



PROBATIONARY TRAINING

TRAINING EXERCISE

Ropes, Knots & Harnesses

Rope Materials

1 - **Natural Fiber** - short overlapping strands of fibers

- a. **Manila:** + Strength, - breaks down due to biodegradable
Utility use only (commonly use as ladder halyards)
- b. **Cotton:** + Pliable - damages easily
Utility use Only (common in smaller ladder halyards)



2 - **Synthetic Fiber** - continuous fibers running entire rope length

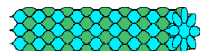
- a. **Nylon:** + Strongest size for size rope, + allows for smaller diameter rope use, + resists abrasions, + can clean since resists moisture, - acids & UV light damage
- b. **Polypropylene:** + Cheap, + Floats (Water Rescues), - Slippery (knots unsecured), - breaks down at 200 degrees F

Ropes Construction

- 1 - **Laid Rope** - twisted yarn to form strands & generally 3 strands are twisted together to form the final rope, how tight = ropes properties/strength. + 3 load bearing strands + easy of inspection, - damage easily effects the ropes strength.
Commonly seen with Polypropylene rope. (aka: Twisted rope)



- 2 - **Braided Rope** - uniformly intertwining strands forming the rope. + reduces rope twisting that is common in the laid rope, - load bearing parts are subject to abrasion



- 3 - **Braid on Braid Rope** - braided core rope wrapped with a braided sheath. + very strong, + ½ strength in core, ½ sheath, - does not resist abrasion



- 4 - **Kernmantle Rope** - braided sheath over the main load bearing core (kern). The kern consists of continuous parallel fibers the run entire length of rope. The sheath (mantle) is braided with ½ the strands twisted left and other ½ right. The sheath only provided 10-20% of the ropes strength giving the rope: + strength, + resistance to breakdown, + maneuverability, - cost.



Types of Rope Uses:

- 1. **Utility** - supporting/hoisting any thing but people
Natural fiber ropes, Laid ropes, Braided Ropes
- 2. **Life Safety** - Solely for supporting people
*Synthetic Ropes, * Kernmantle (* =ONLY)



Westbury Life Saving Rope Specs

Specs

NYTech Spec

TEST DESCRIPTION	METHOD
DIAMETER (Measured @ 1% MBS)	FED. STD. 191A 6002
CIRCUMFERENCE (Measured @ 1% MBS)	FED. STD. 191A 6003
LAY LENGTH (TPF) (Measured @ NO LOAD)	FED. STD. 191A 6000
TWIST IN STRAND (Measured @ 1/3 of DIAMETER)	NER
FT/AT RATIO	NER
LINEAR DENSITY (LB/100') (Measured @ 1% MBS)	FED. STD. 191A 6004
HARDNESS (DRY)	FED. STD. 191A 6020
HARDNESS (WET)	FDNY R 2L
TENSILE STRENGTH (DRY)	FED. STD. 191A 6015
TENSILE STRENGTH (WET)	FDNY R 2L
ELONGATION @ 80% MBS	FDNY R 2L
^HEAT AGING (TENSILE STRENGTH)	MIL. R-17343
SHRINKAGE	FDNY R 2L
ROPE BALANCE	NER
SPLICEABILITY	MIL. R-17343

NYTech Spec

7/20/2020

WORKSHEET: Specs

CERTIFICATE OF COMPLIANCE

Certificate Number 20190405-SA9635
Report Reference SA9635-20170206
Issue Date 2019-APRIL-05

Issued to: TEUFELBERGER FIBER ROPE CORP.
848 Airport Road
Fall River, MA 02720

This is to certify that
representative samples of LIFE SAFETY ROPE AND EQUIPMENT FOR
EMERGENCY SERVICES
See Addendum pages

Have been investigated by UL in accordance with the
Standard(s) indicated on this Certificate.

Standard(s) for Safety: NFPA 1983, Standard on Life Safety Rope and Equipment
for Emergency Services, 2017 Edition.

Additional Information: See the UL Online Certifications Directory at
www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's
Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.

B. Mahesh

Bruce Maheshwari, Assistant Chief Engineer, Global Inspection and Field Services
UL LLC

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Harness Types:

CLASS I

"Ladder Belt"



Just Waist

CLASS II

"Seat Harness"



Waist + Legs

CLASS III

"Rescue Harness"



Waist, Legs + Shoulder/Chest

Knot Terminology:

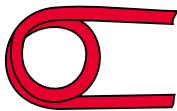
The Bite



The Loop



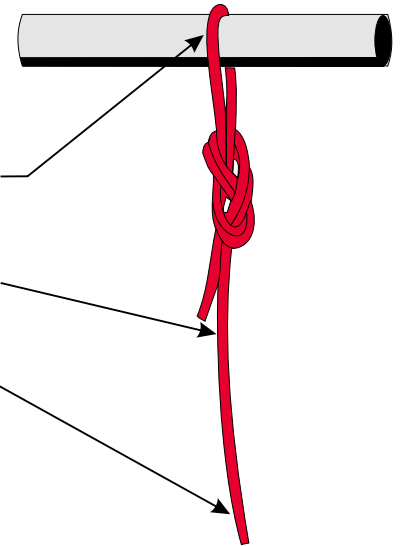
The Round Turn



Working End

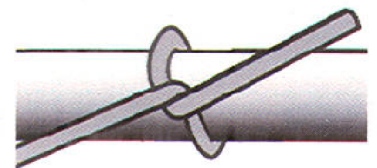
Standing Part

Running End



Half Hitch

Half hitches are temporary knots that are not intended to support a lot of strain. They are used to complete and make other knots stronger, for hanging, tying, and hooking objects. The half hitch is one of the best known knots and is widely used in a variety of situations.

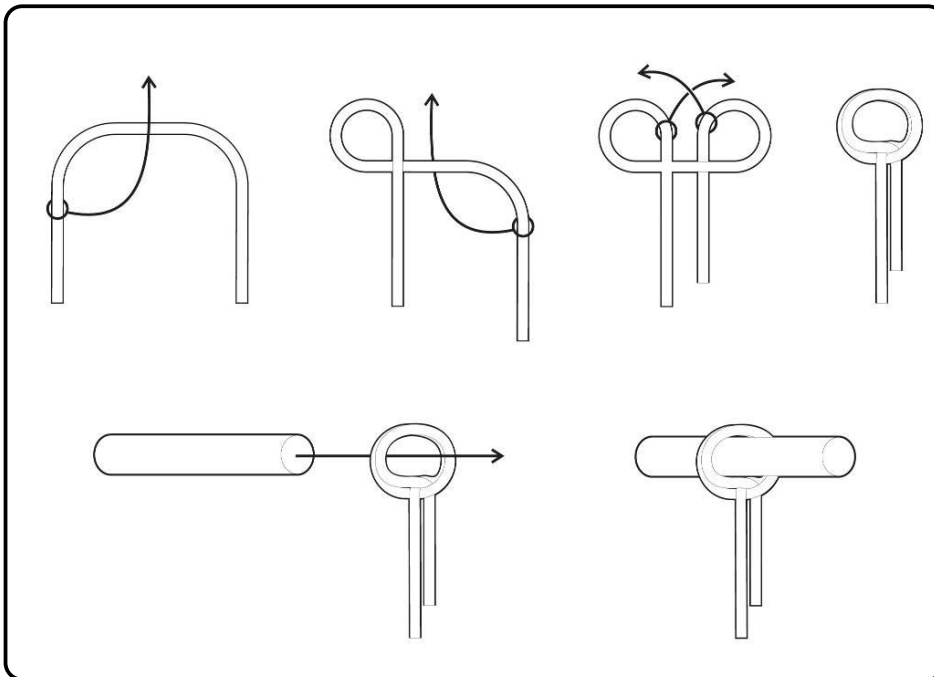
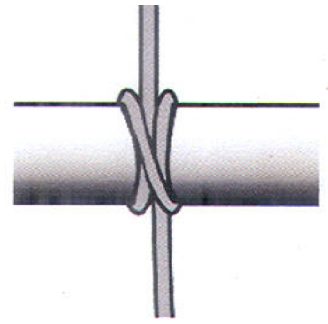


see animation: (click link)

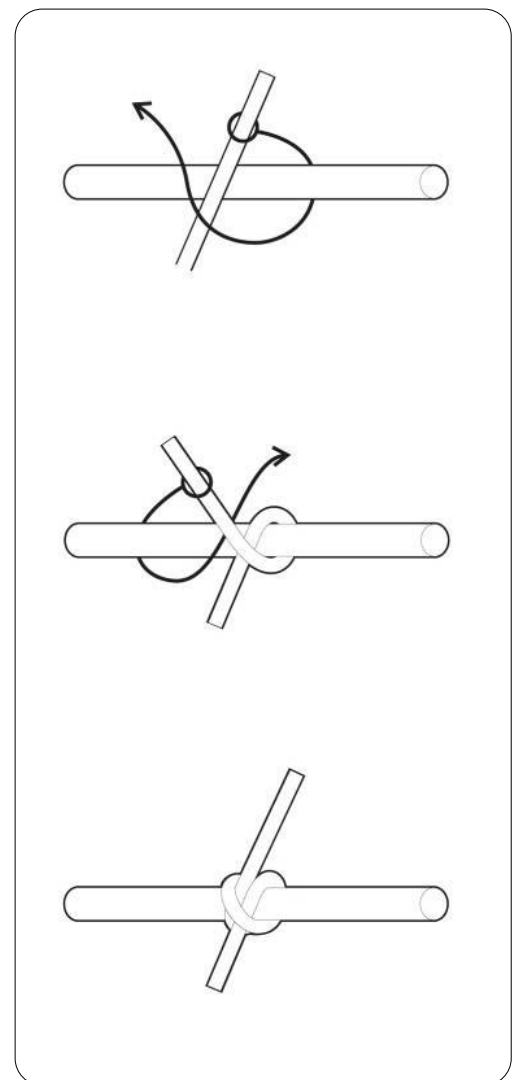
<http://www.animatedknots.com/halfhitch/index.php?>

