the file<ol style="list-style-type: none">a. Do not wrap the fingers over the tip of the file5. Sharpen in a motion away from the body6. Remove tools from the vise if leaving the area7. Make visual check for sharpness, don't run finger across blade	



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<p>F. When Storing</p> <ol style="list-style-type: none">1. Store in a clean, cool, dry area2. Store in a secure area or in the proper compartment3. Separate in-service and out-of-service tools4. Always keep the tool guards in place5. Secure tools properly in tool racks <p>V. REHANDLING</p> <p>A. Removing Handle Not Secured With Epoxy</p> <ol style="list-style-type: none">1. Secure head in vise<ol style="list-style-type: none">a. Use wood blocks to protect head2. Saw off handle next to head3. Drill holes through wood remaining in axe head (use 1/4" bit)4. Drive out remaining wood in direction it was inserted <p>B. Installing Handle Without Epoxy</p> <ol style="list-style-type: none">1. Inspect eye for cracks, breaks, or burrs<ol style="list-style-type: none">a. Discard head if cracked2. Check new handle for defects, warp, twists, etc.3. File down neck of handle with coarse wood rasp to fit eye of Pulaski head.<ol style="list-style-type: none">a. Shoulder not to exceed 1/2"	



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<ul style="list-style-type: none">4. If not already provided, saw slit for wooden wedge 2/3 the depth of the head5. Fit handle into eye of head<ul style="list-style-type: none">a. Should have no gaps between handle and eye of headb. Check for proper alignment of head (90o to handle)c. When fitting head, never pound directly on head with metal hammer6. Drive soft wood wedge into slit as far as possible (avoid splitting handle)7. Saw off excess wedge with hacksaw and file smooth8. Drive two metal wedges (#4 or #5) at a 45o angle to the wooden wedge, being careful not to spread eye9. Check for tightness by putting axe in vise (using head blocks) with handle horizontal and try to move handle up or down10. Sight down handle for alignmentC. Removing Handle Secured With Epoxy<ul style="list-style-type: none">1. Saw off handle next to head2. Boil head 20 to 30 minutes3. Drive out handle with punch while still hot4. Clean eye with wire brush and sandpaper5. Wipe head with solvent rag and air dryD. Installing Handle With Epoxy	



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<ol style="list-style-type: none">1. Check head for cracks2. Shape handle to fit eye using coarse wood rasp, finish with fine rasp3. If not provided on new handle, saw slit for wedge 2/3 the depth of head4. Mix epoxy according to manufacturer's instructions and apply to surfaces to be bonded5. Drive handle into place6. Using polystyrene high impact wedge, coat with epoxy and drive into slit of handle (avoid splitting handle)7. Allow epoxy to completely harden8. Saw off excess handle and dress with a coarse file9. Remove excess epoxy with a wire wheel brush	



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SUMMARY:

The Pulaski is one of the most versatile wildland fire suppression handtools. It can be used for cutting, trenching, digging, grubbing, and forcible entry. In order to effectively use a Pulaski, the firefighter must be familiar with its uses, how to maintain it, and the safety precautions to be taken.

EVALUATION:

A written quiz.

ASSIGNMENT:

To be determined by instructor(s).