



# Fire Protection Training

Procedures Handbook 4300

ROPES & KNOTS

**TOPIC:** How To Tie A Square Knot

**TIME FRAME:** 10 Minutes

**LEVEL OF INSTRUCTION:**

**BEHAVIORAL OBJECTIVE:**

*Condition:* One length of rope

*Behavior:* The student will tie a square knot.

*Standard:* With a minimum of 100% accuracy, within 20 seconds

**MATERIALS NEEDED:**

- One length of rope per student
- Stop watch
- Performance examination

**REFERENCES:** None

**PREPARATION:** Knot tying is a basic firefighting skill. In emergency operations it is important that each knot be tied quickly and without error. A knot which is used inappropriately or which fails because it was tied improperly can further harm victims, injure fellow firefighters and become an embarrassment to you.

The square knot is generally used to attach two ropes, to connect web ends, and as a first aid knot.



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE A SQUARE KNOT

## OPERATIONS

## KEY POINTS

1. Grasp ropes
2. Cross ropes
3. Wrap running part end
4. Form a bight
5. Pass running part end
6. Tighten knot

**INSTRUCTOR NOTE:** It is recommended that a student who can correctly tie the knot using a different technique than that taught in this lesson be allowed to do so.

- 1a. One running part end in each hand
- 2a. At a point 8" from each running part end
  - 3a. Of left hand rope
    - b. Over, behind and under the right hand running part
  - 4a. With right hand rope
    - 5a. Of left hand rope
      - b. Over, behind and under the right hand running part
    - 6a. Simultaneously
      - b. Pulling both ends
      - c. In opposite directions



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE A SQUARE KNOT

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***APPLICATION:***

The student to practice until proficient.

***EVALUATION:***

A performance examination.

***ASSIGNMENT:***

To be determined by the instructor(s).

# Performance Examination

**INSTRUCTOR NOTE:** It is recommended that a student who can correctly tie the knot using a different technique than that taught in this lesson be allowed to do so.

## POINTS

### TIME START

- |    |                                                                                                           |           |
|----|-----------------------------------------------------------------------------------------------------------|-----------|
| 1. | Grasp one running part end of the rope in each hand                                                       | <u>10</u> |
| 2. | Cross ropes at a point 8" from each running part end                                                      | <u>10</u> |
| 3. | Wrap the running part end of the rope in the left hand over, behind and under the right hand running part | <u>20</u> |
| 4. | Form a bight in the right hand rope                                                                       | <u>20</u> |
| 5. | Pass the running part end of the rope in the left hand over, behind and under the right hand running part | <u>20</u> |
| 6. | Tighten the knot by simultaneously pulling both ends of the rope in opposite directions                   | <u>20</u> |

### TIME STOP

**ENTER TOTAL TIME:** \_\_\_\_\_:

**POINTS POSSIBLE:** 100

**POINTS DEDUCTED:**

**FINAL SCORE:**

**EVALUATOR'S SIGNATURE:**

**DATE:**

### COMMENTS:

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# Fire Protection Training

Procedures Handbook 4300

ROPES & KNOTS

**TOPIC:** How To Tie A Half Hitch

**TIME FRAME:** 10 Minutes

**LEVEL OF INSTRUCTION:**

**BEHAVIORAL OBJECTIVE:**

*Condition:* One length of rope

*Behavior:* The student will demonstrate tying a half hitch.

*Standard:* With a minimum of 100% accuracy in 10 seconds

**MATERIALS NEEDED:**

- One length of rope per student
- Stop watch
- Performance examination

**REFERENCES:** None

**PREPARATION:** Knot tying is a basic firefighting skill. In emergency operations it is important that each knot be tied quickly and without error. A knot which is used inappropriately or which fails because it was tied improperly can further harm victims, injure fellow firefighters and become an embarrassment to you.

The half hitch is generally used as a safety or a "stopper" in conjunction with other knots.



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE A HALF HITCH

## OPERATIONS

## KEY POINTS

1. Grasp rope
2. Form a bight
3. Pass running part end
4. Tighten hitch

**INSTRUCTOR NOTE:** It is recommended that a student who can correctly tie the knot using a different technique than that taught in this lesson be allowed to do so.

- 1a. With working hand on the running part end
  - b. With free hand 2' from the running part end on the standing part
- 2a. With rope
  - b. Around an object
  - c. At midpoint between hands
- 3a. Over and behind the standing part
  - b. Then up through the original bight
- 4a. Simultaneously
  - b. Pulling running part and standing part in opposite directions



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE A HALF HITCH

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***APPLICATION:***

Student to practice until proficient.

***EVALUATION:***

A performance examination.

***ASSIGNMENT:***

To be determined by instructor(s).

# Performance Examination

**INSTRUCTOR NOTE:** It is recommended that a student who can correctly tie the knot using a different technique than that taught in this lesson be allowed to do so.

## **POINTS**

### TIME START

- |    |                                                                                                                               |           |
|----|-------------------------------------------------------------------------------------------------------------------------------|-----------|
| 1. | Grasp rope with working hand at the running part end and with the free hand 2' from the running part end on the standing part | <u>20</u> |
| 2. | Form a bight around an object in such a manner that both legs of the bight are of equal length                                | <u>20</u> |
| 3. | Pass the running part end over and behind the standing part                                                                   | <u>20</u> |
| 4. | Pass the running part end up through the original bight                                                                       | <u>20</u> |
| 5. | Tighten the knot by simultaneously pulling the running part and the standing part in opposite direction                       | <u>20</u> |

### TIME STOP

**ENTER TOTAL TIME:** \_\_\_\_\_:

**POINTS POSSIBLE:** 100

**POINTS DEDUCTED:**

**FINAL SCORE:**

**EVALUATOR'S SIGNATURE:**

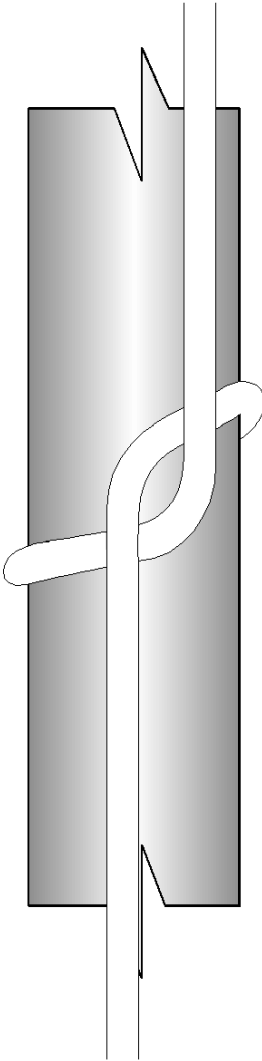
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### **COMMENTS:**

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# Fire Protection Training

Procedures Handbook 4300

ROPES & KNOTS

**TOPIC:** How To Tie A Clove Hitch

**TIME FRAME:** 10 Minutes

**LEVEL OF INSTRUCTION:**

**BEHAVIORAL OBJECTIVE:**

*Condition:* One length of rope and a floor to ceiling support member or cylinder

*Behavior:* The student will demonstrate tying a clove hitch.

*Standard:* With a minimum of 100% accuracy within 20 seconds

**MATERIALS NEEDED:**

- One length of rope per student,
- Stop watch
- Floor to ceiling pipe or support
- Performance examinations

**REFERENCES:** None

**PREPARATION:** Knot tying is a basic firefighting skill. In emergency operations it is important that each knot be tied quickly and without error. A knot which is used inappropriately or which fails because it was tied improperly can further harm victims, injure fellow firefighters and become an embarrassment to you.

Generally used to secure a rope around a round object and is usually finished off with a half hitch as a safety.



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE A CLOVE HITCH

## OPERATIONS

## KEY POINTS

1. Grasp rope
2. Form an underhand loop
3. Form a second underhand loop
4. Tighten the knot

**INSTRUCTOR NOTE:** It is recommended that this knot be tested as taught in the lesson plan. Too often students learn to tie the knot prior to placing it around the object to be secured or hoisted. In the event they are unable to actually slip the knot over the object, (e.g. a floor to ceiling support) the knot is of no value.

- 1a. With working hand at running part end
- b. With free hand 2' from the running part end on the standing part
- 2a. Around an object
- b. Leaving running part of sufficient length to wrap object a second time
- c. Plus an additional 12"
- 3a. Around same object
- b. Above the first underhand loop
- 4a. Simultaneously
- b. Pulling running part end and standing part in opposite directions
- c. Perpendicular to long axis of the object tied



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE A CLOVE HITCH

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***APPLICATION:***

Student to practice until proficient.

***EVALUATION:***

A performance examination.

***ASSIGNMENT:***

To be determined by instructor(s).

# Performance Examination

INSTRUCTOR NOTE: Tie this knot on a floor to ceiling support or pipe to prevent simply sliding a clove hitch over the upper end.