Clove Hitch

The knot known to sailors as the clove hitch is also known under other names such as the peg knot in camping and the boatman's knot in climbing. It is a safe knot that is easy to make and is used in a variety of situations. The clove hitch may be formed anywhere in the rope from one end to the middle. It consists of two half hitches. The principal use is to attach a rope to an object such as a pole or post, or, to attach an appliance or hose for lifting. When properly applied, it will stand a pull in either direction without slipping.



Clove Hitch - Mid Line



Clove Hitch - End Line

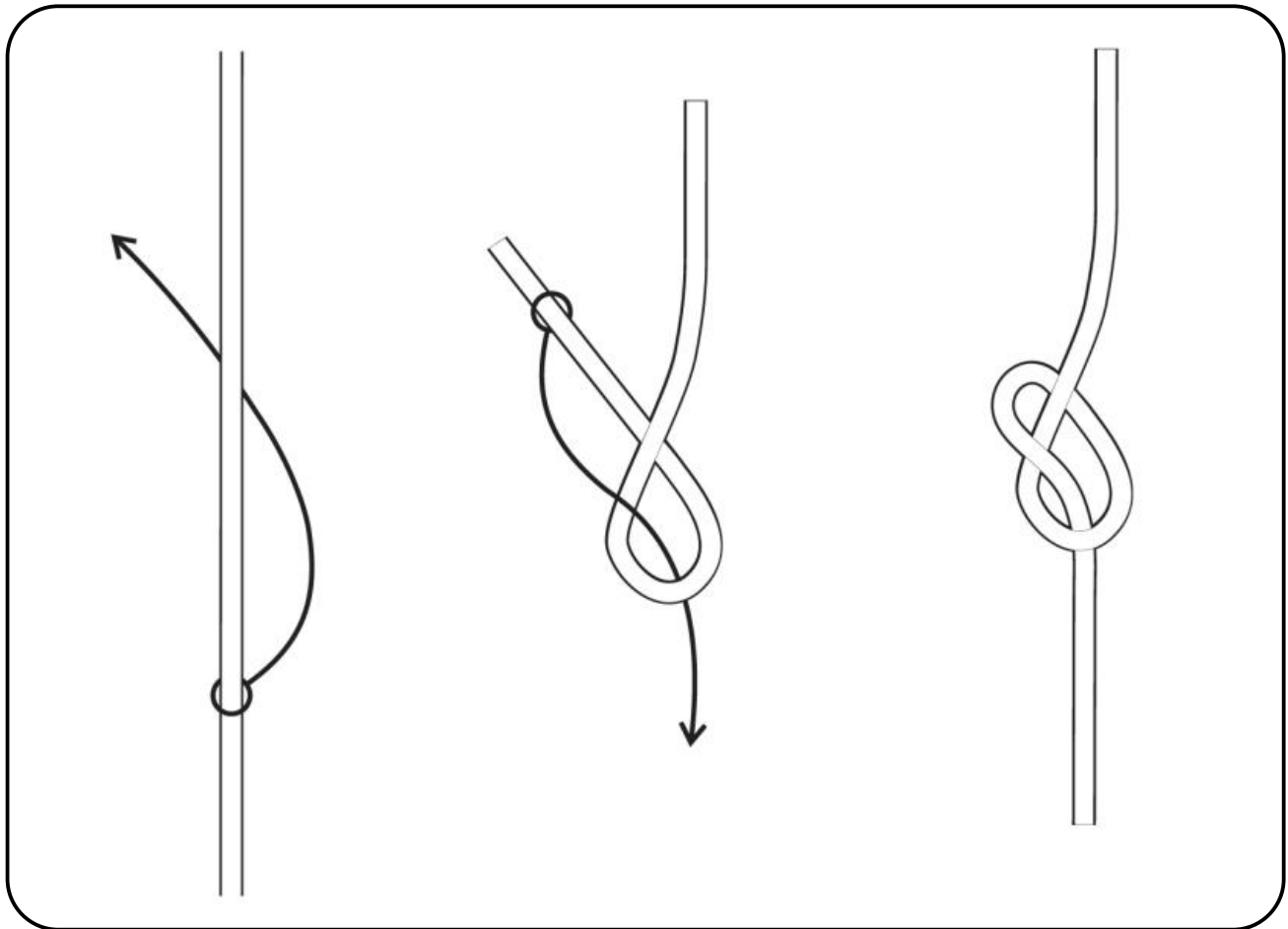
see animation: (click link)

http://www.netknots.com/html/clove_hitch.html

<http://www.animatedknots.com/clovehalfhitches/index.php>

Overhand Knot

The overhand is one of the most fundamental knots and forms the basis of many other knots. The overhand knot is very secure, to the point of being difficult to untie once loaded. It is often used as an anti-slip or safety knot or to prevent the end of a rope from unraveling.



