



Fire Protection Training

Procedures Handbook 4300

VEGETATION FIRES

TOPIC: Mop Up and Patrol

TIME FRAME: 2 Hours

LEVEL OF INSTRUCTION:

BEHAVIORAL OBJECTIVE:

Condition: A written quiz

Behavior: The students will list and describe the importance and methods of mop up and patrol operations.

Standard: With a minimum of 70% accuracy

MATERIALS NEEDED:

- Appropriate visual aids
- Audio visual equipment

REFERENCES:

- CDF, Principles of Forest Fire Management, Clar and Chatten
- USFS, Water vs. Fire Booklet
- USFS, CDF, Forest Fire Fighting Fundamentals Booklet
- Forest Fire: Control and Use, Kenneth P. Davis
- USFS, Fireman's Guide
- Wildfires, Prevention and Control, Harry P. Gaylor
- IFSTA, Ground Cover Fire Fighting Practices, 2nd Edition, Chapter 4
- Wildland Fire Fighting, Clayton, Day, McFadden

PREPARATION:

The mop up and patrol stages of firefighting are extremely important and must be taken seriously. Spot fires, flare-ups, and slopovers can occur in these stages just as in the attack stage. Keep in mind that initially a small ember or flame started the fire you may be assigned to mop up and patrol. An escape or a rekindle can be just as dangerous and damaging as the original fire.



Fire Protection Training

Procedures Handbook 4300

MOP UP AND PATROL

PRESENTATION

APPLICATION

I. MOP UP

A. Defined

1. The act of making a fire safe after it has been confined
 - a. May be the applicable stage for only a segment of the fire perimeter on a large fire
 - b. May apply to the entire fire on a small fire

B. Mop Up Operations

1. Seeking out and taking action on spot fires as yet undiscovered
2. Finally extinguishing all burning material along or near the control line
 - a. May mop up for a designated distance (e.g. 100 feet) from the line
 - b. May mop up the entire fire
 - c. Extent of mop up determined by:
 - (1) Fuels involved
 - (2) Weather condition
 - (3) Topography
 - (4) Size of fire
 - (5) Resource availability
3. Felling snags or burning trees

Information sheet #1

Information sheet #2

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Page 2



Fire Protection Training

Procedures Handbook 4300

MOP UP AND PATROL

PRESENTATION	APPLICATION
<ul style="list-style-type: none">a. All snags and burning trees within the control lines which could potentially spot across the lineb. All snags and burning trees which could potentially fall and roll across the linec. All snags and burning trees which could present a safety hazard to firefighters or the general public if left standingd. All snags outside control lines which may be a receptive fuel bed for firebrandse. Where conditions warrant clear a bed to mineral soil prior to falling snag into the bed<ul style="list-style-type: none">(1) Especially where burning snag will fall into the green<ul style="list-style-type: none">(a) Across the control line(b) Into an island within the control line <p>4. Removing or repositioning heavy fuels inside control lines</p> <ul style="list-style-type: none">a. Place fuels with rolling potential where they will not cross control lines<ul style="list-style-type: none">(1) Long axis of the fuel parallel to the slope of the hill(2) Push/move well back into the burn and let fuel burn itself outb. Scatter fuels which are too concentrated to eliminate hotspots along the control line	<p>Information sheet #3</p>



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MOP UP AND PATROL

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<ul style="list-style-type: none">(1) Minimize threat of spotting across the control line(2) Prevents mutual heat exchange between concentrated burning fuelsc. In some conditions, piling burning fuels may be desirable to expedite the burning process and cut down on total mop up time (no winds, high humidities, nighttime perhaps)5. Trenching<ul style="list-style-type: none">a. Undercut lines, if not already done, to prevent rolling burning material from carrying fire into the greenb. Heavy fuels within the burn to prevent them from rolling nearer the control line and spotting across6. Improve control lines<ul style="list-style-type: none">a. Widen lines if necessaryb. Eliminate sharp bends in the line where fire can more easily crossc. Clear canopy near the line which may encourage fire extensiond. Ensure that control lines are cleared to mineral soile. Grub out and remove any burning roots which may cross under the control line7. Burn out intervening fuels between the fire and the control line when practical	



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<p>8. Reduce amount of unburned fuel near control lines</p> <ul style="list-style-type: none">a. Remove and scatter unburned fuels back into the greenb. Pay particular attention to receptive fuel beds<ul style="list-style-type: none">(1) Flashy fuels(2) Punky logs or stumps(3) Other concentrations of dead or decomposing fuels<ul style="list-style-type: none">(a) Susceptible to direct firebrand contact and radiant heatingc. Particular care must be exercised with dozer piles which may harbor burning fuel on the green side of the control line <p>C. Mop Up Procedures</p> <ul style="list-style-type: none">1. Seek out hotspots<ul style="list-style-type: none">a. Flamesb. White ash areasc. Wisps of smoked. Burned out stumpse. Burned logs and other heavy fuelsf. Glowing embers during night operations2. Use handtools in conjunction with water	



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<ul style="list-style-type: none"> a. Rake, scrape and chop until hotspot is located b. Apply small amount of water directly to burning fuels <ul style="list-style-type: none"> (1) Water conservation is important (2) Use of water additives is very helpful <ul style="list-style-type: none"> (a) Foam (b) Wet water c. Repeat above steps until fire is extinguished 3. To determine when fire is extinguished feel out the hotspot by passing the back of the ungloved hand 12" above the smoldering fuel and then lower the hand until near the fuel surface 	
<p>II. PATROL</p> <ul style="list-style-type: none"> A. The Act of Actively Moving About All Segments of the Fire Control Line, Seeking Out Hotspots Inside and Outside the Control Line, and Extinguishing Those Hotspots Before They Become a Greater Problem B. Patrol Guidelines <ul style="list-style-type: none"> 1. The number of resources assigned to patrol the fire depends upon: <ul style="list-style-type: none"> a. Type of fire behavior experienced during control operations <ul style="list-style-type: none"> (1) Significant spotting 	<p>Information sheet #4</p>



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<ul style="list-style-type: none">(2) Clean burn vs. sizeable islands(3) Type of fuels<ul style="list-style-type: none">(a) Flashy fuels = less resources(b) Heavy fuels = more resourcesb. In some instances there may be a vantage point from which the entire fire can be seen. This may reduce the number of resources assigned patrol duty<ul style="list-style-type: none">(1) Must have communication with resources assigned to the fire in order to direct them to the appropriate areac. Amount of control line to patrold. Vehicular access to control line2. Patrol fire as long as necessary to ensure there will not be a slopover or rekindle	



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SUMMARY:

Mop up and patrol are very important operations in the control of a fire. If either is done poorly the possibility of a rekindle is significant. The rekindle has the potential to be larger, more costly and more severe than the original fire.

EVALUATION:

A written quiz.

ASSIGNMENT:

To be determined by instructor(s).