TABLE OF CONTENTS

	TITLE		PAGE NUMBER	
	TAB	LE OF CONTENTS	1	
١.	INTF	RODUCTION	6	
II.	RES	PONSIBILITY	6	
III.	POLICY		6	
IV.	APP	ENDIXES	7	
	A.	Appendix I – 1-Inch and Smaller Hose	8	
		Loading Hose, Reel Lines	8	
	В.	Appendix II – 1-1/2 Inch Hose	10	
		Loading Hose, Accordion Method	10	
		Unloading Hose, Accordion Method	12	
		Loading Hose, Reverse Horseshoe	14	
		Unloading Hose, Reverse Horseshoe	16	
		Loading Hose, Three Fold method	18	
		Unloading Hose, Three Fold Method	20	
		Loading Hose, Transverse Hose Beds	22	
	C.	Appendix III – 2-1/2 Inch Hose	24	
		Four-Way Valve – Operation – Blake	24	
		Four-Way Valve – Operation – Akron	26	
		Four-Way Valves – Tailboard Mounted	29	
		Loading Hose – Accordion Method	30	
		Unloading Hose – Accordion Method	32	

TITLE	PAGE NUMBER
Loading Hose – Horizontal Method	34
Unloading Adequate Hose	36
Making Hydrant – Single Line	38
Making Hydrant – Dual Lines	40
Making Hydrant – Reverse Lay Using Four-Way Valve (Blake or Akron)	42
Connecting Apparatus to Single Outlet Hydrant – Blake Four-Way Valve in Use	46
Connecting Apparatus to Dual Outlet Hydrant – Blake Four-Way Valve in Use	48
Connecting Apparatus to Dual Outlet Hydrant – Akron Four-Way Valve in Use	50
Connecting Apparatus to Dual Outlet, Dry Barrel Hydrant, Blake Four-Way Valve in Use	52
Connecting Apparatus to Dual Outlet, Dry Barrel Hydrant, Akron Four-Way Valve in Use	54
Connecting Apparatus to Hydrant – Without Four-Way Valve	56
Unloading Equipment	58
Anchoring Hose	60
Installing Hose Clamp	62

TITLE	PAGE NUMBER
Making and Breaking Couplings	64
Installing Nozzle	66
Operating Nozzle	68
Making Fold Pack – 2-1/2 Inch Hose	70
Picking Up Fold Pack – Two Person	72
Assembling and Installing Tap-In	74
Assembling and Extending Hose Lines	76
Installing Wye – One Line into Two Lines	78
Installing Siamese – Two Lines into One	80
Reducing to 1-1/2 Inch Hose Pack	82
Connecting to Sprinkler or Standpipe Systems	84
Connecting to Portable Monitors	86
Connecting Mounted Monitors	88
Connecting Hose Lines to Ladder Pipes	90
Lines Above Ground – Determining Hose Requirements for Shoulder Packs	92
Lines Above Ground – Preparing Shoulder Packs – Hose on Apparatus	94

TITLE	PAGE NUMBER
Lines Above Ground - Preparing Shoulder Packs - Hose on Ground	96
Lines Above Ground - Line Placement Open Stairways	100
Lines Above Ground - Line Placement - Enclosed Stairways	102
Lines Above Ground - Line Placement - Pike Pole Technique	104
Lines Above Ground - Line Placement - Exterior Building - Rope Technique	106
Lines Above Ground - Line Up Ladder	108
Lines Above Ground - Line Up Fire Escape	110
Cellar Nozzle	112
Bresnan Distributor	114
Appendix IV - 3-1/2 Inch Hose - Dual Carrier	116
Three-Way Siamese - Tailboard Mounted, Typical Hose Load	116
Installing Hose Clamp	117
Making Hydrant - Single Line	118
Making Hydrant - Reverse Supply Lay Using Three-Way Siamese	120

D.

TITLE	PAGE NUMBER
Connecting Apparatus to Single Outlet Hydrant - Three-Way Siamese in Use	122
Connecting Apparatus to Dual Outlet Hydrant - Three-Way Siamese in Use	124
Connecting Apparatus to Hydrant - Reverse Lay	126
Installing Suction Adapter on Reverse Supply Lay	128
Installing Suction Adapter on Supply Lay	128
Use of Three-Way Gated Wye on a Reverse Lay	130
Installing Way - One Line into Two Lines - Reducing to 2-1/2 Inch Hose	132
Appendix V - Glossary	134

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I. INTRODUCTION

- A. <u>Purpose:</u> To provide guidelines and manipulative instructions on how to load and unload hose, the handling of hose, and the connecting of various appliances to hose.
- B. <u>Scope:</u> This instruction applies to all personnel who use or supervise the use of Fire Department hose.
- C. <u>Author</u>: The Deputy Fire Chief of the Administrative Bureau, through the Training Section, shall be responsible for the content, revision and annual review of this instruction.

II. RESPONSIBILITY

- A. <u>All Personnel</u> shall know and be capable of performing all the basic skills of this instruction in an efficient and safe manner.
- B. <u>Station Captains</u> shall be responsible for the proficiency and safety of their personnel in the area of basic hose skills.

III. POLICY

A. This instruction shall be considered policy of the Los Angeles County Fire Department.

IV. APPENDIXES

- A. <u>Appendix I</u> 1-INCH AND SMALLER HOSE
- B. <u>Appendix II</u> 1-1/2 INCH HOSE
- C. <u>Appendix III</u> 2-1/2 INCH HOSE
- D. <u>Appendix IV</u> 3-1/2 INCH HOSE DUAL CARRIER
- E. <u>Appendix V</u> GLOSSARY

APPENDIX I 1-INCH AND SMALLER HOSE

Loading Hose - Reel Lines

- 1. Lay out and connect hose at side of apparatus opposite reel with "female" coupling connected to reel line.
- 2. INSTALL NOZZLE and charge line with sufficient pressure to test or leaks and expel air from the hose.
- 3. Wind hose on reel until one layer is complete. Loosen hose on reel sufficiently when using cotton jacket hose to provide room for expansion when charged with pump pressure.
- 4. Continue winding hose on reel until load is complete.
- 5. Secure reel and nozzle.



APPENDIX II 1-1/2 INCH

Loading Hose - Accordion Method - 1-1/2 Inch Hose

- 1. Lay out and connect hose at rear of apparatus with "female" coupling connected next to tailboard.
- 2. Start hose into hose bed next to partition with "female" coupling to front of bed.
- 3. Make vertical fold at rear, folding back tight against length just loaded and extend to front of bed.
- 4. Fold back and continue until first layer is completed.
- 5. Bring hose up to next layer and continue loading as in first layer. (Hose may come up to next layer at either front or rear of hose bed.)
- 6. Complete loading hose. <u>INSTALL NOZZLE</u> and place securely on top of hose at rear load.
- NOTE: Use Dutchman to avoid folds near couplings and to keep couplings leading out.

If hose becomes too tight in front of hose bed, slightly alternate the length of every other fold.



Unloading Hose - Accordion Method -1-1/2 Inch or Smaller

- 1. Grasp nozzle or "male" coupling in one hand and first full fold in the other hand.
- 2. Pull hose until loop clears apparatus by 10 feet and place toward fire.
- 3. For additional hose, grasp next two full folds and pull hose until forward loops clear apparatus by 10 feet and place next to previously pulled loop.
- 4. Repeat operation until adequate hose is unloaded.
- 5. <u>BREAK COUPLING</u> and return "male" coupling and slack hose to hose bed.
- 6. Connect the "female" coupling to discharge gate.