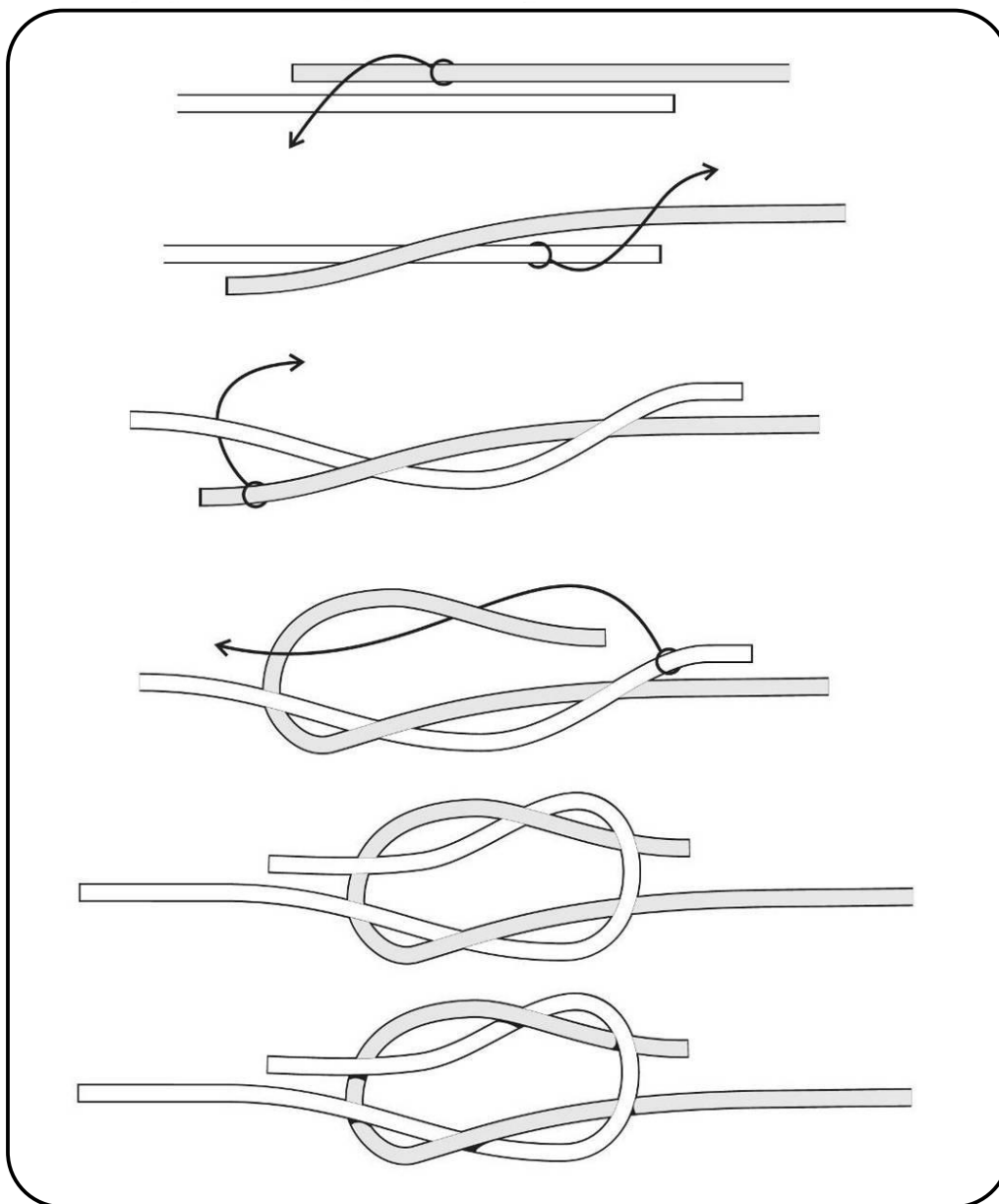
see animation: (click link)

<http://www.animatedknots.com/overhand/index.php?>



Square Knot

The square knot is also called a reef knot because it is used when securing a reefed sail to a boom. It can be used to fasten two lines of equal size or two ends of the same line. However, it is useful only when no great load is anticipated, such as in tying packages. If used to bend two lines of unequal size together, it will slip. When the knot is under tension, it is very difficult to untie. If unequal tension is applied, such as a jerk on one side, the knot is apt to turn into two half hitches. When tied, a square knot should have both ends on the same side. If the ends are on opposite sides you have tied a "thief's knot or granny" which will slip under tension.