**POINTS**

TIME START

- |    |                                                                                                                                                        |           |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 1. | Grasp rope with either hand at the running part end                                                                                                    | <u>20</u> |
| 2. | Form an underhand loop around the object being used as an anchor leaving sufficient running part rope to wrap the object a second time with 12" excess | <u>20</u> |
| 3. | Form a second underhand loop around the object above the first loop                                                                                    | <u>20</u> |
| 4. | Tighten the knot by simultaneously pulling on the running part end and the standing part                                                               | <u>20</u> |
| 5. | Pull perpendicular to long axis of object being wrapped to preclude slippage                                                                           | <u>20</u> |

TIME STOP

ENTER TOTAL TIME: \_\_\_\_\_:

POINTS POSSIBLE: 100

POINTS DEDUCTED:

FINAL SCORE:

EVALUATOR'S SIGNATURE:

DATE:

COMMENTS:

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# Fire Protection Training

Procedures Handbook 4300

ROPES & KNOTS

**TOPIC:** How To Tie A Figure Eight Knot

**TIME FRAME:** 10 Minutes

**LEVEL OF INSTRUCTION:**

**BEHAVIORAL OBJECTIVE:**

*Condition:* One piece of rope for each student

*Behavior:* The student will tie a figure eight knot.

*Standard:* With a minimum of 100% accuracy within 20 seconds

**MATERIALS NEEDED:**

- Rope
- Stop watch
- Performance examination

**REFERENCES:** None

**PREPARATION:** The figure eight knot is essential to rescue operations involving pulley systems. It is the knot that will prevent a line from slipping through the pulley should anything fail.



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE A FIGURE EIGHT KNOT

## OPERATIONS

## KEY POINTS

1. Grasp rope
2. Form a bight
3. Form a loop
4. Pass the running part end
5. Tighten knot

**INSTRUCTOR NOTE:** It is recommended that a student who can correctly tie the knot using a different technique than that taught in this lesson be allowed to do so.

- 1a. With working hand
  - b. At running part end
- 2a. With rope
  - b. 2' from running part end
  - c. Running part of bight must be to the left
  - d. Closed end of the bight pointing up
- 3a. Twisting bight
  - b. 360o
  - c. To the right
- 4a. Without releasing the running part or standing part
  - b. Behind and through the loop
  - c. Towards the firefighter
- 5a. Simultaneously pulling running part and standing part



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE A FIGURE EIGHT KNOT

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***APPLICATION:***

Student to practice until proficient.

***EVALUATION:***

A performance examination.

***ASSIGNMENT:***

To be determined by instructor(s).

# Performance Examination

## POINTS

INSTRUCTOR NOTE: It is recommended that a student who can correctly tie the knot using a different technique than that taught in this lesson be allowed to do so. 10

### TIME START

1. Grasp the rope with working hand at the running part end 20
2. Form a bight 2' from the running part end with the running part as the left leg of the bight and the closed end of the bight pointed upwards 20
3. Form a loop by twisting the loop 360o to the right 20
4. Without releasing the running part or standing part pass the running part end behind and through the loop towards the student 20
5. Tighten the knot by simultaneously pulling the running part and the standing part in opposite direction 20

### TIME STOP

**ENTER TOTAL TIME:** \_\_\_\_\_:

**POINTS POSSIBLE:** 100

**POINTS DEDUCTED:**

**FINAL SCORE:**

**EVALUATOR'S SIGNATURE:**

**DATE:**

**COMMENTS:**



# Fire Protection Training

Procedures Handbook 4300

ROPES & KNOTS

**TOPIC:** How To Tie A Figure Eight Follow Through Knot

**TIME FRAME:** 10 Minutes

**LEVEL OF INSTRUCTION:**

**BEHAVIORAL OBJECTIVE:**

*Condition:* One piece of rope for each student.

*Behavior:* The student will tie a figure eight follow through knot.

*Standard:* With a minimum of 100% accuracy within 40 seconds

**MATERIALS NEEDED:**

- One piece of rope per student
- Clipboard
- Stop watch
- Performance examinations

**REFERENCES:** None

**PREPARATION:**

Knot tying is a basic firefighting skill. In emergency operations it is important that each knot be tied quickly and without error. A knot which is used inappropriately or which fails because it was tied improperly can further harm victims, injure fellow firefighters and become an embarrassment to you.

The figure eight follow through knot is particularly good for joining two sections of rope together and for special rescue applications.



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE A FIGURE EIGHT  
FOLLOW THROUGH KNOT

## OPERATIONS

## KEY POINTS

1. Grasp rope
2. Form a bight
3. Form a loop
4. Pass the running part end
5. Leave the figure eight knot loose
6. Align ends of rope
7. Trace the previously tied figure eight knot
8. Tighten figure eight follow through knot

**INSTRUCTOR NOTE:** It is recommended that a student who can correctly tie the knot using a different technique than that taught in this lesson be allowed to do so.

- 1a. With working hand
- b. At running part end
- 2a. With rope
- b. 2' from running part end
- c. Running part of bight must be to the left
- d. Closed end of the bight pointing up
- 3a. Twisting bight
- b. 360o
- c. To the right
- 4a. Without releasing the running part or standing part
- b. Behind and through the loop
- c. Towards the firefighter
- 6a. Standing part end to running part end or running part end of rope #2 to running part end of rope #1
- 7a. In reverse direction
- b. Beginning where the running part end of rope #1 exited the figure eight knot
- c. Continuing until the running part end of rope #2 exits the figure eight knot at the standing part of rope #1
- 8a. Simultaneously pulling the segments of rope at each end of the figure eight knots in opposite directions

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# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE A FIGURE EIGHT  
FOLLOW THROUGH KNOT

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***APPLICATION:***

Student to practice until proficient.

***EVALUATION:***

A performance examination.

***ASSIGNMENT:***

To be determined by instructor(s).

## POINTS

INSTRUCTOR NOTE: It is recommended that a student who can correctly tie the knot using a different technique than that taught in this lesson be allowed to do so.

### TIME START

1. Grasp the rope with working hand at the running part end 10
2. Form a bight 2' from the running part end with the running part as the left leg of the bight and the closed end of the bight pointed upwards 10
3. Form a loop by twisting the loop 360o to the right 20
4. Without releasing the running part or standing part pass the running part end behind and through the loop towards the student leaving the knot loose 20
5. Align the ends of the ropes to be used either the standing and running parts ends of a single rope or the running part ends of two ropes 10
6. Trace in reverse the previously tied figure eight knot beginning where the running part end exits the knot and ending where the standing part enters the previously tied knot 20
7. Tighten knot by simultaneously pulling the running parts and the standing parts in opposite directions. 10