Loading Hose - Reverse Horseshoe - 1-1/2 Inch Hose

- 1. Lay out and connect hose at rear of apparatus with "female" coupling next to tailboard.
- 2. Connect "female" coupling to manifold discharge gate.
- 3. Start hose flat from pre-connected "female" end into center of hose bed toward front of bed to the desired distance.
- 4. When distance has been reached, loop back, standing hose vertically along the side of the hose bed.
- 5. Form a loop one foot beyond rear of hose bed. Form loop by passing hose around to opposite side and continue toward front of hose bed to the desired distance.
- 6. Fold back tight against length just loaded, turning hose as loop is formed to remove twist. (The twist will have to be removed as each loop is formed.)

7. Continue loading, staying inside existing loops until layer is completed with the desired amount of hose.

- 8. When completing layer, coupling should be placed at the front of the hose bed. When there is unused space in the layer, fill with hose from the same layer by using the rickrack method in the void.
- 9. To start successive layers, double back at the front of hose bed, standing hose vertically along sides and continue as in previous layers.
- 10. <u>INSTALL NOZZLE</u> and place in center of top layer, extending toward rear o hose bed.
 - NOTE: Couplings should fall approximately the same distance from the front of the load in each layer of hose. Each layer should contain fifty feet of hose with couplings near front of the load.



Unloading Hose - Reverse Horseshoe - 1-1/2 Inch Hose

UNLOADING

FIGURE 1

- 1. First person position self on tailboard, facing hose.
- 2. Grasp nozzle with one hand and place hose over shoulder away from hose bed.
- 3. Place other arm down through three top layers of loops, twist 90° to free hose from bed, turn and step off tailboard.
- 4. Maintain arm in a horizontal position approximately waist high, keeping the three layers in the same order.
- 5. Pull hose clear of apparatus and toward the fire. (Allow ten feet clearance and ample time for a second person to grasp and unload next three layers.)

FIGURE 2

6. Second person repeats Operations #3 and #4.

LEADING IN

FIGURE 3

- 7. Both personnel lead off.
- 8. Second person, person nearest apparatus, drops top fold, first layer nearest hand, extends hose, then drops second fold and extends hose. Repeat the same technique for the third fold.
- 9. First person repeats Operation #2 until all folds have been extended.
- 10. Signals for water and <u>LEADS IN.</u>





Loading Hose - Three Fold Method - 1-1/2 Inch Hose

- 1. Lay out and connect sections of 1-1/2 inch hose. Connect "female" coupling to rear manifold discharge gate.
- 2. Place hose in three equal lengths with folds 1, 2 and 3 beside apparatus placed even with front of hose bed and adjust folds evenly, removing twist.
- 3. Place first fold in hose bed and extend to front of bed.
- 4. Place second fold in hose bed and extend to front of bed.
- 5. Place third fold in hose bed and extend to front of bed.
- Make horizontal fold over itself in the reverse order, using fold 3 2 1.
- Again repeat operation in reverse sequence, this time using folds 1 -2 - 3, until load is complete. Adjust folds and <u>INSTALL NOZZLE.</u>
 - NOTE: In wide hose beds it will be necessary to leave space, equal to the width of the hose, between each fold.





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Unloading Hose - Three Fold Method - 1-1/2 Inch Hose

FIGURE 1

1. Grasp nozzle with one hand and place over shoulder away from hose bed; place other arm through two pre-formed loops.

FIGURE 2

- 2. Turn and step off tailboard. Lay by pulling manually or by the use of the apparatus. (If layed by apparatus, anchor lines and signal engineer to proceed.)
- 3. Pull or lay lines until forward loops clear tailboard by ten feet.
- 4. Adjust and straighten hose for <u>LEADING IN.</u>

FIGURE 3

- 5. Drop outside loop and lead in until remaining loop is tight; drop loop and continue to lead in.
 - NOTE: When two manifold lines are layed at the same time <u>LEAD IN</u> line nearest the fire first.



Loading Hose - Transverse Hose Beds - 1-1/.2 Inch Hose

FIGURE 1

- 1. Position personnel at opposite ends of bed.
- 2. Connect "female" coupling to discharge gate; pass loop of hose through bed.
- 3. Form loop approximately 6 inches from end of bed. This loop allows slack for two-directional pull.
- 4. Load hose in vertical position.

FIGURE 2

- 5. Pass hose through bed; form loop at opposite end of bed.
- 6. Continue loading in above manner until approximately 75 feet is in place, making four to five pull loops at both ends of bed.

FIGURE 3

- 7. Bring hose out of center of first layer and commence second layer passing hose to other person.
- 8. Successive layers are formed in identical manner as first layer except that "loop for slack" is eliminated.
- 9. <u>INSTALL NOZZLE</u> and place in center of bed between folds of in a final layer.



APPENDIX III

<u>2 –1/2 INCH HOSE</u>

Blake Four-way Valve Operation

SINGLE OUTLET HYDRANT

FIGURE 1

1. With four-way handle in position for hydrant pressure and hydrant open, water flows through four-way valve to fire line.

FIGURE 2

2. With four-way handle in position for pump pressure and hydrant open, water flows through four-way valve to pump suction and from pump discharge back through four-way valve to fire line.

DUAL OUTLET HYDRANT

FIGURE 3

1. With four-way handle in position for hydrant pressure and the 2-1/2 inch hydrant outlet open, water flows through the four-way valve to the fire line.

FIGURE 4

2. With four-way handle in position for pump pressure and pump receiving water supply from 4 inch outlet, water flows from pump discharge through four way valve to fire line.

BLAKE FOUR-WAY VALVE OPERATION SINGLE OUTLET OR DUAL OUTLET HYDRANTS



(V4-C3-S1)

Akron Four-way Valve Operation

SINGLE OUTLET HYDRANT

FIGURE 1

1. With gate valve on Akron four-way valve closed and hydrant open, water flows through four-way valve to fire line.

FIGURE 2

- 2. With gate valve on Akron four-way valve open and hydrant open, water flows through the to T-way valve to pump suction and from pump dischargegack through the four-way valve to the fire line.
 - (a) Change-over occurs automatically when water from the pump enters the four-way, overrides the hydrant pressure, closing a spring loaded valve which prevents water from the hydrant side of the four-way valve from entering the supply line and allows water to now flow directly from the pump through the four-way valve to the fire line. This feature eliminates the changeover procedure.

DUAL OUTLET HYDRANT

FIGURE 3

1. With gate valve on Akron four-way valve closed and hydrant open, water flows through four-way valve to fire line.

FIGURE 4

2. With pump receiving water supply from 4 inch outlet of hydrant and pump pressure entering Akron four-way valve, the automatic spring valve is accuated, closing of the hydrant supply to the fire line and allowing the water under pump pressure to enter the fire line.

AKRON FOUR-WAY VALVE OPERATION SINGLE OUTLET OR DUAL OUTLET HYDRANTS





Loading Hose - Accordion Method - 2-1/2 Inch and Lamer

- 1. Lay out and connect hose at rear of apparatus with "female" coupling next to tailboard.
- 2. Start hose into hose bed next to partition with "female" coupling to front of bed.
- 3. Make vertical fold at rear, folding back tight against length just loaded and extend to front of bed.
- 4. Fold back and continue until first layer is completed.
- 5. Bring hose up to next layer and continue loading as in first layer. (Hose may come up to next layer at either front or rear of bed).
 - NOTE: Use Dutchman to avoid folds near couplings and to keep couplings leading out. If hose becomes too tight in front of bed, alternate the length of every other fold slightly.





