



Fire Protection Training

Procedures Handbook 4300

VEGETATION FIRES

TOPIC: Wildland Hoselays

TIME FRAME: 1 Hour

LEVEL OF INSTRUCTION:

BEHAVIORAL OBJECTIVE:

Condition: A written quiz

Behavior: The student will list and describe the strategy and tactics associated with a wildland hoselay.

Standard: A minimum of 70% accuracy

MATERIALS NEEDED:

- Engine
- 1" and 1 1/2" single jacket hose
- Nozzle
- Wildland firefighting protective clothing
- Chalkboard
- Hose clamp
- Hose tees

REFERENCES:

- Water vs Fire, Forest Service, USDA (1973)
- Wildland Firefighting, Clayton, Day and McFadden, Chapter 6

PREPARATION:

A Hoselay is an effective tactic in wildland fire suppression. Firefighters must be able to perform all phases of the attack expeditiously with a minimum of confusion.

Techniques may vary slightly depending upon local conditions, number of firefighters, etc.; however, the basics of hoselay attack are the same everywhere.

The success of the hoselay will always depend on the ability of each firefighter to perform his or her assigned task.



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PRESENTATION	APPLICATION
<p>I. TERMINOLOGY:</p> <ul style="list-style-type: none">A. Progressive HoselayB. Simple HoselayC. LateralsD. Hose TeesE. Anchor PointF. Wet LineG. Fog StreamH. Straight StreamI. Narrow -Fog StreamJ. Hose ClampK. Field Shut OffL. CouplingsM. BrassN. AdaptersO. Nozzle PersonP. Charged LineQ. Hose PersonR. Brass Person <p>II. USE</p> <ul style="list-style-type: none">A. A Hoselay Attack Can be Either the Entire Means of Suppression or a Portion of an Overall Suppression Effort	



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<p data-bbox="228 344 808 432">B. Hoselays Are Most Effective When: Group Discussion</p> <ol data-bbox="302 569 1044 1801" style="list-style-type: none"><li data-bbox="302 569 964 877">1. Engine cannot reach or travel the fire line<ol data-bbox="378 638 911 877" style="list-style-type: none"><li data-bbox="378 638 643 674">a. Steep terrain<li data-bbox="378 705 773 741">b. Heavy brush or timber<li data-bbox="378 772 678 808">c. Fire too intense<li data-bbox="378 840 911 877">d. Rock outcroppings encountered<li data-bbox="302 909 802 1356">2. Water source distant from fire<ol data-bbox="378 978 691 1356" style="list-style-type: none"><li data-bbox="378 978 558 1014">a. Creeks<li data-bbox="378 1045 548 1081">b. Ponds<li data-bbox="378 1113 542 1148">c. Lakes<li data-bbox="378 1180 586 1215">d. Hydrants<li data-bbox="378 1247 691 1283">e. Swimming pools<li data-bbox="378 1314 565 1350">f. Ditches<li data-bbox="302 1388 1044 1801">3. Large or remote areas needing protection.<ol data-bbox="378 1457 1044 1801" style="list-style-type: none"><li data-bbox="378 1457 846 1528">a. Numerous lines being used simultaneously<li data-bbox="378 1560 1044 1596">b. Numerous exposures requiring protection<li data-bbox="378 1627 875 1663">c. More than one fire or spot fire<li data-bbox="378 1694 854 1730">d. Fire crew support/protection<li data-bbox="378 1761 808 1797">e. Dozer support/protection	<p data-bbox="1143 464 1425 535">When should a hoselay be utilized?</p>



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III. EQUIPMENT AND USE

A. Fire Hose

1. Woven jacket 2-1/2"
 - a. Supply lines
 - b. Structure protection lines
2. Woven jacket 1-1/2"
 - a. Attack lines for actively burning wildland fire
 - b. Supply or tank filler lines
3. Woven jacket 1"
 - a. Mop up
 - b. Used as laterals off 1 1/2" hoselays
4. Nozzle
 - a. 1" or 1-1/2" Straight stream with tip used when long reach is required (cool flame ahead of nozzle person)
 - b. 1" or 1-1/2" Combination - due to versatility most often used
5. Hose tees used to divert water from hoselay into 1" laterals
6. Spanner wrench used to tighten couplings as necessary
7. Hose clamp used to interrupt flow of water to nozzle without returning to engine
8. Gated wye used to separate one line into two lines