### TIME STOP

**ENTER TOTAL TIME:**      :

**POINTS POSSIBLE:** 100

**POINTS DEDUCTED:**

**FINAL SCORE:**

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Page 1

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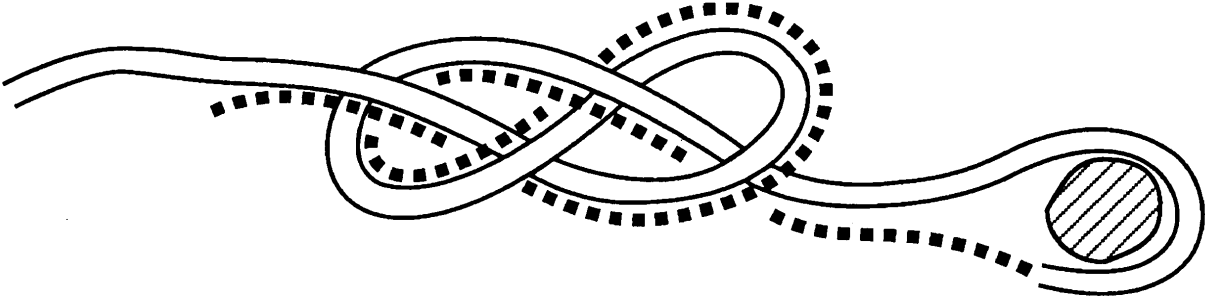
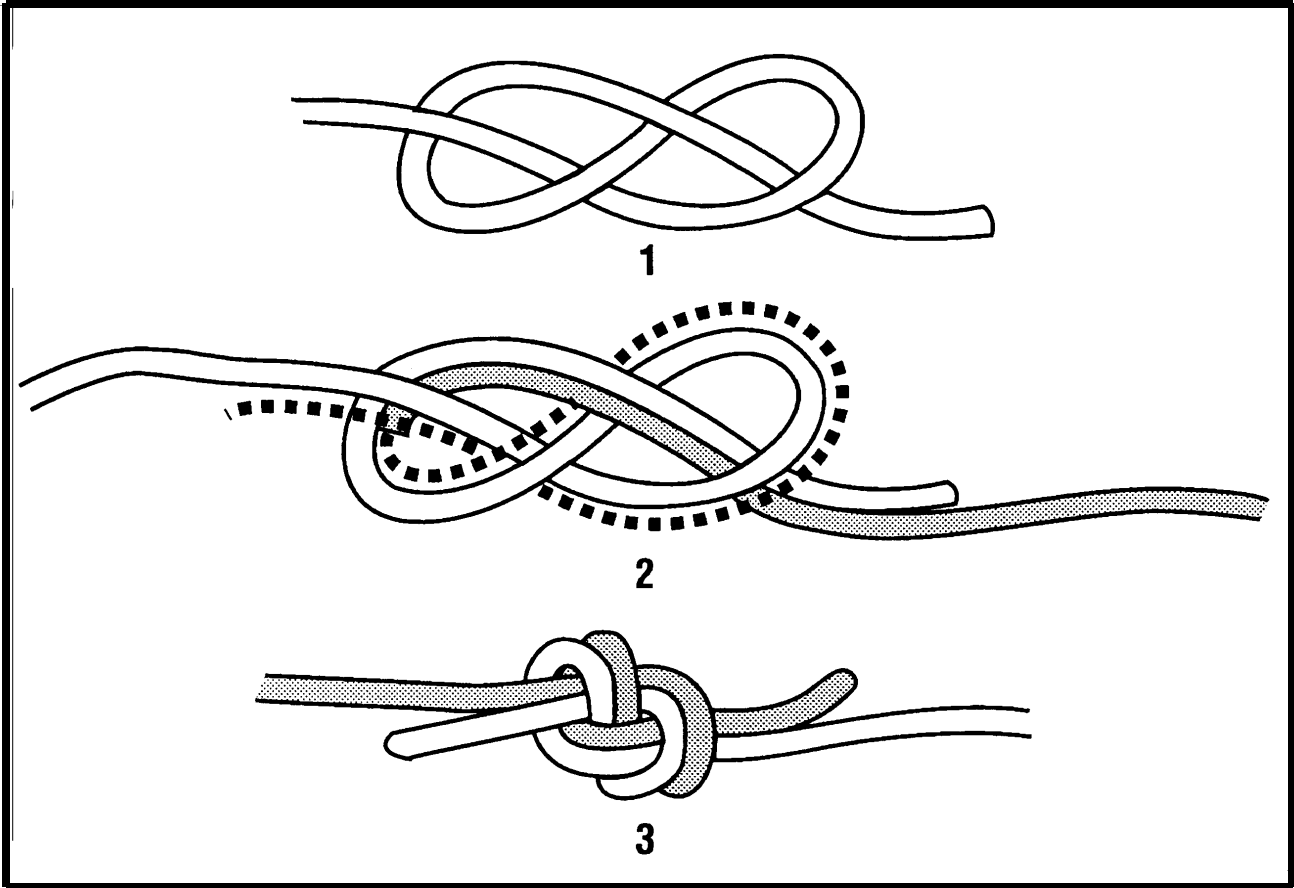
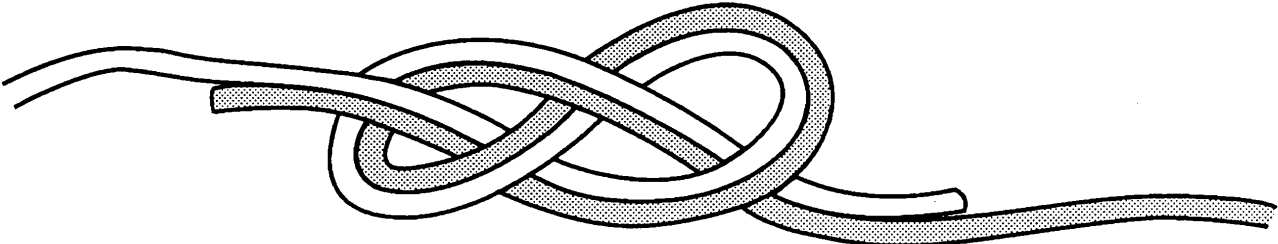
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# Fire Protection Training

Procedures Handbook 4300

HOSE

**TOPIC:** How To Tie A Figure Eight Knot On A Bight

**TIME FRAME:** 20 Minutes

**LEVEL OF INSTRUCTION:**

**BEHAVIORAL OBJECTIVE:**

*Condition:* One piece of rope per student

*Behavior:* The student will tie a figure eight knot on a bight.

*Standard:* With a minimum of 100% accuracy within 30 seconds

**MATERIALS NEEDED:**

- Rope
- Stop watch
- Performance examinations

**REFERENCES:** None

**PREPARATION:** Knot tying is a basic firefighting skill. In emergency operations it is important that each knot be tied quickly and without error. A knot which is used inappropriately or which fails because it was tied improperly can further harm victims, injure fellow firefighters and become an embarrassment to you.

This knot is used primarily as a rescue knot.



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE A FIGURE EIGHT  
KNOT ON A BIGHT

## OPERATIONS

## KEY POINTS

1. Form a bight
2. Grasp bight
3. Release closed end of bight
4. Grasp rope
5. Form a loop
6. Pass original bight
7. Tighten knot

**INSTRUCTOR NOTE:** It is recommended that a student who can correctly tie the knot using a different technique than that taught in this lesson be allowed to do so.

- 1a. Each leg 4' long
- b. Closed end up end
- 2a. With either hand
- b. 2' from closed end of bight
- 4a. At midpoint of all four legs
- b. With running part end on right
- 5a. Twisting newly formed bight
- b. 360o      c. To the right
- 6a. Without releasing running part or standing part
- b. Behind
- c. Through the loop
- d. Towards the firefighter
- 7a. Simultaneously
- b. Pulling running part and standing part
- c. In opposite directions



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE A FIGURE EIGHT  
KNOT ON A BIGHT

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***APPLICATION:***

Student to practice until proficient.

***EVALUATION:***

A performance examination.

***ASSIGNMENT:***

To be determined by instructor(s).

## POINTS

INSTRUCTOR NOTE: It is recommended that a student who can correctly tie the knot using a different technique than that taught in this lesson be allowed to do so.

### TIME START

- |    |                                                                                                              |           |
|----|--------------------------------------------------------------------------------------------------------------|-----------|
| 1. | Form a bight with each leg four feet long and the closed end of the bight up                                 | <u>15</u> |
| 2. | Grasp the bight with either hand at the midpoint of both legs with the running part end on the right         | <u>15</u> |
| 3. | Allow the closed end of the bight to fall by releasing the hand holding the bight up                         | <u>10</u> |
| 4. | Form a loop by twisting the newly formed bight 360o to the right                                             | <u>20</u> |
| 5. | Without releasing either hand pass the original bight behind and through the loop towards the firefighter    | <u>20</u> |
| 6. | Tighten the knot by simultaneously pulling the running part end and the standing part in opposite directions | <u>20</u> |

### TIME STOP

**ENTER TOTAL TIME:** \_\_\_\_\_:

**POINTS POSSIBLE:** 100

**POINTS DEDUCTED:**

**FINAL SCORE:**

**EVALUATOR'S SIGNATURE:**

**DATE:**

**COMMENTS:**

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# Fire Protection Training

Procedures Handbook 4300

ROPES & KNOTS

**TOPIC:** How To Tie A Double Figure Eight Knot On A Bight

**TIME FRAME:** 20 Minutes

**LEVEL OF INSTRUCTION:**

**BEHAVIORAL OBJECTIVE:**

*Condition:* A piece of rope per student

*Behavior:* The student will tie a double figure eight knot on a bight.

*Standard:* With a minimum of 70% accuracy within 40 seconds

**MATERIALS NEEDED:**

- One piece of rope per student
- Stop watch
- Performance examinations

**REFERENCES:** None

**PREPARATION:** Knot tying is a basic firefighting skill. In emergency operations it is important that each knot be tied quickly and without error. A knot which is used inappropriately or which fails because it was tied improperly can further harm victims, injure fellow firefighters and become an embarrassment to you.

The double figure eight knot on a bight is another fundamental rescue knot. It is used often to replace the Bowline on a bight knot.



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE A DOUBLE FIGURE  
EIGHT KNOT ON A BIGHT

## OPERATIONS

## KEY POINTS

1. Form a bight
2. Grasp bight
3. Release closed end of bight
4. Grasp rope
5. Form a loop
6. Pass original bight
7. Position knot
8. Pass closed end of bight
9. Pass the double bight
10. Extend single bight

**INSTRUCTOR NOTE:** It is recommended that a student who can correctly tie the knot using a different technique than that taught in this lesson be allowed to do so.

- 1a. Each leg 4' long
- b. Closed end up
- 2a. With either hand
- b. 2' from closed end of bight
- 4a. At midpoint of all four legs
- b. With running part end on right
- 5a. Twisting bight
- b. 360°c. To the right
- 6a. Without releasing running part or standing part
- b. Behind
- c. Through the loop
- d. Towards the firefighter
- 7a. Within 6" of running part end
- b. Leave knot loose
- 8a. Back down through the bight's exit point from the figure eight knot
- b. To midpoint of the bight legs
- 9a. Back through the single bight
- 10a. To a point below the original figure eight knot



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE A DOUBLE FIGURE  
EIGHT KNOT ON A BIGHT

## OPERATIONS

## KEY POINTS

11. Tighten knot

- 11a. Holding running part end and standing part in either hand
- b. Alternately pull all four legs of double bight in opposite directions
- c. Keeping both bights equal size



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE A DOUBLE FIGURE  
EIGHT KNOT ON A BIGHT

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***APPLICATION:***

Student to practice until proficient.

***EVALUATION:***

A performance examination.

***ASSIGNMENT:***

To be determined by instructor(s).

# Performance Examination

HOW TO TIE A DOUBLE FIGURE  
EIGHT KNOT ON A BIGHT

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## POINTS

INSTRUCTOR NOTE: It is recommended that a student who can correctly tie the knot using a different technique than that taught in this lesson be allowed to do so.