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Unloading Hose - Accordion Method - 2-1/2 Inch and Larger

- 1. Grasp nozzle or "male" coupling in one hand and first full fold in other hand.
- 2. Pull hose until loop clears apparatus by ten feet and place toward fire.
- 3. For additional hose, grasp next two full folds and pull hose until forward loops clear apparatus by ten feet, placing them next to previously pulled loops.
- 4. Repeat the operations until adequate hose is unloaded.
- 5. <u>BREAK COUPLING</u> and return "male" coupling and slack hose to hose bed.
- 6. Connect the "female" coupling to the discharge gate.



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Loading Hose - Horizontal Method - 2-1/2 Inch and Larger

- 1. Lay out and connect hose at rear of apparatus with "male" coupling next to tailboard.
- 2. Loading left bed. Start hose into hose bed next to inside partition with "male" coupling to rear of hose bed. (allow enough hose for "male" coupling to reach half the distance between the tailboard and ground).
- 3. Make horizontal fold at front, fold hose back directly on itself and extend to the rear.
- 4. Make horizontal fold at rear, fold hose back directly on itself, dropping off near the middle and parallel to the previous hose loaded to the front.
- 5. Continue loading, repeating Steps 3 and 4 until load is completed.
 - NOTE: When loading right bed, "male" coupling is to be loaded to the front of the bed, next to partition. Continue loading as described in Steps 3, 4 and 5.

Use Dutchman to avoid folds near coupling, and to keep couplings leading out.



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Unloading Adequate Hose

STRAIGHT LAY

FIGURES 1 AND 2

- 1. Grasp first full fold of hose ahead of the line being laid from the hose bed.
- 2. Pull out until the forward loop drops clear of the tailboard by ten feet.
- 3. Place the first pull farthest from the fire and lay out succeeding pulls toward the fire.
- 4. On last pull continue until coupling drops from hose bed at the rear of tailboard.
- 5. <u>BREAK COUPLING</u> and return "female" coupling and slack hose to hose bed.

REVERSE LAY

FIGURE 3

- 1. Grasp first full loop of hose ahead of the line being laid from the hose bed in one hand, the disconnected coupling from the four-way valve with the other hand.
- 2. Pull out until forward loops drops clear of the tailboard by ten feet.
- 3. Place the first pull nearest the fire. Lay out succeeding pulls away from the fire.






Making Hydrant - Single Line

BLAKE OR AKRON FOUR-WAY VALVE

FIGURE 1

1. Grasp four-way valve in one hand and first full fold of hose in the other. Turn and carry approximately ten feet directly back of tailboard.

FIGURE 2

 Drop fold of hose and proceed around hydrant toward front of apparatus until hose in snubbed on hydrant. Signal engineer to proceed.

FIGURE 3

3. Allow apparatus to lay three or four sections of hose to prevent drag. Proceed back toward hydrant staying on outside of loop. .At base of hydrant pick up hose and throw over hydrant.

FIGURE 4

- 4. Place four-way valve at base of hydrant below outlet. Remove spanner and wrench; remove hydrant cap; place spanner on hydrant stem, connect four-way valve to hydrant outlet, pointing four-way valve suction connection in direction most accessible for connecting apparatus. (This may require four-way valve to be upside down). When using <u>Blake four-way</u> valve position handle for hydrant pressure. Open hydrant and clear hydrant area for apparatus.
 - NOTE: Soft suction 4" X 2 1/2" increaser and by-pass hose may be dropped off at hydrant at this time.



Making Hydrant - Dual Lines

BLAKE OR AKRON FOUR-WAY VALVE

FIGURE 1

- 1. Grasp four-way valve in one hand and fold of hose in other turn and carry approximately ten feet directly back of the tailboard.
- 2. Drop fold of hose and proceed around hydrant toward front of apparatus until hose is snubbed on hydrant. Lay fourway down.
- 3. Return to tailboard. BREAK COUPLING connecting hose beds. Grasp "female" coupling in one an and fold of hose in other hand; turn and carry directly back approximately ten feet from tailboard.

FIGURE 2

4. Drop fold of hose and proceed around hydrant toward front of apparatus. Pick up four-way while holding second line. Snub both lines on hydrant. Signal engineer to proceed.

FIGURE 3

5. Lay second line down. Proceed back toward hydrant staying on outside of loop. At base of hydrant, pick up hose and throw over hydrant. Place four-way valve at base of hydrant below outlet. Remove spanner and wrench; remove hydrant cap; place spanner on stem. Connect four-way valve to hydrant outlet, pointing four-way valve suction connection in direction most accessible for connecting apparatus. When using <u>Blake four-way</u> valve, position handle to correct position for hydrant pressure. Open hydrant.

FIGURE 4

6. Clear hydrant area for apparatus. Clear second hose line by tick-racking and placing it on hydrant side toward fire.



Making Hydrant- Reverse Lay - Using Four-way Valve

Blake or Akron Four-Way Valve

FIGURE 1

- 1. Unload four-way valve, wrench and spanner and one 2-1/2 inch double "female". Place them at base of hydrant.
- 2. Unload adequate hose from hose bed. BREAK COUPLING and proceed around hydrant toward front o apparatus. lace "male" coupling at base of hydrant.
- 3. Remove hydrant cap; place spanner on hydrant stem connect four-way valve to hydrant outlet.
- 4. Connect double "female" to "male" coupling on hose line; connect hose line to four-way valve. When using <u>Blake four-way</u> valve position handle for hydrant pressure.
- 5. Point suction hose connection on four-way valve in a direction most accessible for connecting apparatus. Open hydrant.



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Connecting Apparatus To Single Outlet Hydrant

Blake Four-way Valve in Use

- 1. Spot apparatus at hydrant. Remove suction and hydrant cap.
- 2. Remove suction and by-pass hose.
- 3. Connect suction hose to four-way valve.
- 4. Connect suction hose to pump intake.
- 5. Connect "male" coupling of by-pass hose to four-way valve.
- 6. Connect "female" coupling of by-pass hose to pump discharge gate.
- 7. Engage pump and open discharge gate while switching four-way valve handle to correct position for pump pressure.
- 8. Adjust for correct pump pressure.
- 9. Connect any additional lines to discharge gates. Open discharge gates to correct pressure.
 - NOTE: On two-person operation Engineer makes connections at the apparatus and Hydrantperson makes the connections at the hydrant.



Connecting Apparatus To Single Outlet Hydrant

Akron Four-way Valve in Use

- 1. Spot apparatus at hydrant. Remove suction cap.
- 2. Remove suction and by-pass hose from apparatus.
- 3. Connect suction hose to Akron four-way valve outlet labeled "TO PUMP."
- 4. Connect suction hose to pump intake.
- 5. Connect "male" coupling of by-pass hose to Akron four-way valve inlet labeled "FROM PUMP."
- 6. Connect "female" coupling of by-pass hose to pump discharge gate.
- 7. Open gate on Akron Four-way Valve which is labeled "TO PUMP." Engage pump and open discharge gate on apparatus.
- 8. Adjust for correct pump pressure.
- 9. Connect any additional lines to discharge gates. Open discharge gates. Re-adjust for correct pump pressure.
 - NOTE: On two-person operation Engineer makes connections at the apparatus and Hydrantperson makes the connections at the hydrant.