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<ul style="list-style-type: none"> a. 2-1/2" x 1-1/2" x 1-1/2" b. 1-1/2" x 1-1/2" x 1-1/2" <p>9. Adapters</p> <ul style="list-style-type: none"> a. 1-1/2" N.H. to 1" N.P.S.H. used to reduce hoselay diameter from 1-1/2" to 1" b. 1-1/2" double female N.H. used to join two opposing hoselays where they come together on a fire perimeter c. 1-1/2" double male N.H. 	
<p>IV. WILDLAND HOSELAY TYPES:</p> <p>A. Simple hoselay:</p> <ul style="list-style-type: none"> 1. Consist of consecutively coupled lengths of hose without hose tees or laterals <ul style="list-style-type: none"> a. Hydrant to engine b. Engine to engine c. Engine to fire <ul style="list-style-type: none"> (1) Where laterals would normally not be needed d. Exposure protection e. Advantages: <ul style="list-style-type: none"> (1) Completed faster <ul style="list-style-type: none"> (a) Especially when dry 	<p>Information sheet #1</p> <p>Explain effective uses or simple hose lays</p>



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<ul style="list-style-type: none">(2) Less staffing required(3) Less water required(4) Less hose required(5)f. Disadvantages:<ul style="list-style-type: none">(1) No hoselay protection between nozzle and engine<ul style="list-style-type: none">(a) Rekindles(b) Slopovers(2) If laterals are needed, hose lay will have to be shut down to add hose tees and laterals(3) Mop-up will take longer and require more work(4) Unacceptable for medium and heavy fuelsB. Progressive Hoselays:<ul style="list-style-type: none">1. Consists of consecutively coupled lengths of hose with hose tees and laterals placed at every second coupling<ul style="list-style-type: none">a. Simultaneous attack of fire as the hoselay progresses along fire edgeb. To protect hoselay from slopovers and spot firesc. Along prepared lines prior to burning out to protect against slopovers and spot fires	<p>Information sheet #2</p>

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<ul style="list-style-type: none"> d. Where exposure protection is anticipated e. Tees are normally placed each 200 feet when making a hoselay f. Advantages: <ul style="list-style-type: none"> (1) Provides good protection for crews that are working directly on hot line (2) Good line protection <ul style="list-style-type: none"> (a) Immediate protection or attack on slopovers, rekindles, and hot spots (3) Easier and faster transition to mop-up since breakdown not required (4) Should always be utilized on <ul style="list-style-type: none"> (a) Medium to heavy fuel fires (b) Matted light fuels g. Disadvantages: <ul style="list-style-type: none"> (1) Slower to lay (2) Requires more staffing (3) Requires more equipment (4) Requires larger volumes of water 	<p>Allow open discussion on this point</p>
<p>V. DEPLOYING HOSE</p> <ul style="list-style-type: none"> A. Wildland Hose Packs <ul style="list-style-type: none"> 1. Many different types are available 	



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<ul style="list-style-type: none">a. Gnass packb. Single or double donut in canvas packc. Mendocino <p>B. Hose Deployment Methods:</p> <ul style="list-style-type: none">1. Underhand or bowling method<ul style="list-style-type: none">a. Unroll down hill and away from fireb. Rubber band should be placed over coupling and remain on hose2. Drop & drag<ul style="list-style-type: none">a. Drop hose packb. Grasp couplings and drag hose from pack <p>C. Don't:</p> <ul style="list-style-type: none">1. Stretch hose to full length. Allow some slack in line for:<ul style="list-style-type: none">a. Replacement of a broken lengthb. Moving hose to safe location<ul style="list-style-type: none">(1) From one side of fire line to other(2) Out of the way of fire crews, dozers, etc.2. Roll into fire3. Roll uphill4. Drop couplings5. Charge hose until fully unrolled	<p>Information sheet #3</p>

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<ul style="list-style-type: none">b. Less chance of harming hose3. Disadvantages:<ul style="list-style-type: none">a. Difficult to accomplish with high pressureb. May require two firefightersc. Water not fully shut offC. Field Knee Shut Off<ul style="list-style-type: none">1. One person operation2. Fold hose back on itself3. Place fold behind knee4. Squat down and apply pressure directly on kink5. Open nozzle slowly to check if water flow is sufficiently shut down.	<p>Information sheet #5</p>
<p>VIII. HOSE CONNECTIONS</p> <ul style="list-style-type: none">A. Incorrect Hose Connections Can Slow Firefighting Operations and May Shut Down an Entire Hoselay<ul style="list-style-type: none">1. There are several methods of coupling hose. Use the one that works best for you.<ul style="list-style-type: none">a. Quick couple (stiff arm) method - one personb. Over the hip methodc. Foot tilt method2. Hose connection must be:	<p>Information sheet #6</p>