### TIME START

- |     |                                                                                                                                                |           |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 1.  | Form a bight with each leg four feet long and the closed end of the bight up                                                                   | <u>10</u> |
| 2.  | Grasp the bight with either hand at the midpoint of both legs with the running part end on the right                                           | <u>10</u> |
| 3.  | Allow the closed end of the bight to fall by releasing the hand holding the bight up                                                           | <u>5</u>  |
| 4.  | Form a loop by twisting the newly formed bight 360o to the right                                                                               | <u>5</u>  |
| 5.  | Without releasing either hand pass the original bight behind and through the loop towards the firefighter                                      | <u>20</u> |
| 6.  | Leaving the knot loose, position it within 6" of the running part end                                                                          | <u>10</u> |
| 7.  | Pass the closed end of the bight back down through the bight's exit point from the figure eight knot until the midpoint of the legs is reached | <u>10</u> |
| 8.  | Pass the double bight back through the single bight until the single bight reaches a point below the original figure eight knot                | <u>10</u> |
| 9.  | Tighten the knot by alternately pulling each of the four legs of the double bight in opposite directions                                       | <u>10</u> |
| 10. | Adjust knot so that each bight remains equal in size to the other                                                                              | <u>10</u> |

### TIME STOP

**ENTER TOTAL TIME:** \_\_\_\_\_:

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**POINTS**

**POINTS POSSIBLE:**          100    

**POINTS DEDUCTED:**

**FINAL SCORE:**

**EVALUATOR'S SIGNATURE:**

**DATE:**

**COMMENTS:**

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# Fire Protection Training

Procedures Handbook 4300

ROPES & KNOTS

**TOPIC:** How To Tie A Becket Bend (Sheet Bend)

**TIME FRAME:** 15 Minutes

**LEVEL OF INSTRUCTION:**

**BEHAVIORAL OBJECTIVE:**

*Condition:* One length of rope per student

*Behavior:* The student will tie a becket bend.

*Standard:* With a minimum of 100% accuracy within 20 seconds

**MATERIALS NEEDED:**

- One length of rope per student
- Stop watch
- Performance examinations

**REFERENCES:** None

**PREPARATION:** Knot tying is a basic firefighting skill. In emergency operations it is important that each knot be tied quickly and without error. A knot which is used inappropriately or which fails because it was tied improperly can further harm victims, injure fellow firefighters and become an embarrassment to you.

This knot is especially effective in joining two ropes of unequal diameter and is not likely to slip when the ropes are wet.



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE A BECKET  
BEND (SHEET BEND)

## OPERATIONS

## KEY POINTS

1. Form a bight
2. Pass the standing part end
3. Pass the standing part end
4. Pass the standing part end
5. Tighten the knot

**INSTRUCTOR NOTE:** It is recommended that a student who can correctly tie the knot using a different technique than that taught in this lesson be allowed to do so.

- 1a. If unequal rope sizes form in the larger rope
  - b. 6" from running part end
- 2a. Up through the bight
- 3a. While holding the bight parallel to the ground in one hand
  - b. Over, behind and around both legs of the bight
  - c. Between the hand holding the bight and the running part of the rope
- 4a. Under its own standing part over both legs of the bight
- 5a. Pulling the running part and standing part of each rope in opposite directions

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# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE A BECKET  
BEND (SHEET BEND)

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***APPLICATION:***

Student to practice until proficient.

***EVALUATION:***

A performance examination.

***ASSIGNMENT:***

To be determined by instructor(s).

## POINTS

INSTRUCTOR NOTE: It is recommended that a student who can correctly tie the knot using a different technique than that taught in this lesson be allowed to do so.

### TIME START

- |    |                                                                                                                  |           |
|----|------------------------------------------------------------------------------------------------------------------|-----------|
| 1. | Form a bight in the rope approximately six inches from the running part end                                      | <u>20</u> |
| 2. | While holding the bight parallel to the ground, pass the standing part end up through the bight                  | <u>20</u> |
| 3. | Pass the standing part end over, behind and around both legs of the bight                                        | <u>20</u> |
| 4. | Pass the standing part end under its own standing part and over both legs of the bight                           | <u>20</u> |
| 5. | Tighten the knot by simultaneously pulling the running part end and the standing part end in opposite directions | <u>20</u> |

### TIME STOP

**ENTER TOTAL TIME:** \_\_\_\_\_:

**POINTS POSSIBLE:** 100

**POINTS DEDUCTED:**

**FINAL SCORE:**

**EVALUATOR'S SIGNATURE:**

**DATE:**

**COMMENTS:**

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# Fire Protection Training

Procedures Handbook 4300

ROPES & KNOTS

**TOPIC:** How To Tie A Bowline Knot - Open

**TIME FRAME:** 15 Minutes

**LEVEL OF INSTRUCTION:**

**BEHAVIORAL OBJECTIVE:**

*Condition:* One piece of rope

*Behavior:* The student will tie a bowline knot – open.

*Standard:* With a minimum of 100% accuracy within 30 seconds

**MATERIALS NEEDED:**

- One piece of rope per student
- Stop watch
- Performance examination

**REFERENCES:** None

**PREPARATION:** Knot tying is a basic firefighting skill. In emergency operations it is important that each knot be tied quickly and without error. A knot which is used inappropriately or which fails because it was tied improperly can further harm victims, injure fellow firefighters and become an embarrassment to you.

The bowline knot is one of the most widely used knots in the fire service because it does not slip while under load and it is easy to untie. The bowline also provides a loop in the end of the rope which can be used as the base for other rope maneuvers.



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE A BOWLINE KNOT-OPEN

## OPERATIONS

## KEY POINTS

1. Grasp rope
2. Form an overhand loop
3. Grasp overhand loop
4. Pass running part end
5. Pass the running part end
6. Pass the running part end
7. Tighten knot

**INSTRUCTOR NOTE:** It is recommended that a student who can correctly tie the knot using a different technique than that taught in this lesson be allowed to do so.

- 1a. Working hand on running part end
  - b. Non working hand sufficient distance from running part end to create desired size loop or to circle object
- 2a. In rope standing part
  - b. At location of non-working hand
  - c. Twisting thumb and wrist outward from body
  - d. Running part over standing part
- 3a. With non-working hand
  - b. At intersection of running part and standing part
  - c. Holding loop parallel to the ground
- 4a. Up through the loop
  - b. Crossing over the point at which the running part and standing part intersected forming the original loop
- 5a. Behind and under the standing part
- 6a. Back down through the newly formed loop
  - b. Forming a bight around the standing part outside the original loop
- 7a. Holding bight formed by running part and running part end around the standing part
  - b. Simultaneously pulling standing part
  - c. Until snug

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# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE A BOWLINE KNOT-OPEN

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***APPLICATION:***

Student to practice until proficient.

***EVALUATION:***

A performance examination.

***ASSIGNMENT:***

To be determined by instructor(s).

# Performance Examination

**INSTRUCTOR NOTE:** It is recommended that a student who can correctly tie the knot using a different technique than that taught in this lesson be allowed to do so.

## POINTS

### TIME START

- |    |                                                                                                                                                                                                  |           |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 1. | Grasp the running part end with the working hand and at a point two feet from the running part end, grasp the standing part, with the non-working hand                                           | <u>10</u> |
| 2. | Form a overhand loop at the location of the non-working hand                                                                                                                                     | <u>10</u> |
| 3. | Grasp the loop at the point where the running part and standing part cross with the non-working hand                                                                                             | <u>10</u> |
| 4. | Holding the loop parallel to the ground pass the running part end upwards through the loop then crossing over point where the standing part and running part intersect forming the original loop | <u>20</u> |
| 5. | Pass the running part end behind and under the standing part outside the original loop                                                                                                           | <u>20</u> |
| 6. | Pass the running part end back through the newly formed loop at the base of the original loop forming a bight on the standing part outside the original loop                                     | <u>20</u> |
| 7. | Tighten knot by holding the running part and the running part end forming the bight around the standing part and simultaneously pulling the standing part until snug                             | <u>10</u> |

### TIME STOP

**ENTER TOTAL TIME:** \_\_\_\_\_:

**POINTS POSSIBLE:** 100

**POINTS DEDUCTED:**

**FINAL SCORE:**

# Performance Examination

HOW TO TIE A BOWLINE KNOT-OPEN

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**EVALUATOR'S SIGNATURE:**

**DATE:**

**COMMENTS:**

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# Fire Protection Training

Procedures Handbook 4300

ROPES & KNOTS

**TOPIC:** How To Tie A Bowline On A Safety Line

**TIME FRAME:** 15 Minutes

**LEVEL OF INSTRUCTION:**

**BEHAVIORAL OBJECTIVE:**

*Condition:* One piece of rope

*Behavior:* The student will tie a bowline on a safety line around him or herself.

*Standard:* With a minimum of 100% accuracy within 30 seconds

**MATERIALS NEEDED:**

- One piece of rope per student
- Stop watch
- Performance examination

**REFERENCES:** None

**PREPARATION:** Knot tying is a basic firefighting skill. In emergency operations it is important that each knot be tied quickly and without error. A knot which is used inappropriately or which fails because it was tied improperly can further harm victims, injure fellow firefighters and become an embarrassment to you.

Whenever a firefighter is entering an environment which dictates the use of a safety line it is imperative that a strong and secure knot be employed. The bowline is such a knot.



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE A BOWLINE ON A  
SAFETY LINE

## OPERATIONS

## KEY POINTS

1. Grasp rope
2. Position loop
3. Form a bight
4. Form an overhand loop
5. Form a second overhand loop

**INSTRUCTOR NOTE:** It is recommended that a student who can correctly tie the knot using a different technique than that taught in this lesson be allowed to do so.