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Connecting Apparatus To Dual Outlet Hydrant

Blake Four-way Valve in Use

- 1. Spot apparatus at hydrant. Remove suction and hydrant caps.
- 2. Remove suction and by-pass hose from apparatus.
- 3. Connect suction hose to four-inch hydrant outlet.
- 4. Connect suction hose to pump intake.
- 5. Open hydrant and engage pump.
- 6. Connect "male" coupling of by-pass hose to four-way valve.
- 7. Connect "female" coupling of by-pass hose to pump discharge gate.
- 8. Close 2-1/2 inch hydrant outlet while changing four-way valve handle to correct position for pump pressure and simultaneously open discharge gate.
- 9. Adjust pump pressure.
- 10. Connect any additional lines to discharge gates. Open discharge gates and adjust for correct pressure.
 - NOTE: On two-person operation Engineer makes connections at the apparatus and Hydrantperson makes the connections at the hydrant.



Connecting Apparatus to Dual Outlet Hydrant

Akron Four-way Valve in Use

- 1. Spot apparatus at hydrant. Remove suction and hydrant caps.
- 2. Remove suction and by-pass hose from apparatus.
- 3. Connect suction hose to four-inch hydrant outlet.
- 4. Connect suction hose to pump intake.
- 5. Open hydrant and engage pump.
- 6. Connect "male" coupling of by-pass hose to Akron four-way Valve inlet labeled "FROM PUMP."
- 7. Connect "female" coupling of by-pass hose to pump discharge gate.
- 8. Open discharge gate and adjust pump pressure.
- 9. Connect any additional lines to discharge gates. Open discharge gates and adjust to correct pressure.
 - NOTE: Two-person operation Engineer makes connections at the apparatus and Hydrantperson makes the connections at the hydrant.



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Connecting Apparatus To Dual Outlets, Dry Barrel Hydrant

Akron Four-way Valve in Use

FIGURE 1

- 1. Spot apparatus at hydrant. Remove suction cap.
- 2. Remove suction and by-pass hose from apparatus.
- 3. Connect suction hose to pump intake.
- 4. Connect "male" coupling of by-pass hose to four-way valve.
- 5. Place metal cap on "male" outlet of four-way valve.
- 6. Connect "female" coupling of by-pass hose to pump discharge gate.

FIGURE 2

- 7. Signal Nozzleperson of hydrant shut down.
- 8. Shut down hydrant valve.
- 9. Remove four-inch hydrant cap.
 - NOTE: May be necessary to bleed off hydrant through fourway.
- 10. Connect suction to hydrant.
- 11. Open hydrant valve and engage pump.
- 12. Open discharge gate and change four-way valve to correct position for pump pressure.
- 13. Adjust pump pressure.
- 14. Connect any additional lines to discharge gates. Open discharge gates and adjust to correct pressure.
 - NOTE: Two-person Operation Engineer makes connections at the apparatus. Hydrantperson makes connections at hydrant.



Connecting Apparatus ?o Dual Outlet, Dry Barrel Hydrant

Akron Four-way Valve in Use

FIGURE 1

- 1. Spot apparatus at hydrant. Remove pump suction cap.
- 2. Remove suction and by-pass hose from apparatus.
- 3. Connect suction hose to pump intake.
- 4. Connect "male" coupling of by-pass hose to Akron four-way valve inlet labeled "FROM PUMP."
- 5. Connect "female" coupling of by-pass hose to pump discharge gate.

FIGURE 2

- 6. Signal Nozzleperson of hydrant shut down.
- 7. Shut down hydrant valve.
- 8. Remove four-inch hydrant cap.

NOTE: It may be necessary to bleed off hydrant through four-way.

- 9. Connect suction to hydrant.
- 10. Open hydrant valve and engage pump.
- 11. Open discharge gate and adjust pump pressure.
- 12. Connect any additional lines to discharge gates. Open discharge gates and set pump to correct pressure.
 - NOTE: Two-person Operation Engineer makes connections at the apparatus. Hydrantperson makes connections at hydrant.



Connecting Apparatus To Hydrant - Without Four-way Valve

- 1. Spot apparatus at hydrant. Remove suction and hydrant caps.
- 2. Remove suction hose.
- 3. Connect suction hose to desired hydrant outlet.
- 4. Connect suction hose to pump intake.
- 5. Open hydrant and engage pump.
- 6. Connect desired hose lines to discharge gates.
- 7. Open discharge gates.
- 8. Adjust pump pressure.
- 9. Connect any additional lines to discharge gates. Open discharge gates to correct pressure.
 - NOTE: Two-person Operation Engineer makes connections at the apparatus and Hydrantperson makes connections at hydrant.



Unloading Equipment

- 1. Unload 1-1/2 inch hose pack. Two persons remove and carry to a safe place and out of the way of further operations.
- 2. Unload ladders. Two persons remove extension and roof ladders, carry forward of apparatus and put in a safe place.
- 3. Unload axe; carry and put in a safe place.
- 4. Unload nozzles.
- 5. Unload hose clamp.
- 6. Unload other equipment as ordered by the commanding officer.



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Anchoring Hose

- 1. Anchor hose at last loop dropped from hose bed, using both hands.
- 2. Keep hose in front of body.
- 3. Signal engineer to proceed.
- 4. Continue to anchor hose until sufficient amount has been laid to prevent dragging.



Installing Rose Clamp

- 1. Place at a sufficient distance from apparatus to avoid any interference with unloading adequate hose.
- 2. On cotton and polyester jacket hose, install within eighteen inches of the coupling on the water source side with handle opposite the side the hose pulls are to be made.
- 3. For rubber hose install adjacent to coupling on the water source side with handle opposite the side the hose pulls are to be made.

NOTE: The hose clamp should be used in conjunction with laying hose lines to insure the shutting off of water and to allow ample time to place uncharged hose lines into position for use on the fire. It should always be available for use on broken hose lines and in other emergencies. It may be used for shutting off flow of water to bleed lines to take above ground.



Making and Breaking Couplings

BREAKING COUPLINGS

- 1. Pick up hose at coupling and lift waist high to obtain sufficient slack.
- 2. Place foot firmly behind "male" coupling.
- 3. Use both hands to loosen and spin off "female" couplings.

MAKING COUPLINGS

- 1. Grasp and pick up "female" coupling and lay hose over hip facing "male" coupling.
- 2. With other hand palm down, grasp and pick up "male" coupling and rest back of hand over front of knee.
- 3. Couple hose by turning swivel on "female" coupling.



Installing Nozzle

FIGURE 1

- 1. Palm down, grasp and pick up couplings and rest back of hand over front of knee.
- 2. Grasp nozzle at base of tip with other hand.
- 3. Line up threads and INSTALL NOZZLE.
- 4. Staying on the same side of hose line, pivot to face in the direction of waterflow; keeping line straight, shut off nozzle.

LEADING IN HOSE LINES

FIGURE 2

GROUND LEVEL

- 1. Place hose over shoulder, nozzle to the front; place loop of hose over shoulder.
- 2. Grasp nozzle with both hands and LEAD IN until loop on shoulder is tight. Drop loop.
- 3. Continue to LEAD IN OPERATE NOZZLE.

