



FIRE CREW FIREFIGHTING TRAINING

Procedures Handbook 4200

TOOLS AND EQUIPMENT

TOPIC: ORIENTATION TO WATER AND HOSE USE

TIME FRAME: 1:00

LEVEL OF INSTRUCTION: Level I

BEHAVIORAL OBJECTIVE:

Condition: Given a written quiz

Behavior: The student will confirm a knowledge of the components and procedures involved in a progressive hose lay

Standard: With a minimum 70% accuracy

MATERIALS NEEDED:

- Writing board with markers/erasers
- Appropriate audio visual equipment and screen
- Hose pack
- Single donut roll - 1½" single cotton jacket hose
- Double donut roll – 1½" single cotton jacket hose
- Roll - 1" single cotton jacket hose
- 1½" combination nozzle
- 1" combination nozzle
- Hose clamp
- Spanner wrench
- Video: "Progressive Hose Lay"
- Topic Quiz

REFERENCES:

- CDF Fire Protection Training Handbook 4300
- CDF Training Procedures Handbook 4000
- Water vs. Fire, NWCG

PREPARATION:

Fire crews are traditionally utilized for breaking the fuel leg of the fire triangle by building line. However, fire crews are being utilized more and more for applying water to fires, including the rapid deployment of a progressive hose lay from a fire engine.



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PRESENTATION	APPLICATION
<p>I. NOMENCLATURE</p> <p>A. Water sources for hose lays</p> <ol style="list-style-type: none">1. Fire engines2. Portable pumps3. Hydrants <p>B. Hose used in progressive lays</p> <ol style="list-style-type: none">1. 1½"2. 1"3. Male/female threads (swivel) <p>NOTE: Show students examples of different size hose and demonstrate swivel /coupling action</p> <ol style="list-style-type: none">4. Lateral<ol style="list-style-type: none">a) Tee'sb) May or may not be made out of brass <p>C. Brass</p> <ol style="list-style-type: none">1. Term is slang to describe nozzles, adapters, or appliances <p>NOTE: Show examples of nozzles, adapters and appliances</p> <ol style="list-style-type: none">2. 1½" nozzle3. 1" nozzle4. Hose tee	<p>Diagram lateral use on board</p>



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<ul style="list-style-type: none">5. Adaptor, 1½ to 1”6. Hose clamp7. Spanner wrench <p>II. USES OF WATER</p> <p>A. Fighting active fire</p> <ul style="list-style-type: none">1. Use as a semi-fog<ul style="list-style-type: none">a) Use parallel to fireb) Aim at base of flamec) Start at the bottom and work upd) Minimum 1½” hosee) Teamwork<ul style="list-style-type: none">1) Works well when followed quickly with a scratch linef) Conserve water<ul style="list-style-type: none">1) It can save you work2. Use straight stream<ul style="list-style-type: none">a) Reaching outb) Reaching upc) Penetration3. Make every drop of water count <p>B. Water uses during mop up</p> <ul style="list-style-type: none">1. Extinguish heavy fuel	



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<ul style="list-style-type: none">2. Extinguish hard to reach fuel<ul style="list-style-type: none">a) Above and below ground3. Work close to the target4. Work in conjunction with hand tools <p>C. Safety considerations</p> <ul style="list-style-type: none">1. Do not relax your guard just because you have water<ul style="list-style-type: none">a) Water streams/flows can stop for many reasons<ul style="list-style-type: none">1) Out of water2) Broken hose3) Burned hose2. Be careful with tools around hose3. Watch out for steam burns when putting water on hot material4. Initial attack firefighting generally requires an 1½" attack line	
<p>III. HANDLING HOSE</p> <ul style="list-style-type: none">A. Types of rolls<ul style="list-style-type: none">1. Donut2. Double donutB. Unrolling Fire Hose <p>NOTE: Explain and demonstrate</p> <ul style="list-style-type: none">1. Underhand roll	