- 1a. At running part end with working hand
- b. At a point approximately five feet from the running part end with the non-working hand
- 2a. Behind back
- b. At waist level
- c. Parallel to the ground
- d. Both arms fully extended
- 3a. Around student's body
- b. Until running part end and standing part are to students front
- 4a. To front of body
- b. At waist level
- c. With running part end overlapping standing part by six inches
- 5a. Leaving slack in all sections of rope
- b. Passing running part end up through the first loop
- c. Simultaneously extending the running part end outward from the body and bringing standing part towards the body to create slack
- d. Until second small overhand loop forms



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE A BOWLINE ON A  
SAFETY LINE

## OPERATIONS

## KEY POINTS

6. Form a bight

6a. Passing running part end under and behind the standing part at a point outside the loops

b. Forming a bight around the standing part

7. Pass the running part end

7a. Down through the small loop

b. Running part end should pass between the body and the standing part

8. Tighten knot

8a. Simultaneously grasping the running part end and the standing part

b. Pulling in opposite directions



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE A BOWLINE ON A  
SAFETY LINE

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***APPLICATION:***

Student to practice until proficient.

***EVALUATION:***

A performance examination.

***ASSIGNMENT:***

To be determined by instructor(s).

## POINTS

INSTRUCTOR NOTE: It is recommended that a student who can correctly tie the knot using a different technique than that taught in this lesson be allowed to do so.

### TIME START

- |    |                                                                                                                                                                 |           |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 1. | Grasp rope at the running part end with the working hand and at a point five feet from the running part end with the non-working hand                           | <u>10</u> |
| 2. | Pass the rope behind your back, parallel to the ground, at waist level with arms extended outward                                                               | <u>10</u> |
| 3. | Move arms to front of the body to form a bight around yourself                                                                                                  | <u>10</u> |
| 4. | Form an overhand loop to the front of the student's body with six inches of the running part end extending beyond the standing part                             | <u>10</u> |
| 5. | Pass the running part end over, behind and under the standing part and then up through the first loop                                                           | <u>10</u> |
| 6. | Form a small second loop by simultaneously extending the running part end outward from the body and supplying slack to the standing part                        | <u>15</u> |
| 7. | Form a bight around the standing part outside the loops by passing the running part end under and behind the standing part                                      | <u>15</u> |
| 8. | Pass the running part end down through the new loop with running part end on the inside of the loop                                                             | <u>10</u> |
| 9. | Tighten the knot by holding the running part and the running part end which formed the bight and pulling the standing part in the opposite direction until snug | <u>10</u> |

### TIME STOP

ENTER TOTAL TIME: \_\_\_\_\_:

**POINTS**

**POINTS POSSIBLE:**      100

**POINTS DEDUCTED:**

**FINAL SCORE:**

**EVALUATOR'S SIGNATURE:**

**DATE:**

**COMMENTS:**

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# Fire Protection Training

Procedures Handbook 4300

ROPES & KNOTS

**TOPIC:** How To Tie A Running Bowline Knot Around An Object

**TIME FRAME:** 15 Minutes

**LEVEL OF INSTRUCTION:**

**BEHAVIORAL OBJECTIVE:**

*Condition:* One piece of rope and a tree or floor to ceiling support member

*Behavior:* The student will tie a running bowline knot.

*Standard:* With a minimum of 100% accuracy within 30 seconds

**MATERIALS NEEDED:**

- One piece of rope per student
- Stop watch
- Performance examination

**REFERENCES:** None

**PREPARATION:** Knot tying is a basic firefighting skill. In emergency operations it is important that each knot be tied quickly and without error. A knot which is used inappropriately or which fails because it was tied improperly can further harm victims, injure fellow firefighters and become an embarrassment to you.

The running bowline is used most effectively to tie around an object where access to top and/or bottom is limited and it is necessary for the knot to slide up or down that object.

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# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE A RUNNING BOWLINE  
KNOT AROUND AN OBJECT

## OPERATIONS

## KEY POINTS

1. Grasp rope

2. Form an underhand loop

3. Form an overhand loop

4. Pass the running part end

5. Pass the running part end

6. Pass the running part end

7. Tighten the knot

**INSTRUCTOR NOTE:** It is recommended that a student who can correctly tie the knot using a different technique than that taught in this lesson be allowed to do so.

1a. At running part end with working hand

b. At a point on the rope 4' from the running part end with the non-working hand

2a. Around the object to be tied

b. With running part end extending 12" beyond the standing part

3a. In the running part leg of the first (underhand) loop

b. By twisting the thumb and wrist away from the body

4a. Back across the top of the intersection of the running part and standing part in the original (underhand) loop

b. Then up through the center of the second or overhand loop

5a. Around the standing part of the second (overhand) loop

b. At a point within the first (underhand) loop

c. But immediately outside the second (overhand) loop

6a. Down through the top of the second (overhand) loop

7a. Grasping both legs of the bight just formed

b. Simultaneously pulling the standing part in the opposite direction



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE A RUNNING BOWLINE  
KNOT AROUND AN OBJECT

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***APPLICATION:***

Student to practice until proficient.

***EVALUATION:***

A performance examination.

***ASSIGNMENT:***

To be determined by instructor(s).

# Performance Examination

**INSTRUCTOR NOTE:** It is recommended that a student who can correctly tie the knot using a different technique than that taught in this lesson be allowed to do so.

## POINTS

### TIME START

- |    |                                                                                                                                                                     |           |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 1. | Grasp the rope at the running part end with the working hand and at a point four feet from the running part end with the non-working hand                           | <u>10</u> |
| 2. | Form an underhand loop crossing the running part end under and twelve inches beyond the standing part                                                               | <u>10</u> |
| 3. | Form an overhand loop in the running part section or leg of the first (underhand) loop                                                                              | <u>20</u> |
| 4. | Pass the running part end back across the top of the intersection of the running part and standing part which created the original (underhand) loop                 | <u>10</u> |
| 5. | Form a bight around the standing part of the second (overhand) loop at a point within the first (underhand) loop but immediately outside the second (overhand) loop | <u>20</u> |
| 6. | Pass the running part end down through the top of the second (overhand) loop adjacent to the other leg of the bight in the rope running part                        | <u>20</u> |
| 7. | Tighten knot by grasping both legs of the bight and simultaneously pulling the standing part in the opposite direction                                              | <u>10</u> |

### TIME STOP

**ENTER TOTAL TIME:** \_\_\_\_\_:

**POINTS POSSIBLE:** 100

**POINTS DEDUCTED:** \_\_\_\_\_

**FINAL SCORE:** \_\_\_\_\_

**EVALUATOR'S SIGNATURE:**

**DATE:**

**COMMENTS:**

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# Fire Protection Training

Procedures Handbook 4300

ROPES & KNOTS

**TOPIC:** How To Tie A Timber Hitch

**TIME FRAME:** 20 Minutes

**LEVEL OF INSTRUCTION:**

**BEHAVIORAL OBJECTIVE:**

*Condition:* A piece of rope, log or similar solid object.

*Behavior:* Student will tie a timber hitch.

*Standard:* With a minimum of 100% accuracy within 30 seconds

**MATERIALS NEEDED:**

- Rope
- Log or other solid object
- Stop watch
- Performance examinations

**REFERENCES:** None

**PREPARATION:** Knot tying is a basic firefighting skill. In emergency operations it is important that each knot be tied quickly and without error. A knot which is used inappropriately or which fails because it was tied improperly can further harm victims, injure fellow firefighters and become an embarrassment to you.

The timber hitch is used to drag logs or other objects and to provide a temporary attachment. It is easily tied and untied.



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE A TIMBER HITCH

## OPERATIONS

## KEY POINTS

- | OPERATIONS                   | KEY POINTS                                                                                                                               |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Grasp rope                | 1a. Running part end with working hand<br>b. Standing part end with non-working hand                                                     |
| 2. Form an overhand loop     | 2a. Around the object to be tied<br>b. With at least 18" excess on running part end                                                      |
| 3. Pass the running part end | 3a. Behind and under the standing part<br>b. Then over running part leg of the original (overhand) loop<br>c. Then down through the loop |
| 4. Wrap the running part end | 4a. Completely around the running part leg of the original (overhand) loop<br>b. A minimum of three full wraps                           |
| 5. Tighten hitch             | 5a. Holding running part end in place<br>b. Pulling standing part in opposite direction                                                  |

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# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE A TIMBER HITCH

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***APPLICATION:***

Student to practice until proficient.

***EVALUATION:***

A performance examination.

***ASSIGNMENT:***

To be determined by instructor(s).