FIGURE 3

ABOVE GROUND

- 1. Place hose over shoulder with nozzle on back of body.
- 2. Do not cross hose in front of body. (Hose and nozzle to be on same side).



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Operating Nozzle

OPERATING NOZZLE - ONE PERSON

- 1. Straighten out sufficient hose behind nozzle. (Approximately twenty-five feet).
- 2. Grasp and pick up hose and nozzle allowing adequate hose to the front to allow free operation and movement of nozzle.
- 3. Brace hose with body and leg.
- 4. Open nozzle slowly.

OPERATING NOZZLE - TWO OR MORE PERSONNEL

- 1. Straighten out sufficient hose behind nozzle. (Approximately twenty-five feet).
- Nozzleperson grasp and pick up hose and nozzle allowing adequate hose to the front to allow free operation and movement of nozzle.
- 3. Assisting personnel take up staggered positions behind nozzleperson, with rear person placing foot on hose line. (Do not crowd nozzleperson and keep line on the same plane as nozzle). Notify nozzleperson before leaving.



Making Fold Pack,- 2-1/2 Inch Hose

FIGURE 1

- 1. Lay out a straight section of hose.
- 2. Grasp "female" coupling and double back alongside of hose and place next to "male" coupling.

FIGURE 2

- 3. Grasp hose approximately twelve inches in front of the eye of the loop on "female" coupling side of hose.
- 4. Holding hose low, double back alongside of hose and place next to "female" coupling.

FIGURE 3

- 5. Grasp hose (both inside and outside loops) approximately twelve inches in front of the eye of the loop, double back and place next to previous loop at "female" coupling side.
- 6. Adjust and squeeze folds together to complete pack.



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Picking Op Fold Pack - Two Person

- 1. Two personnel stand on coupling side facing each other.
- 2. Person to carry pack stands facing couplings, kneels low; places outside hand over hose and inside hand under hose, grasps, lifts and pivots under hose pack.
- 3. Assisting person grasps couplings, wye and nozzle with inside hand and loops with outside hand; lifts and places couplings under arm of person carrying. (Opposite the shoulder on which the pack is carried).
- 4. To unload hose pack from shoulder, grasp couplings and drop the hose off the shoulder to the ground.
 - NOTE: Nozzle and wye shall be installed before pickup and carry.


Assembling and Installing Tap-In

- 1. Unload wye and two nozzles.
- 2. Make a fold pack.
- 3. <u>INSTALL NOZZLE</u> to "male" coupling of fold pack.
- 4. <u>INSTALL NOZZLE</u> to one side of the wye, shut off and remove the tip.
- 5. Connect "female" coupling of fold pack to shutoff on wye.
- 6. Pick up and carry fold pack assembly to coupling on working line where assembly is to be installed.
- 7. Signal nozzleperson that line is being shut down.
- 8. Signal engineer to shut down working line. Obtain slack in line and <u>BREAK COUPLING</u>.
- 9. Install tap-in.
- 10. Signal nozzleperson line is being charged.
- 11. Signal engineer to charge line.
- 12. <u>LEAD IN</u> tap-in line, open shutoff on wye, <u>OPERATE NOZZLE</u>.





Assembling and Extending Hose Lines

- 1. Unload nozzle.
- 2. Make fold pack.
- 3. <u>INSTALL NOZZLE to "male" coupling on fold pack.</u>
- 4. Pick up and carry fold pack assembly to nozzle on working line. (Lay assembly down with coupling near nozzle on working line).
- 5. Shut down line, remove tip and connect "female" coupling to shutoff.
- 6. <u>LEAD IN</u> line, open shutoff, <u>OPERATE NOZZLE.</u>



Installing Wye - One Line Into Two Lines

- 1. Lay out desired amount of hose for two lines.
- 2. Unload wye and two nozzles.
- 3. <u>INSTALL NOZZLE</u> on each line.
- 4. Connect both hose lines to wye.
- 5. Shut off operating nozzle, remove tip, connect wye to shut off.
- 6. <u>LEAD IN</u> lines, open shutoff, and <u>OPERATE NOZZLE.</u>



Installing Siamese - Two Lines Into One

- 1. Lay out desired amount of hose.
- 2. Unload siamese and nozzle.
- 3. <u>INSTALL NOZZLE</u> on line.
- 4. Shut off first nozzle, remove tip; install siamese to shutoff.
- 5. Repeat Step 4 with second nozzle.
- 6. <u>LEAD IN</u> siamese line, open both shutoffs, <u>OPERATE NOZZLE</u>.
 - NOTE: Use of Clappered Siamese will allow one line to remain in operation while the other is being connected to Siamese.



Reducing to 1-1/2 Inch Hose Pack

- 1. Pick up and carry 1-1/2 inch hose pack to desired location.
- 2. Shut off nozzle, remove tip from working line.
- 3. Connect "female" coupling of reducing gated wye to shutoff.
- 4. Open shutoff on working line.
- 5. <u>LEAD IN</u>, open gate valves on wye, <u>OPERATE NOZZLE.</u>



Connecting To Sprinkler Or Standpipe Systems

FIGURES 1 AND 2

- 1. Lay one or more lines to inlet manifold connections.
- 2. INSTALL NOZZLE (S) on line(s).
- 3. Remove plugs or caps from inlets. Check inlets for gaskets and for foreign materials.
- 4. Remove tips; connect shutoffs to inlets, spanner tight.
- 5. Open shutoffs.
 - NOTE: On system with inlets in a horizontal position, connect to the center inlets first. On systems with inlets in a vertical position, connect to the lower inlets first.

FIGURES 3 AND 4

CONNECTING TO INTERIOR AND EXTERIOR STANDPIPES

- 1. Carry hose, nozzle and necessary fittings to desired floor.
- 2. Connect "female" couplings of hose to standpipe outlet. Secure with hose straps if required. (See Figure 4).
- 3. Open standpipe outlet.
- 4. <u>LEAD IN, OPERATE NOZZLE.</u>



Connecting To Portable Monitors

- 1. Lay two or more 2-1/2 inch lines or equivalent.
- 2. Remove tips and connect shutoffs to monitor inlets, spanner tight.
- 3. Direct monitor toward fire.
- 4. Open shutoffs, operate monitor.
 - NOTE: When using two lines on a three-inlet monitor connect lines to outside inlets. When using three lines, connect center line first.



Connecting To Mounted Monitor

- 1. Unload desired amount of hose for connecting to monitor.
- 2. Connect "female" couplings of hose to pump discharge gates.
- 3. Connect "male" couplings of hose to monitor inlets, spanner tight.
- 4. Direct monitor toward fire.
- 5. Open discharge gates, operate monitor.
 - NOTE: When using two lines on a three-inlet monitor, connect lines to outside inlets first. If available, it is desirable to use by-pass. hoses between discharge gates and monitor to eliminate excess hose.



Connecting Hose Lines To Ladder Pipes

- 1. Secure ladder pipe to rungs at the end of top fly of the aerial ladder with hose pre-connected.
- 2. Lay out pre-connected hose from ladder pipe, down the center of fly ladder to turntable. (Secure line behind shutoff to rung with leather hose strap).
- 3. Lay to the ground on side away from the fire. Connect siamese to "female" coupling.
- 4. Raise and extend ladder into position for operation. (Position person at base of ladder to feed hose lines as ladder is being extended).
- 5. Secure hose to ladder by use of leather strap placed below coupling.