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<ul style="list-style-type: none">a. Hand tightb. Leak freec. Easily disconnected <p>IX. MECHANICS OF A HOSELAY</p> <p>A. Responsibilities and Task Assignments Vary Depending Upon Area, Number of Personnel, Size of Hose, etc.</p> <p>B. Crew Leader</p> <ul style="list-style-type: none">1. Responsible for the safety of the crew and engine<ul style="list-style-type: none">a. Makes sure the engine is in a safe and cleared area before leaving, windows rolled upb. Makes sure wheels of the engine are properly chockedc. Informs crew members of their assignmentsd. Engages pumpe. Connects hose to proper pump dischargef. Sets desired pump pressure2. Crew leader may supervise the fire line or stay with the engine depending on conditions <p>C. Nozzle Person</p> <ul style="list-style-type: none">1. Upon arrival at the fire:<ul style="list-style-type: none">a. Pulls preconnect or unrolls a length of 1-1/2" hose	



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<ul style="list-style-type: none"> b. Hands female coupling to pump operator for hook-up to pump discharge c. Connects nozzle d. Makes sure the hose is completely unrolled before line is charged e. Call "water" to have line charged f. Approaches fire only with a charged line <ul style="list-style-type: none"> (1) Air removed from hose (2) Adequate water flow (3) Correct water pattern g. Establishes an anchor point <ul style="list-style-type: none"> (1) To a road or other suitable barrier to fire's spread (2) If an anchor point can not be established some type of patrol will have to be maintained behind hoselay <ul style="list-style-type: none"> (a) Possibly a hoselay in both directions <p>2. Attack the fire up the flank toward the head</p> <ul style="list-style-type: none"> a. Generally the least active and b. Safest attack method 	<p>EMPHASIZE!</p> <p>EMPHASIZE!</p>



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<ul style="list-style-type: none">3. Continue around fire using a narrow fog on the fire edge. Firefighter's should work from/in the burned area4. Advance at a rate that ensures complete extinguishment of the fire<ul style="list-style-type: none">a. Is line secured behind you?5. the probability of slopover, rekindle, or spot fires is great, the hose lay must be progressive (i.e. hose tees and laterals laid)6. Use narrow fog or straight stream to cool fire out in front and to cool down heavy fuels burning near the fire line7. Conserve water at all times<ul style="list-style-type: none">a. Work as close as possible to fireb. Shut down nozzle when water isn't needed8. Make sure the hose is not pulled or rolled into hot material or placed in fuel where it can burn9. The nozzle and hoseline should be kept between the nozzle person and fire keeping one foot in the burn and the other in the green10. It is generally the responsibility of the nozzle person to make sure all crew members are carrying out assignments in the absence of the crew leaderD. Other Crew Members (Hose Person, Brass Person)<ul style="list-style-type: none">1. Upon arrival at fire<ul style="list-style-type: none">a. Chock engine	<p>Information sheet #7</p>



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<ul style="list-style-type: none">b. Get additional hose and equipment off the engine and prepare to assist the nozzle personc. Back up nozzle persond. Pull hosee. Watch for spot fires and slopoversf. Indicate to nozzle person when present length of hose is about to run outg. Unroll new length of 1-1/2" hose when needed<ul style="list-style-type: none">(1) Makes sure hose is completely unrolledh. Clamp off hose when directed by nozzle personi. Helps with hose connections and placement of hose teesj. Leave roll of 1" hose at all hose teesk. Continuously check back down hoselay for breaks, hose laying in hot material, spot fires, slopovers, etc.l. Replaces broken hose lengths<ul style="list-style-type: none">(1) Makes sure all damaged hose has a knot tied in it or is cut 3/4" of the way through so it will not be reused(2) Removes broken length(3) Inserts new length of hosem. Operate lateral lines as necessary	