# Performance Examination

## POINTS

### START TIME

- |    |                                                                                                                              |           |
|----|------------------------------------------------------------------------------------------------------------------------------|-----------|
| 1. | Grasp rope with running part end in the working hand and the standing part in the non-working hand                           | <u>10</u> |
| 2. | Form an overhand loop around the object to be tied with at least 18" excess in the running part end                          | <u>20</u> |
| 3. | Pass the running part end behind and under the standing part                                                                 | <u>20</u> |
| 4. | Pass the running part end over the running part leg of the original (overhand) loop then down through the loop               | <u>20</u> |
| 5. | Wrap the running part end completely around the running part leg of the original (overhand) loop minimum of three full wraps | <u>20</u> |
| 6. | Tighten the hitch by holding the running part end in place and pulling the standing part in the opposite direction           | <u>10</u> |

### TIME STOP

**ENTER TOTAL TIME:** \_\_\_\_\_:

**POINTS POSSIBLE:** 100

**POINTS DEDUCTED:**

**FINAL SCORE:**

**EVALUATOR'S SIGNATURE:**

**DATE:**

**COMMENTS:**

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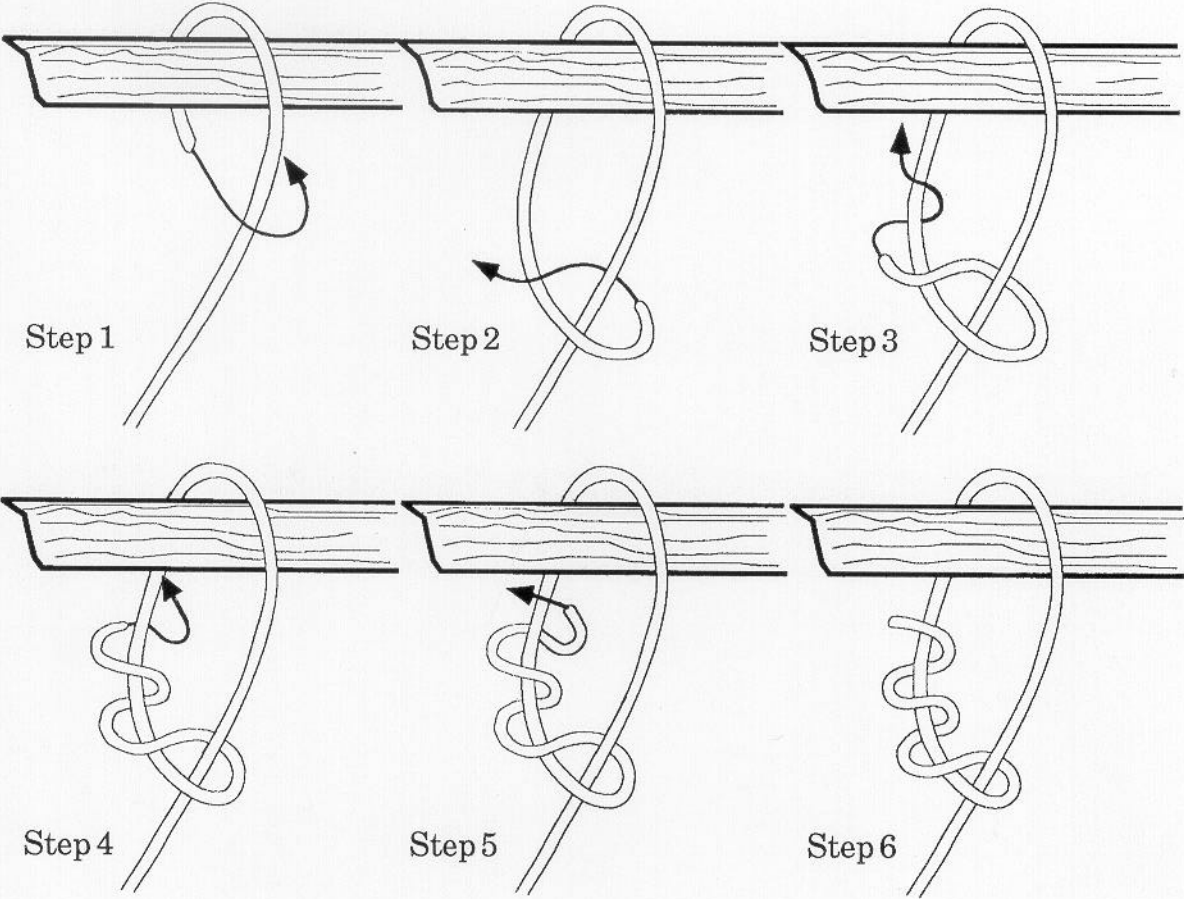
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### TIMBER HITCH

The timber hitch forms a secure temporary fastening, which may be easily untied. It was devised for hoisting timbers or logs. The timber hitch is used for tying to an object where choking or cinching is required.





# Fire Protection Training

Procedures Handbook 4300

ROPES & KNOTS

**TOPIC:** How to Tie Off a Charged Hose Line for Hoisting

**TIME FRAME:** 30 Minutes

**LEVEL OF INSTRUCTION:**

**BEHAVIORAL OBJECTIVE:**

*Condition:* One length of hose with a nozzle attached, a length of rope, and a means for charging the hose line with water.

*Behavior:* The student will tie off a charged hoseline, for an above ground hoist under simulated fireground conditions.

*Standard:* With a minimum of 100% accuracy within 30 seconds

**MATERIALS NEEDED:**

- One length of rope
- One stop watch
- One charged hoseline with nozzle

**REFERENCES:**

- IFSTA, Essentials of Fire Fighting, 2nd Edition, Chapter 3
- IFSTA, Hose Practices, 7th Edition, Chapter 7

**PREPARATION:** The ability to effectively use ropes, knots, and hitches is a basic skill which every firefighter should possess. It is critical that every firefighter perform these skills in a professional manner. Failure to do so can result in serious injury to personnel and/or damage equipment.



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE OFF A CHARGED  
HOSE LINE FOR HOISTING

## OPERATIONS

## KEY POINTS

- | OPERATIONS           | KEY POINTS                                                                          |
|----------------------|-------------------------------------------------------------------------------------|
| 1. Position rope     | 1a. Along side nozzle and hose<br>b. From nozzle to a point 6' below nozzle         |
| 2. Tie a clove hitch | 2a. Around hoseline<br>b. With running part end<br>c. 6' below nozzle               |
| 3. Tie a half hitch  | 3a. Around base of the nozzle                                                       |
| 4. Place a bight     | 4a. Through nozzle bale<br>b. Around nozzle tip<br>c. Running end back through bale |
| 5. Tie a half hitch  | 5a. Around the nozzle tip<br>b. Prevents bale from opening                          |
| 6. Lift the hoseline | 6a. Using the rope                                                                  |



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE OFF A CHARGED  
HOSE LINE FOR HOISTING

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***APPLICATION:***

The student will practice until proficient.

***EVALUATION:***

A performance examination.

***ASSIGNMENT:***

To be determined by instructor(s).

# Performance Examination

HOW TO TIE OFF A CHARGED  
HOSE LINE FOR HOISTING

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## POINTS

### TIME START

- |    |                                                                                             |           |
|----|---------------------------------------------------------------------------------------------|-----------|
| 1. | Lay rope parallel to charged line from nozzle to a point six feet below the nozzle.         | <u>10</u> |
| 2. | Tie a clove hitch around the hoseline six feet below the nozzle using the running part end. | <u>20</u> |
| 3. | Tie a half hitch around the base of the nozzle.                                             | <u>20</u> |
| 4. | Pass a bight through the bale and around the nozzle tip.                                    | <u>20</u> |
| 5. | Tie a half hitch around the nozzle tip.                                                     | <u>20</u> |
| 6. | Lift the hoseline using the rope.                                                           | <u>10</u> |

### TIME STOP

ENTER TOTAL TIME: \_\_\_\_\_:

POINTS POSSIBLE: 100

POINTS DEDUCTED:

FINAL SCORE:

EVALUATOR'S SIGNATURE:

DATE:

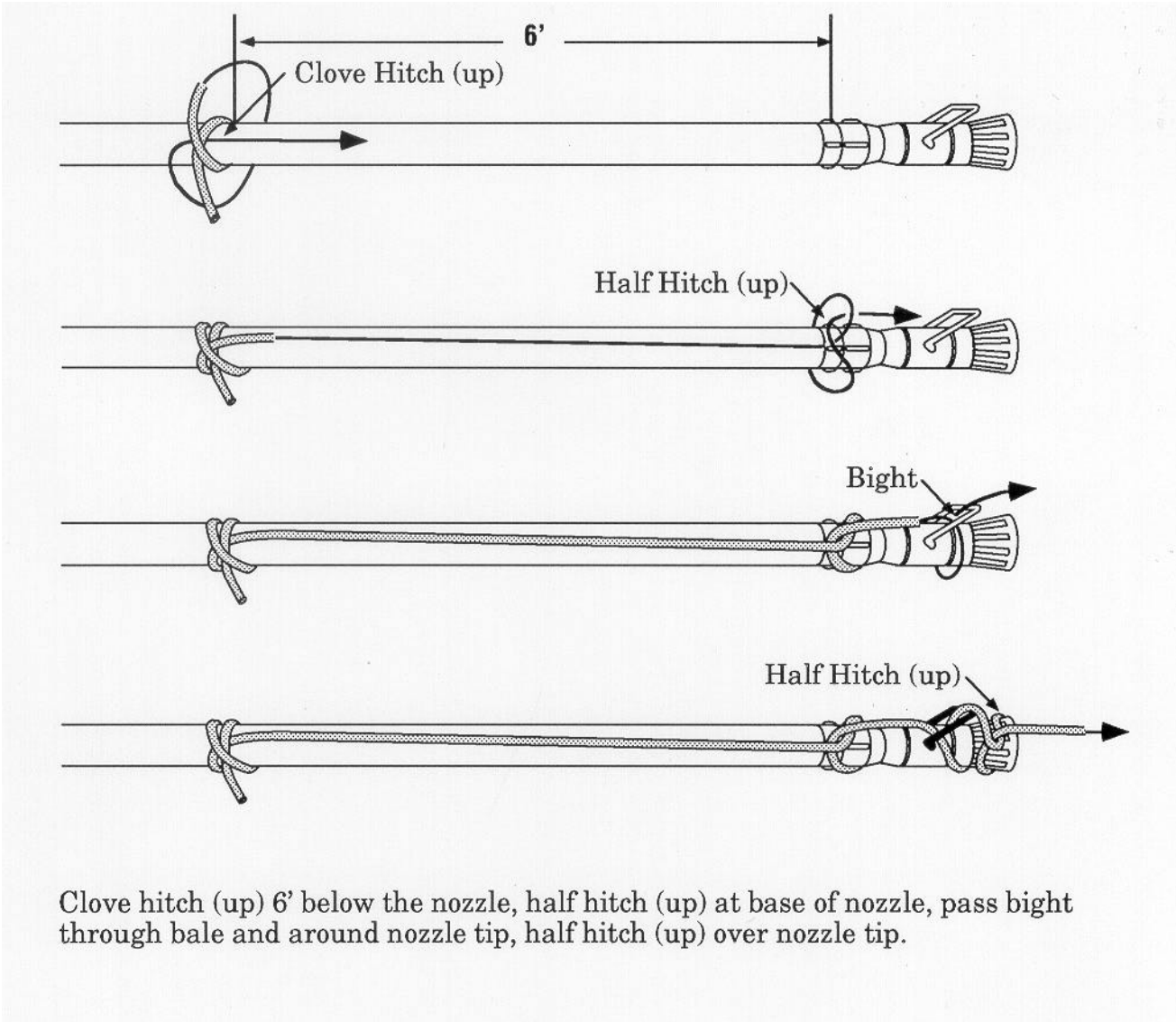
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# Fire Protection Training