Determining Hose Requirements For Shoulder Pacts

- 1. OPEN STAIRWAYS: The hose may be hung in the well provided it is supported and secured with hose straps. To estimate the amount of hose needed for shoulder packs:
 - a. Determine footage of hose necessary to reach from the point that pack will be connected to a standard hose lay (normally the entrance to the structure) to the base of the stairs.
 - b. Add 15 feet per floor (or one section of hose for every three stories).
 - c. Estimate the distance from the point of entry on the fire floor to the furthest point of the fire. (Figure 1).
- 2. CLOSED STAIRWAYS: The hose is to be placed on the stairs against the outside walls to allow safe ingress and egress. To estimate the amount of hose needed for shoulder packs:
 - a. Determine footage of hose necessary to reach from the point the pack will be connected to a standard hose lay at the base of the stairs.
 - b. Add 25 feet for each floor (one section of hose per two stories).
 - c. Estimate the distance from the point of entry on the fire floor to the furthest point of the fire. (Figure 2).



Preparing Shoulder Pacts – Hose On Apparatus

- 1. With nozzle installed on line leading from hosebed, the nozzleperson positions themself with their back to the apparatus, six feet from tailboard. Place nozzle over right shoulder toward rear of body. Engineer positions themself between nozzleperson and tailboard.
- 2. Engineer forms shoulder pack on nozzleperson, the first loop formed to the front, hanging between hip and knee. (Figure 1).
- 3. When nozzleperson has approximately 50 feet of hose folded on shoulder nozzleperson steps away from tailboard allowing fifteenfoot clearance. The next person positions themself six feet from tailboard, placing the line leading from hosebed to nozzleperson over their right shoulder. (Figure 2).
- 4. Engineer forms shoulder pack on second person's shoulder, the first loop to the rear, hanging between hip and knee. When -second person is loaded engineer steps away from tailboard approximately fifteen feet.
- 5. Engineer continues to load additional personnel, following Steps 3 and 4 until adequate hose is obtained.
 - NOTE: When shoulder packs are used in conjunction with straight lay evolutions or with standpipes, the engineer breaks the coupling at the hosebed when the last person is fully loaded and installs a double "female" on the pack. If necessary on reverse lays, after the last person is loaded, engineer makes adequate pulls to reach entrance of structure, installs hose clamp, lays line to water source. (Figure 3).



Preparing Shoulder Packs - Hose On Ground

- With adequate hose unloaded and nozzle installed, form a starting loop by folding back along line approximately seven feet. (Figure 1).
- 2. Nozzleperson grasps both lines six inches behind nozzle, picks up hose and nozzle, facing down the line placing hose on right shoulder, nozzle down and to the front of the body. (Figure 2).
- 3. Grasp hose, walk down the line forming a loop when hose reaches halfway between hip and knee. Return hose over shoulder forming a loop when the hose is even with the original loop. Continue forming loops alternating front and rear until within ten feet of the couplings between first and second section of hose.
- Second person forms a starting loop by grasping second section of hose six feet from the coupling between first and second section. Pull hose along itself forming a six-foot dutchman. (Figure 3).



Fig 1

Fig 2





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- 5. Second person grasps and picks up dutchman, pivots facing down the line placing it on right shoulder, coupling down so that loops hang evenly to front and rear between hip and knee. (Figure 4).
- 6. Grasping hose and walking down the line, the second person forms first loop to front of body when even with the starting loop, continues forming loops to front and rear until within ten feet of the coupling between second and third section of hose.
- 7. Additional personnel follow Steps 4 through 6 forming their starting dutchman six feet from the coupling of the last person loaded. Continue loading shoulder packs until adequate packs are obtained.
- 8. When last person is loaded, personnel pivot 180 degrees, placing nozzleperson at head of column. Other personnel support the line leading to the person ahead with the left hand. (Figure 3).





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Line Placement - Open Stairways

- 1. Personnel proceed up the stairs, nozzleperson leading, other personnel maintaining ten-foot spacing. (Figure 1).
- 2. Last person to enter structure pays off their shoulder pack first, dropping one fold at a time using the right hand to control the pack. The left hand is used to guide the hose into the well while maintaining tension of the line and removing slack upward. (Figure 2).
- 3. The first person to exhaust their pack secures hose, using a hose strap, preferably placed below a coupling (Figure 3). Awaits order to charge line.
- 4. Each person, in sequence, working from base to top of stairs, pays off their shoulder pack, secures hose and assist nozzleperson.



Line Placement - Enclosed Stairways

- 1. Personnel proceed up the stairs, nozzleperson leading, other personnel maintaining ten-foot spacing. (Figure 1).
- 2. Last person to enter structure pays off their shoulder pack first, dropping one fold at a time as they proceed up the stairs, placing hose against walls of stairway.
- 3. The first person to exhaust their shoulder pack takes position near base of stairs, awaits orders to remove hose clamp.
- 4. Each person, in sequence, working from base to top of stairs, pays off their shoulder pack as in Item 2. Assist nozzleperson.



Lines Above Ground - Line Placement

Fire Escapes - Pike Pole Technique

- 1. Place adequate hose at base of fire escape.
- 2. If necessary, raise ladder to first floor balcony; secure ladder.
- 3. Personnel climb ladder and fire escape, positioning one person on each landing, one person remaining on ground.
- 4. Person on ground secures nozzle to top of pike pole with hose strap (Figure 1), passes butt of pole to person on first landing.
- 5. Personnel pass pike pole to each other and assist in pulling hose. (Figure 2).
- 6. When adequate hose has reached the fire floor, personnel secure hose. (Figure 3).
- 7. Personnel assist nozzleperson.



104

Lines Above Ground - Line Placement

Exterior of Building - Rope Technique

- 1. Unload adequate hose, install nozzle. Personnel climb to desired floor with adequate rope and hose roller, one person remaining at base of structure.
- 2. Secure hose roller to the roof edge or window sill.
- 3. Uncoil rope retaining grasp on eye splice, dropping coil from structure. (Figure 1) Secure eye splice to structure.
- 4. Person at base secures rope to line and nozzle. To avoid the unnecessary pulling of slack rope back up to the roof or fire floor, tie line and nozzle into rope at convenient location.
- 5. Personnel pull adequate hose to roof or fire floor. (Figure 4).



Lines Above Ground - Line Up Ladder

FIGURE 1

- 1. Place adequate hose at the base of the ladder.
- 2. Nozzleperson places hose over shoulder with nozzle at back on the same side that the hose is laying (at the base of the ladder).

FIGURE 2

- 3. Assisting personnel place hose on same shoulder as nozzleperson at approximately twenty-five foot intervals. '
- 4. Nozzleperson starts climbing.
- 5. Assisting personnel start climbing, forming loop of hose in front, allowing slack hose to hang approximately to the . knees until personnel are spaced ten to fifteen feet apart.
- 6. Nozzleperson (after reaching desired floor or roof) lays nozzle down and turns to ladder for slack hose.
- 7. Personnel lock in on ladder facing side that hose is coming up, pass sufficient hose to nozzleperson to reach desired position.
- 8. Nozzleperson signals when nozzleperson has sufficient hose and personnel on ladder secure lines with hose straps.
- 9. Person nearest top of ladder advances and assists nozzleperson -to direct stream.

NOTE: The above technique can be used to take lines up a stairway.