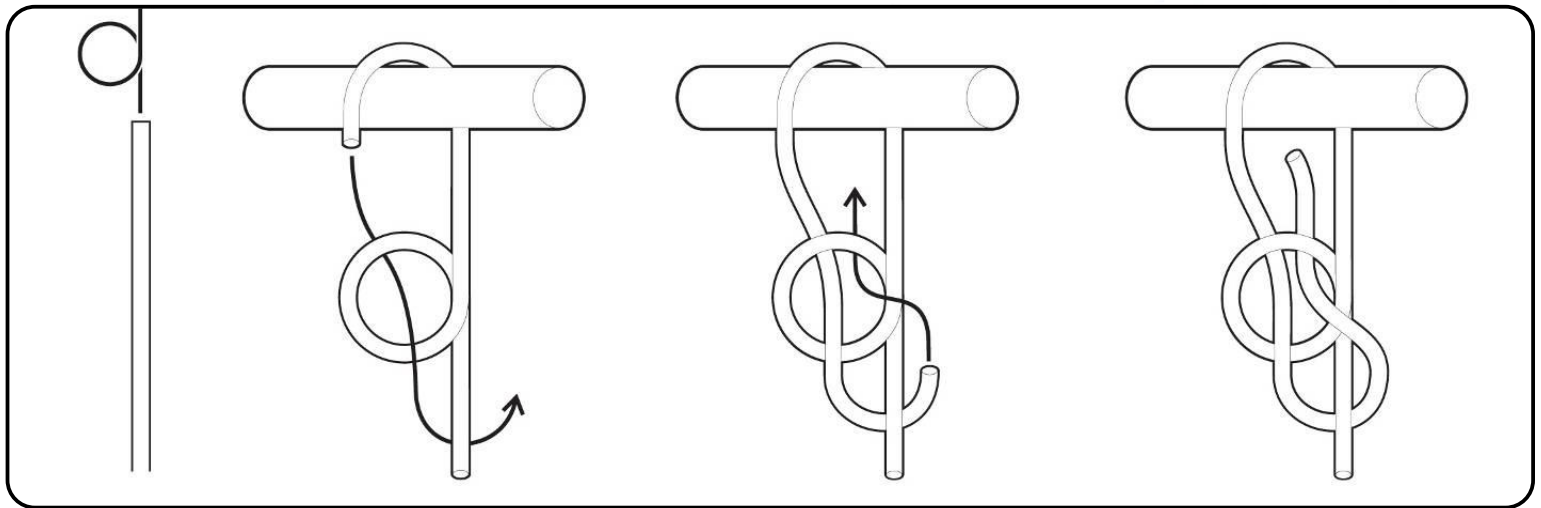
see animation: ([click link](#))

http://www.netknots.com/html/square_knot.html

<http://www.animatedknots.com/reef/index.php?>

Bowline

A bowline is used to form a temporary but fixed size loop at the end of a line. It is often called the “King of Knots” because of its many uses. Bowlines are easy to untie even after being under a load. Bowlines are used to tie lines of equal or unequal sizes together.