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<ul style="list-style-type: none"> n. If enough firefighters are available, back-up personnel with hand tools and back pumps is advisable <ul style="list-style-type: none"> (1) Saves water (2) Allows pockets to be worked or burned out <ul style="list-style-type: none"> (a) Firing out operations may save needless use of water. No Freelancing! (3) Follow up with a scratch line will help hold and secure the fire line 	<p>Explain Freelancing. "Firing out with out prior approval from supervisor."</p>
<p>X. HOSELAY PICK UP</p> <p>A. houlder Carry</p> <ul style="list-style-type: none"> 1. Drain water from hose 2. Stretch hose lengths out to full extension 3. Place either coupling to rear or place in your back pocket 4. Fold hose alternately back and forth over your shoulder to about knee level <ul style="list-style-type: none"> a. Hose is easy to handle b. Drains completely c. Less work than other methods 	<p>Information sheet #8</p>



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<ul style="list-style-type: none">d. Less tangles and knotse. Reduces likelihood of tripping5. Using this method each person can carry 2 to 4 lengths of hose per trip off the fire lineB. Re-Rolling Hose<ul style="list-style-type: none">1. Should always be done before leaving fire<ul style="list-style-type: none">a. Allows for Re-use if dispatched to another fire enroute to station2. Easier to handle and pack on engine3. Use hose-roller or by hand4. While rolling check for:<ul style="list-style-type: none">a. Burns or damageb. Dirt, grit or nicks in threadsc. Gasketsd. All hose accounted for	
<p>XI. SAFETY CONSIDERATIONS WHILE MAKING WILDLAND HOSELAYS</p> <ul style="list-style-type: none">A. Simple Hoselay<ul style="list-style-type: none">1. No protection between nozzle person and engineB. Progressive Hoselay<ul style="list-style-type: none">1. Slower control of fire2. Possibility of using too much water or unwisely expending pressure by lateral operatorsC. Unrolling Hose	

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<ul style="list-style-type: none">1. Underhand or bowling motion usually best<ul style="list-style-type: none">a. Have a good grip near couplings<ul style="list-style-type: none">(1) Prevents couplings from striking firefighter in the face(2) Protects coupling2. Drop and drag is best method in confined areaD. Hose Clamping Operations<ul style="list-style-type: none">1. Lock and release hose clamps slowly2. Don't pinch fingers in hose clamp3. Field clamp and field knee shut off:<ul style="list-style-type: none">a. Difficult to use if the pressure is too highb. Open nozzle slowly before removing to check water flowc. Maintain constant grip and pressure until operation is completed4. Make sure clamp is effectively reducing water pressure before attempting connectionsE. At Fire Scene<ul style="list-style-type: none">1. Wear all protective and safety equipment2. Leave engine only in a safe area3. Chock engine4. Check engine pressure before starting to work5. Use the best hose stream pattern	<p>Information sheet #9</p>

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<ul style="list-style-type: none">a. Fog – protectionb. Straight stream - knock down hot spotsc. Narrow-fog-normal attack6. Do not use a 3/4" hard line as an attack line on actively burning fire7. Establish an anchor point8. Work at a steady pace. Do not over exert yourself and become exhausted.9. Extinguish all fire on the line as you proceed, knock down hot spots, and dangerous areas.10. Don't leave fire behind you11. Slow up or stop if visibility is not adequate. You must know where you are going.12. Always know what is going on behind you<ul style="list-style-type: none">a. Hot spotsb. Slopoversc. Hose in hot ashesd. Signals from crew13. During the entire hoselay attack, keep your mind on your work and pay attention14. You have placed yourself and the crew in an unsafe position if you rely completely on the nozzle for protection	<p>Information sheet #10</p> <p>Information sheet #11</p>

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<p>15.</p> <ul style="list-style-type: none">a. May run out of waterb. Hose may burn or burstc. Someone may clamp off hosed. May run out of water in enginee. Pressure may drop as other lines are added <p>16. Estimate or check continuously on amount of water left. If short don't get committed to hazardous areas, keep control of what you have.</p> <p>17. On large fires where very long and complicated hoselays attacks are being utilized, radio communication is a must.</p> <p>18. Mop up is as important as fire suppression. The fire is not considered out until mop up is completed.</p>	
<p>XII. HOSELAY HAND SIGNALS</p>	<p>Information sheet #12</p>

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SUMMARY:

Hoselays are an effective method of wildland fire suppression. Firefighters must be able to perform all phases of the attack expeditiously with a minimum of confusion.

Techniques may vary slightly depending upon local conditions, number of personnel, etc., however, the basics of the hoselay attack are the same.

The success of the hoselay will depend on the ability of each firefighter to perform their assigned task

EVALUATION:

A written quiz.

ASSIGNMENT:

To be determined by instructor(s).