Lines Above Around - Up Fire Escape

- 1. Pace adequate hose at base of fire escape.
- 2. Raise ladder to first floor balcony. Secure ladder to balcony railing.
- 3. Personnel climb ladder and fire escape with one person remaining on each balcony. One person remains at ground level.
- 4. Person at ground level places hose over shoulder, nozzle to the rear, and climbs to first balcony, hands nozzle to person stationed there who proceeds to the next level. First person remains at first balcony and passes up additional hose.
- 5. Other person repeat operation until nozzle reaches nozzleperson.
- 6. Nozzleperson enters window, pulls in adequate hose. Other personnel supply additional hose to nozzleperson.
- 7. Nozzleperson signals for water, <u>OPERATES NOZZLE</u>. Other personnel secure hose to railings with hose straps, Personnel assist nozzleperson.



Cellar Nozzle

- 1. Connect charged line to cellar nozzle.
- 2. Open hole in floor at location cellar nozzle is to be operated.
- 3. Place cellar nozzle with wings extended into hole.
- 4. Open shutoff, OPERATE NOZZLE by rotating control handle.
 - NOTE: It is advisable to have air masks on during breaking operation to protect against smoke issuing from hole.



Bresnan Distributor

- 1. Connect distributor to "male" coupling of hose.
- 2. Remove tip from charged hose line; connect "female" coupling of hose attached to distributor to shutoff.
- 3. Open hole in floor of desired location.
- 4. Place distributor through hole, open shutoff; lower all the way to floor, pull back up half way.
 - NOTE: It is advisable to have air masks on during breaking operation to protect against smoke issuing from hole.



<u>APPENDIX IV</u> <u>3-1/2 INCH HOSE – DUAL CARRIER</u>

Three –way Siamese – Tailboard Mounted, Typical Hose Load



STANDARDS FOR HOSE LOADING AND EQUIPMENT STORAGE DUAL CARRIER ENGINE COMPANY

- A. <u>4-INCH HOSE LOADING</u>
 - 1. 4-inch hose shall be loaded in the left bed using the horizontal method and preconnected to a hydra assist four-way valve.
 - 2. The hydra assist four-way valve shall be securely mounted to the tailboard.
 - NOTE: For loading instructions refer to Loading Hose -Horizontal Method 2-1/2 inch and larger- Page 34.

B. <u>2-1/2 INCH HOSE LOADING</u>

- 1. 2-1/2 inch hose shall be loaded in the right bed using the horizontal method.
- 2. After loading, a nozzle shall be preconnected to the "male" coupling.
 - NOTE: For loading instruction refer to Loading Hose -Horizontal Method - 2-112 inch - Dual Carrier Engine Company - Page 116-B.

C. <u>1-3/4 INCH REVERSE HORSESHOE HOSE LOAD</u>

Rear loaded 1-3/4 inch reverse horseshoe hose loads shall be loaded in the far right hose bed only.

D. <u>STORAGE OF EQUIPMENT</u>

- 1. Nozzles, wyes and Siamese shall be stored in the left rear compartment.
- 2. All medical related equipment shall be stored in the right rear compartment.
- 3. Hose clamp shall be mounted on the left side of the apparatus and easily accessible to the engineer.

117

4. The four-way valve for 2-1/2 inch hose may be carried on the apparatus (if desired) but shall not be preconnected to the 2-1/2 inch hose load.

LOADING HOSE - HORIZONTAL METHOD - 2-1/2 INCH DUAL CARRIER ENGINE COMPANY

- 1. Lay out and connect hose at rear of apparatus with "female" coupling next to tailboard.
- 2. Loading right bed, start hose into hose bed next to inside partition with "female" coupling to front of hose bed.
- 3. Make horizontal fold at rear, fold hose back directly on itself and extend to the front.
- 4. Make horizontal fold at front, fold hose back directly on itself, dropping off near the middle and parallel to the previous hose loaded to the rear.
- 5. Continue loading, repeating steps 3 and 4 until load is completed.
- 6. When completed, install nozzle to "male" coupling.
 - NOTE: Use Dutchman to avoid folds near-coupling, and to keep couplings leading out.

Installing Hose Clamp

- 1. Place at a sufficient distance from apparatus to avoid any interference with unloading adequate hose.
- 2. On cotton or polyester jacket hose, install within eighteen inches of the coupling on the water source side of the coupling.
- 3. On rubber jacket hose install adjacent to coupling on the water source side.

NOTE: The hose clamp should be used in conjunction with laying hose lines to insure the shutting off of water and to allow ample time to place uncharged hose lines into position for their use. It should always be available for use on broken hose lines and in other emergencies. It may be used for shutting off the flow of water.



Making Hydrant - Single Line

FIGURE 1

- 1. Apparatus stops approximately ten feet beyond the hydrant.
- 2. Remove bypass hose from apparatus.
- 3. Grasp three-way siamese in one hand and the first full fold of hose in the other hand. Turn and carry approximately ten feet directly back of the tailboard.
- 4. Drop fold of hose and proceed around hydrant toward front of apparatus until hose is snubbed on hydrant. Signal engineer to proceed toward fire.

FIGURE 2

- 5. Allow apparatus to lay two or three sections of hose to prevent drag. Proceed back towards hydrant staying on outside of loop. Lay three-way siamese on ground with the "female" inlets facing the hydrant. Pick up hose at base of hydrant and throw over hydrant.
- 6. Remove spanner and wrench; remove hydrant cap; place spanner on hydrant stem.

FIGURE 3

- *7. Connect bypass to hydrant outlet and to left side inlet on three-way Siamese.
- 8. Open hydrant and clear hydrant area for apparatus.
 - NOTE: Soft suction may be dropped off at hydrant at this time.

*The proper sequence for connecting lines into a three-way Siamese are: left outside, center and right outside inlets, since some of these fittings in use by this Department will malfunction if not connected and charged in this order.



(V4-C3-S1)

Making Hydrant - Reverse Supply Lay

Using Three-vay Siamese

FIGURE 1

- 1. Unload three-way siamese, wrench and spanner, one 3-1/2 inch double "female" and 2-1/2 inch bypass hose. Place them at base of hydrant.
- 2. UNLOAD ADEQUATE HOSE from hose bed. BREAK COUPLING and proceed around hydrant. Place "male" coupling on ground approximately four feet from hydrant.
- 3. Remove hydrant cap and place spanner on hydrant stem.

- 4. Connect bypass hose to hydrant outlet.
- 5. Connect bypass hose to left outside inlet on three-way siamese.
- 6. Connect double "female" to hose line; connect hose line to center inlet on three-way siamese.
- 7. Open hydrant and charge line.





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Connecting Apparatus To Single Outlet Hydrant

Three-way Siamese In Use

FIGURE 1

- 1. Spot apparatus at hydrant. Remove suction cap from apparatus.
- 2. Remove suction hose and 2-1/2 inch R 4-inch adapter.
- 3. Connect suction hose to pump intake.
- 4. Remove section of 2-1/2 inch hose. BREAK COUPLING, connect "female" coupling to discharge gate on far site apparatus. Connect "male" coupling to center inlet on three-way Siamese.
- 5. Remove second section of 2-1/2 inch hose. <u>BREAK COUPLING</u>, connect "female" coupling to discharge gate. Connect "male" coupling to three-way Siamese.