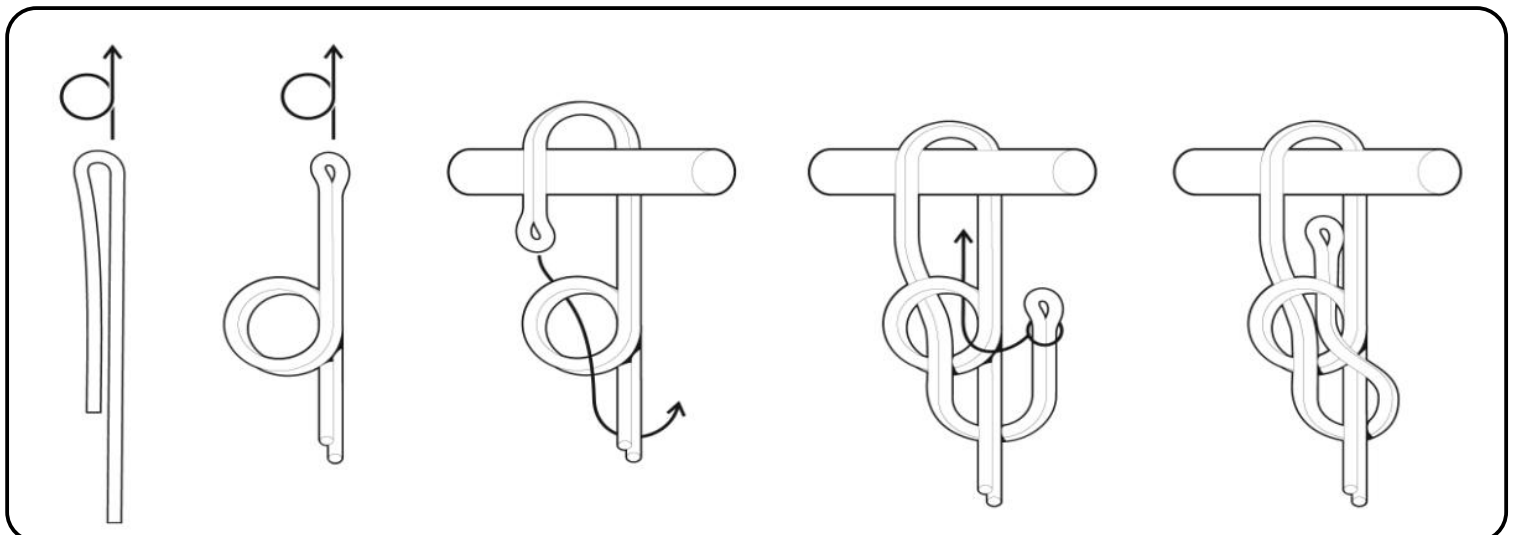


see animation: [\(click link\)](#)

<http://www.netknots.com/html/bowline.html>

<http://www.animatedknots.com/bowline/index.php?>

Double Bowline



see animation: [\(click link\)](#)

http://www.netknots.com/html/bowline_on_a_bight.

<http://www.animatedknots.com/bowlinebight/index.php?>

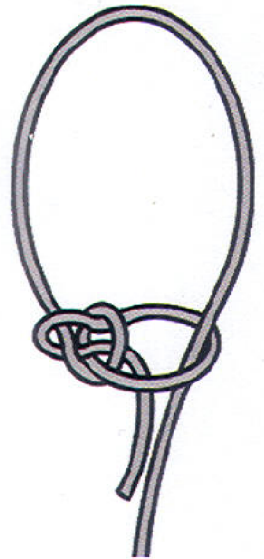
Running Bowline

The running bowline is mainly used for hanging objects of different diameters with ropes. The weight of the object determines the tension necessary for the knot to grip. The running bowline is strong and secure, does not weaken the rope excessively, slides easily, and unties just as simply.

When a running bowline is to be passed over an object, it is only necessary to make a bowline to simulate an eye-splice and then form an eye-loop.

see animation: (click link)

<http://www.animatedknots.com/bowlerunning/index.php?>



Equalizing Bowline

The equalizing bowline is used when a bowline can be used but the loop size must be adjusted or the knot centered prior to loading. Examples of such instances are tying a barrel, a large ladder or a litter basket. Once tied, the equalizing bowline should look like the bowline.



Figure 8 Stopper

The figure 8 is the basis for tying the figure 8 follow through bend, the figure 8 follow through with a loop, and the figure 8 on a bight double loop. The figure 8 itself is a quick and convenient stopper knot which can be undone fairly easily.

Figure 8 On A Bight Single Loop

The Figure 8 on a bight single loop allows the simple and reliable figure eight loop to be tied to a ring, a carabiner, or your own harness. It is easily remembered, easily visualized, and easily checked.

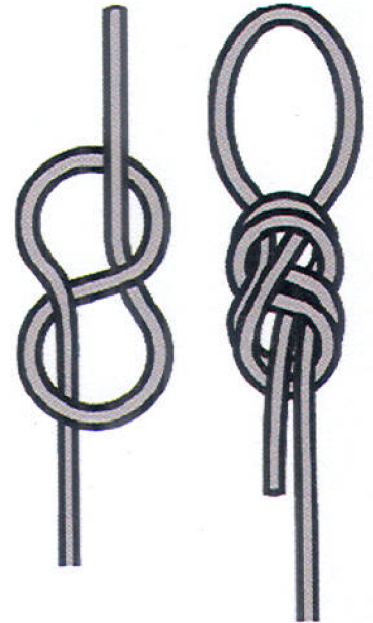


Figure 8 Follow Through With A Loop

The figure 8 follow through with a loop looks exactly like a figure 8 on a bight single loop when tied. The difference in the tying technique allows it to be tied around an object rather than completely tied and then attached to an object, which is not always possible.