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<p>2. Drop and drag</p> <p>3. Important points</p> <ul style="list-style-type: none">a) Don't hit fellow workers with hose when unrolling itb) Don't roll into heavy brushc) Don't let couplings fly or strike the groundd) Always unroll hose away from firee) Check for gaskets (female end)f) Leave rubber band on one end of the hoseg) Avoid sharp objectsh) Avoid hot material <p>C. Rolling fire hose</p> <p>1. Single donut roll</p> <ul style="list-style-type: none">a) Fold hose in half<ul style="list-style-type: none">1) Male coupling on top2) Female 18" longer (minimum)• Male end lengthens as roll progressesb) Desired distance at finish of re-rolling<ul style="list-style-type: none">1) How to adjust errors	<p>Why does length difference decrease?</p>



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<p>2) Reason for having male threads covered</p> <ul style="list-style-type: none">• Potential damage to exposed threads• San and dirt <p>D. Proper way to carry rolled fire hose</p> <ol style="list-style-type: none">1. Under arm2. Back pack<ol style="list-style-type: none">a) Knapsack typeb) Pack board type <p>E. How to carry unrolled or dirty hose</p> <ol style="list-style-type: none">1. Shoulder carry <p>NOTE: Demonstrate looping hose in back then in front</p> <ol style="list-style-type: none">a) Controlling couplingsb) Draining hose as you load <p>2. Teamwork method</p> <ol style="list-style-type: none">a) Break hose and drainb) One crew member on each endc) Works well to get hose to a place where it can be rolled <p>3. Butterfly carry</p> <ol style="list-style-type: none">a) Figure eight around arms <p>NOTE: Demonstrate figure eight method</p>	



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<p>F. Coupling hose</p> <ol style="list-style-type: none">1. Check gasket2. Check threads and swivel3. Set threads together<ol style="list-style-type: none">a) Turn backwards until click is heard or feltb) Spin female down, hand tight4. Dirty threads should be cleaned5. Missing gaskets<ol style="list-style-type: none">a) During firefighting operations, hose will probably be used anyway<ol style="list-style-type: none">1) Replace gasket ASAP6. Broken hose or damaged threads<ol style="list-style-type: none">a) Tie overhand knot in hose and leave out of lay <p>IV. INTRODUCTION TO HOSE LAYS</p> <p>A. Explain differences between wet and dry lays and when each is used</p> <ol style="list-style-type: none">1. Explain what difficulties may occur during progressive hose lay<ol style="list-style-type: none">a) Blown hose, leaking fittings, etc.<ol style="list-style-type: none">1) Have water shut down if need beb) Integration with other units such as an engine company <p>B. Explain difference between simple and progressive hose lays</p>	



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<ul style="list-style-type: none">1. Laterals at 200' intervals or as needed<ul style="list-style-type: none">a) Laterals can be used to extinguish spot fires and slop oversb) Laterals can be used for mop-upC. Explain duties and responsibilities of the various progressive hose lay assignments<ul style="list-style-type: none">1. Nozzle Operator<ul style="list-style-type: none">a) Applies water to fireb) Paces the attack to ensure complete extinguishment of edgec) Cools hot spots close to edged) Conserves watere) Monitors fire and safetyf) Bleeds pressure from hose while clamping is in progressg) Removes and reinstalls nozzle when adding hoseh) Bleeds air from new section of hose prior to advancement2. Brass Handler<ul style="list-style-type: none">a) Observes for any threat to the safety of personnelb) Advises Nozzle Operator when to stop to add hosec) Clamps hose 18" behind nozzle while Nozzle Operator is bleeding off the pressure	



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<ul style="list-style-type: none">d) Carries hose tee's and spanner wrenchese) Receives male coupling of hose lay from Nozzle Operatorf) Attaches tee if indicatedg) Holds male coupling (or male end of the tee) toward Hose Handler for couplingh) Removes hose clampi) Assists and relieves Nozzle Operator as necessary	
<p>3. Hose Handler</p> <ul style="list-style-type: none">a) Takes a roll of hose from a Hose Carrierb) Unrolls hose prior to time it is neededc) Hands new male coupling to Nozzle Operator during addition of a length of hosed) Checks female coupling for gaskete) Matches threads of new female coupling to the male coupling held by the Brass Handler and spins down the swivelf) Checks with Nozzle Operator and calls for water	
<p>4. Hose Monitor</p> <ul style="list-style-type: none">a) Straightens unrolled hoseb) Removes kinks and twists from unrolled hose prior to water being directed through it	