- 6. Signal nozzleperson of hydrant shut down.
- 7. Shut off hydrant.
- 8. Remove 2-1/2 inch bypass hose from hydrant outlet.
- 9. Connect suction hose to hydrant outlet.
- 10. Open hydrant and engage pump.
- 11. Open discharge gates on lines connected to apparatus.
- 12. Adjust pressure.
- 13. Connect 2-1/2 inch bypass to discharge gate.
- 14. Open discharge gate, readjust pressure.
 - NOTE: One-person Operation Engineer makes connections at the apparatus and hydrantperson makes connections at the hydrant.





Connecting Apparatus To Dual Outlet Hydrant

Three-vat Siamese In Use

FIGURE 1

- 1. Spot apparatus at hydrant. Remove suction and hydrant caps.
- 2. Remove suction hose.
- 3. Connect suction hose to 4-inch hydrant outlet.
- 4. Connect suction hose to pump intake.
- 5. Open hydrant and engage pump.

FIGURE 2

- 6. Remove section of 2=1/2 inch hose and connect to center inlet of three-way Siamese. Connect to the discharge gate on far side of apparatus. Open discharge gate.
- 7. Remove section of 2-1/2 inch hose and connect to inlet of three-way Siamese. Connect to the discharge gate. Open discharge gate.

- 8. Close 2-/2 inch hydrant outlet. Remove bypass hose from hydrant and connect to discharge gate. Open discharge gate and adjust pressure.
 - NOTE: On Two-person Operation Engineer makes connections at the apparatus and hydrantperson makes connections at the hydrant.



Connecting Apparatus To Hydrant - Reverse Lay

FIGURE 1

- 1. Spot apparatus at hydrant. Remove suction and hydrant caps.
- 2. Remove suction hose.
- 3. Connect suction hose to desired hydrant outlet.
- 4. Connect suction hose to pump intake.
- 5. Open hydrant and engage pump.
- 6. Remove adequate hose and <u>BREAK COUPLING.</u>
- 7. Install 2-1/2 inch "female", by 3-1/2 inch "female" adapter on hose line.

- 8. Connect hose line to discharge gate.
- 9. Open discharge gate and adjust pressure.
 - NOTE: On Two-person Operation Engineer makes connections at the apparatus and hydrantperson makes connections at the hydrant.



Installing Suction Adapter On Reverse Supply Lay

FIGURE 1

- 1. <u>UNLOAD ADEQUATE HOSE.</u>
- 2. Unload 3-1/2 inch double "male" and 3-1/2 inch by 4-1/2 inch suction adapter.

FIGURE 2

- 3. Install double "male" in hose line.
- 4. Install suction adapter on pump intake.
- 5. Install hose line into suction adapter.
 - NOTE: If apparatus is equipped with a preconnected 3-1/2 inch pump suction Siamese, the double "male" is connected directly into the Siamese.

Installing Suction Adapter On Supply Lay

FIGURE 3

- 1. <u>UNLOAD ADEQUATE HOSE.</u>
- 2. Unload 3-1/2 inch by 4-1/2 inch suction adapter.

- 3. Install suction adapter on pump intake.
- 4. Install hose line into suction adapter.



Use Of Three-way Gated Wye On A Reverse Lair

FIGURE 1

- 1. <u>UNLOAD ADEQUATE HOSE, BREAK COUPLING</u> and install 3-1/2 inch double "male" adapter .
- 2. Connect hose line to 3-1/2 inch by 2-1/2 inch three-way gated wye.

FIGURE 2

3. Connect 2-1/2 inch hose lines to three-way gated wye.



Installing Wye - One Line Into Two Lines

Reducing To 2-1/2 Inch Hose

FIGURE 1

- 1. <u>UNLOAD ADEQUATE HOSE for two 2-1/2 inch hose lines.</u>
- 2. Unload 2-1/2inch wye, 3-1/2 inch R 2-1/2 inch adapter, 21/2 inch double "male" and three nozzles.

- 3. Connect 3-1/2 by 2-1/2 inch adapter on 3-1/2 inch hose line.
- 4. <u>INSTALL NOZZLE</u> on 2-1/2 inch double "male"; connect nozzle to 3-1/2 inch hose line; remove tip.
- 5. <u>INSTALL NOZZLE</u> on each 2-1/2 inch hose line.
- 6. Connect both hose lines to wye.
- 7. Connect wye to shut-off; <u>LEAD IN lines;</u> open shut-off.



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APPENDIX V

GLOSSARY OF TERMS

Certain specific terms are used throughout this Manual and are defined below; these are to be considered the proper Departmental terminology and shall be used as such for standardization.

ADEQUATE HOSE	The amount of hose necessary to carry out a company's operation. The amount needed is to be determined by the company officer. For drill purposes two pulls shall be considered adequate.
ANCHOR HOSE	The technique by which hose is held securely in front of the body with both hands until a sufficient amount is laid from a moving apparatus to prevent the hose from dragging.
APPARTUS - DUAL CARRIER	Are those engine companies that have a complement of 3-1/2 inch or larger hose, in addition to the standard size hose carried on engine companies.
COMPARTMENT	Enclosed space designed and installed on an apparatus for the storage of tools and equipment.
DUTCHMAN	A length of hose folded short within a hose load to avoid a coupling turning end-for-end and snagging while being laid or pulled from apparatus.
FOLD OF HOSE	A length of hose doubled and laid closely to or directly on itself.
HOSE BED	Open compartments on apparatus designed to carry either, 1, 1-1/2 or 3-1/2 inch hose loads.
HOSE LAY	The evolution of removing hose from an apparatus for firefighting or drills.
HOSE LAY (STRAIGHT)	Hose lines) laid from a hydrant or water source to the fireground.

GLOSSARY OF TERMS (Cont'd)

HOSE LAY (REVERSE)	Hose line(s) laid from a fireground to a hydrant or water source.		
HOSE, LAYER OF	All of the hose placed in one horizontal row, within a hose bed, loaded in any of the Depart mentally accepted methods.		
HOSE LOAD	(a)	The amount of hose carried on an apparatus as specified by Department policy and I.S.O. requirements.	
	(b)	The method by which the hose is loaded within the hose bed.	
HOSE PACK	A predetermined amount of 1-1/2 inch hose (nor- mally 300 feet) divided equally with nozzles installed and connected to a 2-1/2 inch "female" X 1-1/2 inch "male" X 1-1/2 inch "male" reducing gated wye, folded and strapped in a manner to form a bundle.		
HOSE PULL	A length of hose withdrawn from the apparatus hose bed until its coupling has cleared the tailboard a minimum of ten feet.		
LEAD IN (HOSE)	The technique of moving a hose line with a nozzle attached to a position where it may be placed in operation.		
PICK UP	Returning equipment or hose to the apparatus from which it was removed.		
SECURE (HOSE)	To fasten to a fixed object by hose or ladder strap to prevent excessive movement.		
SHUT-OFF	(a)	A mechanical device used to control the flow of water, i.e., Metropolitan shut-off.	
	(b)	To cease the flow of water through a hose line or appliance.	

GLOSSARY OF TERMS (Cont'd)

SNUB HOSE	The securing of hose lines) around a hydrant or other fixed object to prevent drag.
SUPPLY LAY	A hose line laid from a hydrant to an engine at the fire scene.
UNLOAD EQUIPMENT	The unloading of the pack, ladders, fire axes and nozzles, at the scene of an emergency. Any equipment in excess of that listed above shall be ordered by company commanders.