Procedures Handbook 4300

ROPES & KNOTS

**TOPIC:** How To Tie Off A Dry Hoseline For Hoisting

**TIME FRAME:** 30 Minutes

**LEVEL OF INSTRUCTION:**

**BEHAVIORAL OBJECTIVE:**

*Condition:* One length of hose with nozzle attached, gloves, and one length of rope

*Behavior:* The student will hoist a length of hose with a nozzle utilizing a rope under simulated fireground conditions.

*Standard:* With a minimum of 100% accuracy within 45 seconds

**MATERIALS NEEDED:**

- One length of rope
- One length of hose with nozzle
- Stop watch
- Performance examinations

**REFERENCES:**

- IFSTA, Essentials of Fire Fighting, 2nd Edition, Chapter 3

**PREPARATION:**

The ability to effectively use ropes, knots and hitches is a basic skill which every fire fighter should possess. It is critical that every firefighter perform these skills in a professional manner. Failure to do so can result in serious injury to personnel and/or damage to equipment.



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE OFF A DRY  
HOSELINE FOR HOISTING

## OPERATIONS

## KEY POINTS

1. Position hose and nozzle

1a. Dry

b. Nozzle bale shut off

c. 20 feet laid flat on ground

2. Position rope

2a. Along side nozzle and hose

b. From nozzle to a point 6 feet below nozzle

3. Fold hose and nozzle

3a. Over on itself

b. Forming 3' fold of hose

c. Nozzle bale down and protected

4. Tie hose off

4a. Clove hitch with safety over tip of nozzle using running part end of rope

b. Near shut off

c. Knot placed opposite side of hose from nozzle

5. Tie hose off

5a. Running rope up back side of hose in relation to the nozzle

b. To a point 12" below hose fold on doubled section

c. With a half hitch

6. Hoist the hose and nozzle

6a. Using standing part of rope



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE OFF A DRY  
HOSELINE FOR HOISTING

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***APPLICATION:***

Student to practice until proficient.

***EVALUATION:***

A performance examination.

***ASSIGNMENT:***

To be determined by instructor(s).

# Performance Examination

HOW TO TIE OFF A DRY  
HOSELINE FOR HOISTING

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## POINTS

### TIME START

- |    |                                                                                                                                                                                       |           |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 1. | Lay a length of hose with nozzle attached on the ground with at least 20 feet fully extended and laying flat                                                                          | <u>10</u> |
| 2. | Lay a length of rope alongside the nozzle and hose from the nozzle to a point 6 feet below the nozzle                                                                                 | <u>10</u> |
| 3. | Fold the hose and nozzle with bale down over on itself creating at least a three foot section of doubled hose                                                                         | <u>20</u> |
| 4. | Tie the nozzle tip to the hose with a clove hitch and a safety. The nozzle bale should be against the hose in a protected position and the knot should be on the backside of the rope | <u>30</u> |
| 5. | Running the rope up the back side of the hose tie a half hitch around the folded/doubled section of hose at a point 12" below the hose loop                                           | <u>20</u> |
| 6. | Hoist the hose and nozzle using the standing part of the rope                                                                                                                         | <u>10</u> |

### TIME STOP

ENTER TOTAL TIME: \_\_\_\_\_:

POINTS POSSIBLE: 100

POINTS DEDUCTED:

FINAL SCORE:

EVALUATOR'S SIGNATURE:

DATE:

COMMENTS:

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# Fire Protection Training

Procedures Handbook 4300

ROPES & KNOTS

**TOPIC:** How To Tie Off A Cylinder For Hoisting

**TIME FRAME:** 30 Minutes

**LEVEL OF INSTRUCTION:**

**BEHAVIORAL OBJECTIVE:**

*Condition:* An S.C.B.A. cylinder or a fire extinguisher and a length of rope

*Behavior:* The student will tie off a SCBA cylinder or a fire extinguisher for hoisting under simulated fire conditions.

*Standard:* With a minimum of 100% accuracy within 1 minute

**MATERIALS NEEDED:**

- One length of rope
- Stop watch
- SCBA cylinder or extinguisher
- Performance examinations

**REFERENCES:** None

**PREPARATION:** The ability to effectively use ropes, knots and hitches is a basic skill which every firefighter should possess. It is critical that every firefighter perform these skills in a professional manner. Failure to do so can result in serious injury to personnel and/or damage to equipment.



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE OFF A CYLINDER FOR  
HOISTING

## OPERATIONS

## KEY POINTS

- | OPERATIONS                            | KEY POINTS                                                                                                                      |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| 1. Position rope                      | 1a. On ground<br>b. Adjacent to object to be tied<br>c. Extending from top of cylinder to a point near base of cylinder         |
| 2. Tie a clove hitch (up) with safety | 2a. One third of the distance from base to top<br>b. Using running part end of rope<br>c. Knot on side needing least protection |
| 3. Tie a half hitch (up)              | 3a. Two thirds of the distance from the base to the top<br>b. Half hitch aligned with initial clove hitch                       |
| 4. Tie a half hitch (up)              | 4a. Near the top of the cylinder<br>b. Around handle or other secure anchor if possible                                         |
| 5. Hoist cylinder                     | 5a. Using standing part of rope                                                                                                 |



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE OFF A CYLINDER FOR  
HOISTING

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***APPLICATION:***

Student to practice until proficient.

***EVALUATION:***

A performance examination.

***ASSIGNMENT:***

To be determined by instructor(s).

**POINTS**

TIME START

- |    |                                                                                                                                                                |           |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 1. | Lay cylinder on ground and position rope alongside it from the top to a point one third of the way from the base to the top                                    | <u>20</u> |
| 2. | Secure cylinder with a clove hitch on the side of the cylinder needing least protection using the running part end of the rope                                 | <u>20</u> |
| 3. | Tie a half hitch (up) at a point two thirds of the way from the base to the top of the cylinder. This half hitch is to be aligned with the initial clove hitch | <u>20</u> |
| 4. | Tie a second half hitch (up) near the top of the cylinder aligning it with the previous half hitch and the original clove hitch                                | <u>20</u> |
| 5. | Hoist the cylinder using the standing part of the rope                                                                                                         | <u>20</u> |

TIME STOP

**ENTER TOTAL TIME:**          :

**POINTS POSSIBLE:**      100

**POINTS DEDUCTED:**

**FINAL SCORE:**

**EVALUATOR'S SIGNATURE:**

**DATE:**

**COMMENTS:**

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# Fire Protection Training

Procedures Handbook 4300

ROPES & KNOTS

**TOPIC:** How To Tie Off A Pike Pole For Hoisting

**TIME FRAME:** 30 Minutes

**LEVEL OF INSTRUCTION:**

**BEHAVIORAL OBJECTIVE:**

*Condition:* A length of rope and a pike pole

*Behavior:* Student will tie a rope to a pike pole and hoist it under simulated fire conditions.

*Standard:* With a minimum of 100% accuracy within 30 seconds

**MATERIALS NEEDED:**

- Pike pole
- Length of rope
- Stop watch
- Performance examinations

**REFERENCES:**

- IFSTA, Essentials of Fire Fighting, 2nd Edition, Chapter 3

**PREPARATION:** The ability to effectively use ropes, knots, and hitches is a basic skill which every firefighter should possess. It is critical that every firefighter perform these skills in a professional manner. Failure to do so can result in serious injury to personnel and/or damage to equipment.