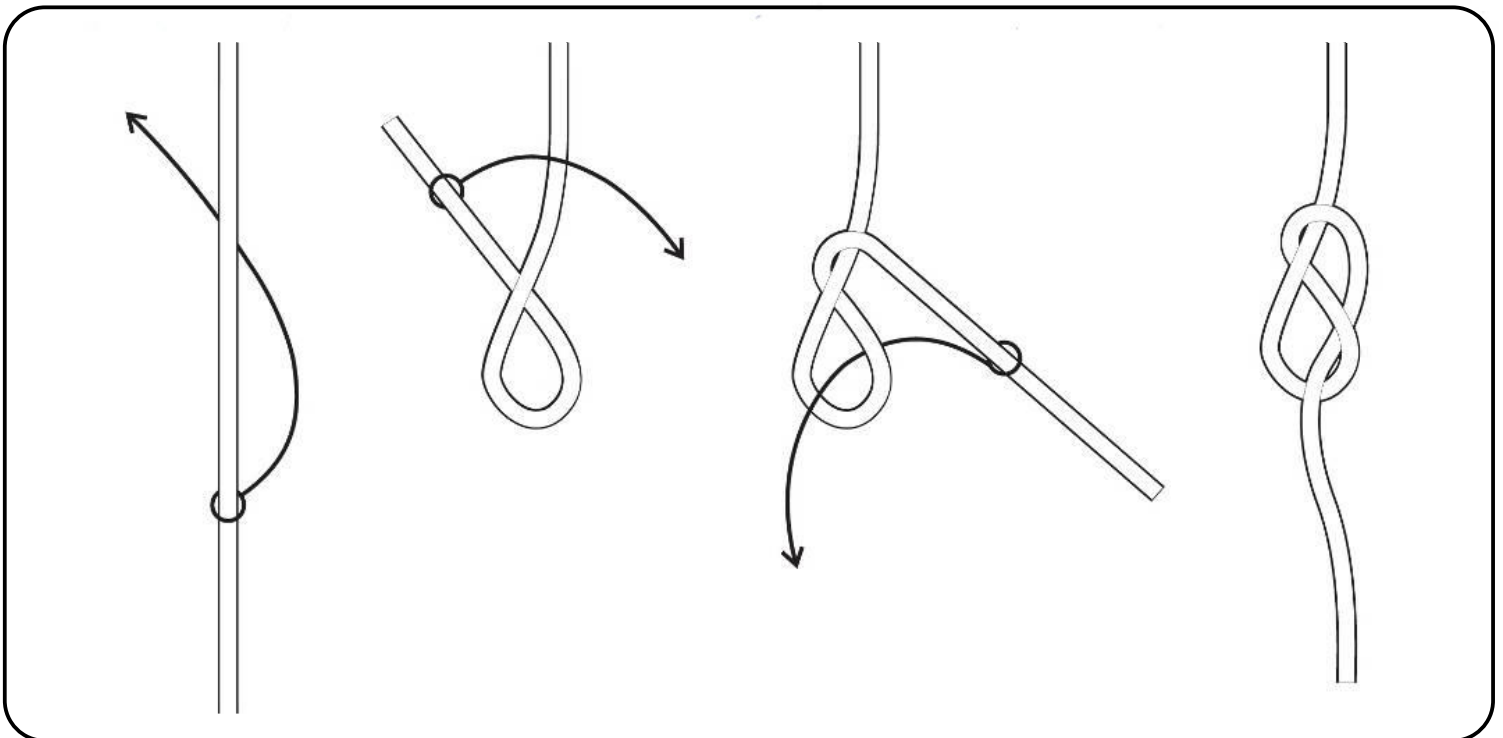


Figure 8 Stopper

see animation: [\(click link\)](#)

