



Rural Firefighting

Workbook and  
Answers

# Establish and Deliver Water Supplies Using Light Pumps

RFLP-1A



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**NATIONAL  
TRAINING**

## Introduction

### Overview

This workbook is designed as a self check workbook to help you check your understanding of the information contained in the study guide Establish water supplies and operate light portable pumps. Once you have completed the workbook, check your answers with the model answers at the back of this workbook.

### Practical Course and Assessment

There is also a practical component to this course which will consolidate your learning to date. This includes an assessment for this course. This assessment covers the unit standards 21417 Operate light portable water supplies for fire fighting and 3270 Establish and delivers water supplies for fire fighting. You will need to have an approved assessor assess you against the practical assessment to be awarded these unit standards.

## Workbook Questions

- 1.** List three **safety** considerations for establishing a light portable pump in a vegetation fire situation.

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

- 2.** What equipment would you require to insert a pump into a hose line to set up an open relay?

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

- 3.** List three priming options for a Wajax pump.

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

- 4.** List the three basic types of water supplies. Give an example of each.

Type	Example
1.	_____
2.	_____
3.	_____

**5.** List five items and the number of each item, in a light portable pump kit.

Item	Number in light pump kit
1.	
2.	
3.	
4.	
5.	

**6.** List three possible reasons for a failure to prime when operating a pump.

1. 

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2. 

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3. 

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**7.** Provide two suggestions for restoring a site after doing the following.

1. 

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2. 

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8. Check your understanding of the terminology. Look at the hand signals in the 'Hand signals' table and write the number corresponding to the hand signal in the box next to its meaning.

Hand signals			
1		2	
3		4	
5			

Definition	Hand signal
Decrease pressure	
Knock off	
Water off	
Increase pressure	
Water on	

9. What is the purpose of clearing vegetation from around the pump site?

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10. What would you do as a nozzle operator if you experienced a sudden and unexpected loss of water?

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11. Tick **TRUE** or **FALSE** for the following statements.

	True	False
<b>EXAMPLE:</b> A Wajax pump has four impellers.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Water hammer can be caused by closing a valve too quickly.	<input type="checkbox"/>	<input type="checkbox"/>
Light portable pumps do not have pressure gauges.	<input type="checkbox"/>	<input type="checkbox"/>
Earmuffs are required when running a pump.	<input type="checkbox"/>	<input type="checkbox"/>

**12.** Answer true or false to the following statements about the result of actions during the retrieval and recommissioning of equipment.

Tick <b>TRUE</b> or <b>FALSE</b> for the following statements.	True	False
<b>EXAMPLE:</b> Running a pump 'dry' can damage the shaft seals and bearings.	✓	
Dragging equipment along the ground can damage it.		
Flushing soap and retardant residues into a waterway is OK.		
Vehicles can damage pasture, stream banks, etc.		
After pumping dirty, salty or contaminated water, pumps require flushing.		
If you have been using another Fire Force's equipment, you should leave it behind for them to collect.		
Retardant containers, soap capsules and foam containers can be left on the fire ground.		
Reasonable efforts should be made to refill reservoirs pumped dry during operations.		

## Workbook Answers

1. List three **safety** considerations for establishing a light portable pump in a vegetation fire situation. **Any three of the following.**

1. Clear space around the pump so that the exhaust from a pump or a hot engine will not ignite vegetation
2. Keeping the pump level
3. Physically securing the pump, usually by tying it to something, to prevent it from moving.
4. Be aware of fast flowing and deep water.
5. Ensure that operator is not breathing in exhaust fumes from the pump.

2. What equipment would you require to insert a pump into a hose line to set up an open relay?

Portable dam, suction hose, pump hose, control dividing breech and bypass hose.

3. List three priming options for a Wajax pump.

1. Hand priming pump
2. Hose with foot valve – ‘pumped’ in water supply to fill suction hose and pump
3. Fill suction hose and pump from another container

4. List the three basic types of water supplies. Give an example of each.

Type	Example
1. Static	lakes, rivers and streams, ponds, dams, pools
2. Pressurised (Reticulated)	urban mains
3. Mobile	tankers, fire appliances and helicopters



- 5 List five items and the number of each item, in a light portable pump kit **Any five of the following**

Item	Number in light pump kit
Suction hose and foot valve	1
Spare spark plug and spark plug spanner	1
Delivery hose	4
Pair of earmuffs	1
41 mm controlled dividing breech	2
41 mm nozzles	2
shovel	1
Fuel can ( min 10 litres)	1
Hydroblender or class A foam proportioner and foam concentrate	1

6. List three possible reasons for a failure to prime when operating a pump.

1. Air entering suction hose through loose connections

2. Pump not primed correctly – suction hose and/or pump case not full






3. Air entering suction hose via a vortex

7. Provide two suggestions for restoring a site after doing the following.

**Any two of the following:**

- remove everything that was brought in
- reinstate the area to its previous state
- advise the fire authority should refilling of the reservoir be required
- notify the landowner of the activities
- clean up as required

8. Check your understanding of the terminology. Look at the hand signals in the 'Hand signals' table and write the number corresponding to the hand signal in the box next to its meaning.

Hand signals			
1		2	
3		4	
5			

Definition		Hand signal
Decrease pressure	⇒	5
Knock off	⇒	4
Water off	⇒	2
Increase pressure	⇒	3
Water on	⇒	1

9. What is the purpose of clearing vegetation from around the pump site?

To prevent hot exhaust, sparks or engine parts starting a fire.

10. What would you do as a nozzle operator if you experienced a sudden and unexpected loss of water?

Any one of the following:

- Make self safe
- Contact pump operator to get more water

11. Tick **TRUE** or **FALSE** for the following statements.

	True	False
<b>EXAMPLE:</b> A Wajax pump has four impellers.	✓	
Water hammer can be caused by closing a valve too quickly.	✓	
Light portable pumps do not have pressure gauges.	✓	
Earmuffs are required when running a pump.	✓	

**12.** Answer true or false to the following statements about the result of actions during the retrieval and recommissioning of equipment.

Tick <b>TRUE</b> or <b>FALSE</b> for the following statements.	True	False
<b>EXAMPLE:</b> Running a pump 'dry' can damage the shaft seals and bearings.	✓	
Dragging equipment along the ground can damage it.	✓	
Flushing soap and retardant residues into a waterway is OK.		✓
Vehicles can damage pasture, stream banks, etc.	✓	
After pumping dirty, salty or contaminated water, pumps require flushing.	✓	
If you have been using another Fire Force's equipment, you should leave it behind for them to collect.		✓
Retardant containers, soap capsules and foam containers can be left on the fire ground.		✓
Reasonable efforts should be made to refill reservoirs pumped dry during operations.	✓	