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE OFF A PIKE POLE  
FOR HOISTING

## OPERATIONS

## KEY POINTS

- | OPERATIONS                      | KEY POINTS                                                                                                                                       |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Lay pike pole                | 1a. Flat on ground                                                                                                                               |
| 2. Position rope                | 2a. Adjacent to pike pole<br>b. With running part end extending from tip of pike pole to a point 1/3 of the distance from the butt of the handle |
| 3. Tie a clove hitch (up)       | 3a. One third of the distance from the butt of the handle<br>b. Using running part end of the rope                                               |
| 4. Tie a half hitch (up)        | 4a. Two thirds of the distance from the butt of the handle                                                                                       |
| 5. Tie a second half hitch (up) | 5a. On head of pike pole<br>b. Immediately below the pike pole hook<br>c. Aligned with original clove hitch and half hitch                       |
| 6. Hoist pike pole              | 6a. Using standing part of the rope                                                                                                              |



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE OFF A PIKE POLE  
FOR HOISTING

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***APPLICATION:***

Student to practice until proficient.

***EVALUATION:***

A performance examination.

***ASSIGNMENT:***

To be determined by instructor(s).

# Performance Examination

HOW TO TIE OFF A PIKE POLE  
FOR HOISTING

---

## POINTS

### TIME START

1. With pike pole laying flat on ground position rope adjacent to the pike pole passing the running part end from the tip of the pike pole down to a point 1/3 of the distance from the butt of the handle 20
2. Tie a clove hitch using the running part end of the rope 20
3. Tie a half hitch at a point two thirds of the distance from the base of the handle to the head of the pike pole. This half hitch to be aligned with the original clove hitch 20
4. Tie a second half hitch (up) on the head of the pike pole immediately below the pike pole hook. This half hitch to be aligned with the previous half hitch and the original clove hitch 20
5. Hoist the pike pole using the standing part of the rope 20

### TIME STOP

**ENTER TOTAL TIME:**     :

**POINTS POSSIBLE:** 100

**POINTS DEDUCTED:**

**FINAL SCORE:**

**EVALUATOR'S SIGNATURE:**

**DATE:**

### COMMENTS:

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# Fire Protection Training

Procedures Handbook 4300

ROPES & KNOTS

**TOPIC:** How To Tie Off An Axe, Pulaski, or Sledge Hammer for Hoisting

**TIME FRAME:** 30 Minutes

**LEVEL OF INSTRUCTION:**

**BEHAVIORAL OBJECTIVE:**

*Condition:* A length of rope and an axe, pulaski or sledge hammer

*Behavior:* The student will secure a rope to the tool to hoist it under simulated fire conditions.

*Standard:* With a minimum of 100% accuracy

**MATERIALS NEEDED:**

- One length of rope
- Stop watch
- Axe, Pulaski, or sledge hammer
- Performance examination

**REFERENCES:**

- IFSTA, Essentials of Fire Fighting, 2nd Edition, Chapter 3

**PREPARATION:** The ability to effectively use ropes, knots, and hitches is a basic skill which every firefighter should possess. It is critical that every firefighter perform these skills in a professional manner. Failure to do so can result in serious injury to personnel and/or damage to equipment.



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE OFFR AN AXE,  
PULASKI OR SLEDGE HAMMER  
FOR HOISTING

## OPERATIONS

## KEY POINTS

- | OPERATIONS               | KEY POINTS                                                                                                                                 |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Form a bight          | 1a. Running part end in working hand<br>b. 3' off the ground<br>c. Standing part in free hand<br>d. With bight touching ground             |
| 2. Pass running part end | 2a. To free hand                                                                                                                           |
| 3. Position tool         | 3a. Tool head down<br>b. Perpendicular to ground<br>c. At point where bight touches ground<br>d. Tool head perpendicular to the rope bight |
| 4. Pass running part end | 4a. With working hand<br>b. Over tool head<br>c. Behind both the standing part and the handle<br>d. Adjacent to the tool head              |
| 5. Pass running part end | 5a. Back over opposite end of tool head<br>b. Then down between running part of rope and the tool head                                     |
| 6. Pull running part end | 6a. Until tight                                                                                                                            |
| 7. Tie half hitch        | 7a. With standing part<br>b. Around handle<br>c. 6 - 10" from butt of handle                                                               |
| 8. Hoist the tool        | 8a. Off the ground                                                                                                                         |



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE OFFR AN AXE,  
PULASKI OR SLEDGE HAMMER  
FOR HOISTING

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***APPLICATION:***

Student to practice until proficient.

***EVALUATION:***

A performance examination.

***ASSIGNMENT:***

To be determined by instructor(s).

# Performance Examination

HOW TO TIE OFF AN AXE,  
PULASKI, OR SLEDGE HAMMER  
FOR HOISTING

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## POINTS

### TIME START

- |    |                                                                                                                                          |           |
|----|------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 1. | Form a bight with the running part end extending three feet up from the ground and the bight laying on the ground                        | <u>10</u> |
| 2. | Grasp the running part end and the standing part in the non-working hand                                                                 | <u>10</u> |
| 3. | Position the tool with the tool head down perpendicular to the ground                                                                    | <u>10</u> |
| 4. | The tool head should cross perpendicular to rope where it contacts the ground and half the tool head should be on each side of the rope  | <u>10</u> |
| 5. | Pass the working part end over and adjacent to either end of the tool head, then behind and around the tool handle and the standing part | <u>10</u> |
| 6. | Pass the working part end over and adjacent to the other end of the tool head, then down between the running part and the tool head      | <u>20</u> |
| 7. | Pull the running part end outward from tool head parallel to the long axis of the handle until tight                                     | <u>10</u> |
| 8. | Tie a half hitch with the standing part of the rope around the tool handle 6 - 10" from the handle butt                                  | <u>10</u> |
| 9. | Hoist the tool off the ground                                                                                                            | <u>10</u> |

### TIME STOP

**ENTER TOTAL TIME:** \_\_\_\_\_:

**POINTS POSSIBLE:** 100

**POINTS DEDUCTED:**

**FINAL SCORE:**

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4319.20

**EVALUATOR'S SIGNATURE:**

**DATE:**

**COMMENTS:**

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# Fire Protection Training

Procedures Handbook 4300

ROPES & KNOTS

**TOPIC:** How To Tie Off A Shovel Or McLeod For Hoisting

**TIME FRAME:** 30 Minutes

**LEVEL OF INSTRUCTION:**

**BEHAVIORAL OBJECTIVE:**

*Condition:* A length of rope and a shovel or McLeod

*Behavior:* The student will correctly tie off a shovel or McLeod for hoisting or lowering under simulated fire conditions.

*Standard:* With a minimum of 100% accuracy within 1 minute

**MATERIALS NEEDED:**

- One length of rope
- One shovel or McLeod
- Stop watch
- Performance examinations

**REFERENCES:**

- IFSTA, Essentials of Fire Fighting, 2nd Edition, Chapter 3

**PREPARATION:** The ability to effectively use ropes, knots, and hitches is a basic skill which every firefighter should possess. It is critical that every firefighter perform these skills in a professional manner. Failure to do so can result in serious injury to personnel and/or damage to equipment.



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE OFF A SHOVEL OR  
MCLEOD FOR HOISTING

## OPERATIONS

## KEY POINTS

- | OPERATIONS                 | KEY POINTS                                                                                                                             |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| 1. Lay shovel or McLeod    | 1a. Flat on ground                                                                                                                     |
| 2. Position rope           | 2a. Adjacent to tool<br>b. With running part end extending from head of tool to a point 1/3 of the distance from the end of the handle |
| 3. Tie a clove hitch (up)  | 3a. One third of the distance from the end of the handle<br>b. Using running part end of the rope                                      |
| 4. Tie a half hitch        | 4a. Two thirds of the distance from the end of the handle<br>b. Half hitch aligned with original clove hitch                           |
| 5. Tie a second half hitch | 5a. Immediately below the head of the tool<br>b. Aligned with original clove hitch and half hitch                                      |
| 6. Hoist shovel or McLeod  | 6a. Using standing part of the rope                                                                                                    |



# Fire Protection Training

Procedures Handbook 4300

HOW TO TIE OFF A SHOVEL OR  
MCLEOD FOR HOISTING

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***APPLICATION:***

Student to practice until proficient.

***EVALUATION:***

A performance examination.

***ASSIGNMENT:***

To be determined by instructor(s).

# Performance Examination

HOW TO TIE OFF A SHOVEL OR  
MCLEOD FOR HOISTING

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## POINTS

### TIME START

1. With shovel or McLeod laying flat on ground, position rope adjacent to the tool passing the running part end from the head of the tool down to a point 1/3 of the distance from the end of the handle 20
  
2. Tie a clove hitch (up) using the running part end of the rope 20
  
3. Tie a half hitch at a point two thirds of the distance from the base of the handle to the head of the tool. This half hitch to be aligned with the original clove hitch 20
  
4. Tie a second half hitch immediately below the head of the tool. This half hitch to be aligned with the previous half hitch and the original clove hitch 20
  
5. Hoist the tool using the standing part of the rope 20

### TIME STOP

**ENTER TOTAL TIME:** \_\_\_\_\_:

**POINTS POSSIBLE:** 100

**POINTS DEDUCTED:**

**FINAL SCORE:**

**EVALUATOR'S SIGNATURE:**

**DATE:**

**COMMENTS:**

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