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<ul style="list-style-type: none">c) As nozzle is advanced, manipulates loop to prevent snagging on obstructionsd) Watches hose lay to prevent bedding in hot material <p>5. Lateral Operator</p> <ul style="list-style-type: none">a) Acquires a roll of 1" hose and a 1" nozzleb) Attaches the nozzle to the hosec) Accompanies the nozzle team and assists as neededd) Takes up station at assigned tee as establishede) Deploys lateral and performs as directed by the Fire Captain <p>6. Support personnel</p> <ul style="list-style-type: none">a) Hose Carriers<ul style="list-style-type: none">1) Carry hose2) Watch for spot fires and slop overs3) Watch fire situation4) Maintain communicationsb) Lookouts<ul style="list-style-type: none">1) Stationed in a strategic location by the Fire Captain to watch for hazardous fire conditions2) Must understand fire behavior and recognize dangerous situations3) Must maintain contact	



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<p>V. PROGRESSIVE HOSE LAY OPERATIONS</p> <p>A. Nozzle Operator</p> <ol style="list-style-type: none">1. Connects nozzle to hose2. Calls for water3. Anchors fire4. Progresses parallel with the fire's edge at a rate that insures complete extinguishment of the perimeter5. Cools hot spots near fire's edge6. Watches for spot fires and crew safety <p>B. Brass Handler</p> <ol style="list-style-type: none">1. Pulls hose2. Informs nozzle operator when present length of hose is about to run out. Maintains about twenty feet of slack for each length of hose3. Clamp hose 18" behind nozzle making sure nozzle is partially open to bleed off pressure4. Takes male coupling at end of hose lay from nozzle operator after nozzle is removed5. Checks for gasket and connects hose tee to end of hose lay, before new length is added, where needed6. Controls male coupling at end of hose lay while hose handler spins down female swivel of new length7. Removes clamp when new length is installed and nozzle operator calls for water	



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<p>C. Hose Handler</p> <ol style="list-style-type: none">1. Takes hose roll from carrier2. Removes rubber band and places it over the female coupling3. Unrolls new length prior to being needed by nozzle operator4. Hands male coupling to nozzle operator5. Checks female coupling for gasket6. Matches female coupling of new length with male coupling of hose lay (or tee) which is being held by brass handler, and spins down swivel7. Replaces broken hoses as needed <p>D. Hose Monitor</p> <ol style="list-style-type: none">1. Stretches and secures hose after being unrolled by Hose Handler2. Continually watches loop or "bight" to prevent snagging as nozzle is advanced3. Monitors hose placement or bedding to avoid damage <p>E. Lateral operator</p> <ol style="list-style-type: none">1. Acquires one 1" nozzle and one length of 1" hose2. Connects nozzle to hose3. Follows nozzle crew, assisting as needed, until his or her assigned tee is installed	



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<ul style="list-style-type: none">4. Installs and operates lateral as directed by the Fire Captain5. Watches for spot fires <p>F. Hose carrier</p> <ul style="list-style-type: none">1. Transports a length of 1½" hose from the source to where they are needed2. Hands a roll of hose to the hose handler when requested to do so3. Monitors security of the hose4. Watches for spot fires5. Helps pull hose or returns to the source for more hose as directed by the Fire Captain	<p>Video: "Progressive Hose Lay"</p> <p>Administer Topic Quiz</p>



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USE

SUMMARY:

We have discussed the various types of hose lays, reviewed progressive hose lays, and the responsibilities of each assignment for performing progressive hose lays.

EVALUATION:

The student will complete a written quiz at a time determined by the instructor.

ASSIGNMENT:

Review your notes in preparation for the upcoming quiz. Study for the next session.