http://www.netknots.com/html/figure_eight_knot.html

http://www.animatedknots.com/fig8_/index.php

Figure 8 on a bite - single loop

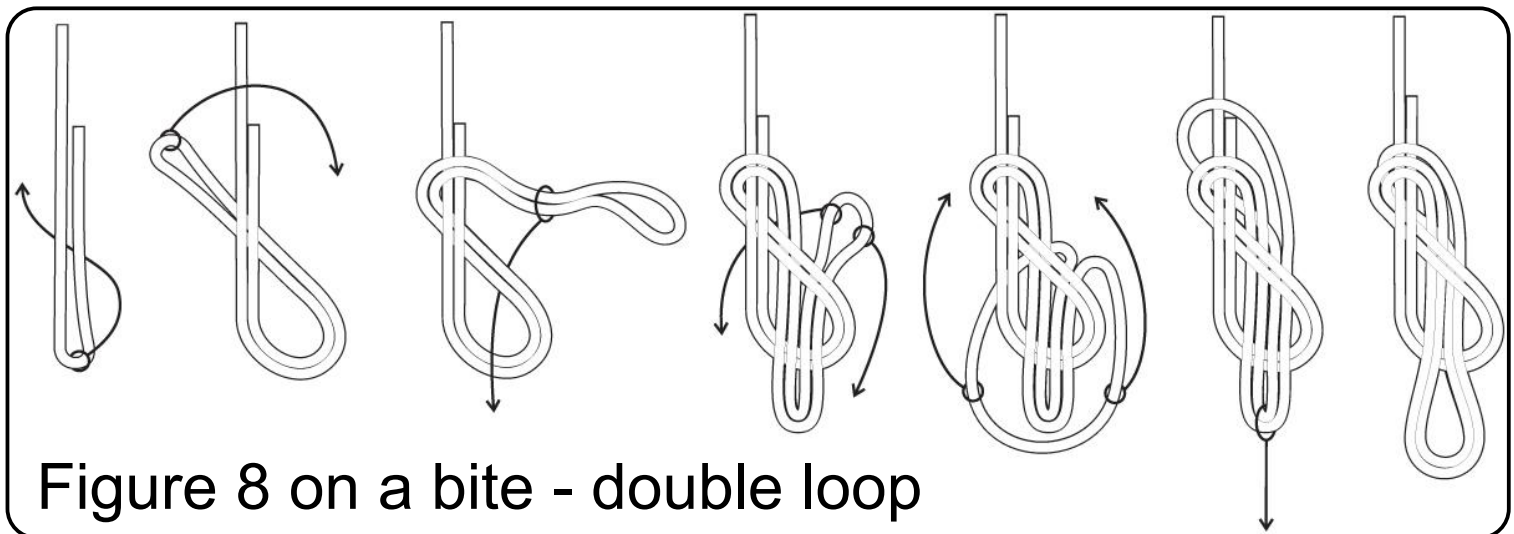
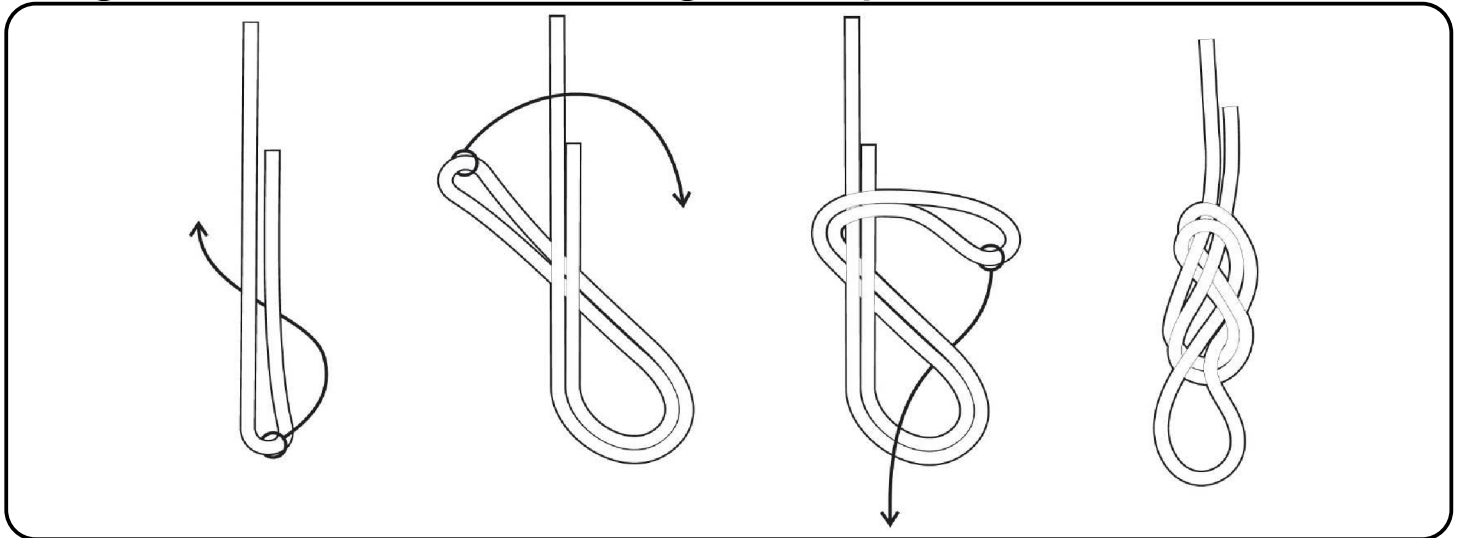


Figure 8 on a bite - double loop

see animation: (click link) <http://www.animatedknots.com/fig8loopdouble/index.php>

Figure 8 On A Bight Double Loop

The two loops can be used as an improvised seat. It is also useful for equalizing the load on two anchors. In one top-ropeing technique, the loops are made very unequal. The much larger one is passed around both anchor points. The center of this loop is then secured with a carabiner to the small loop. During rappelling, this ensures a more even distribution of load between the two anchor points.

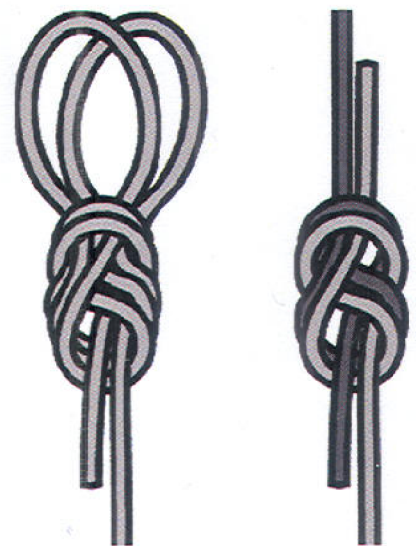
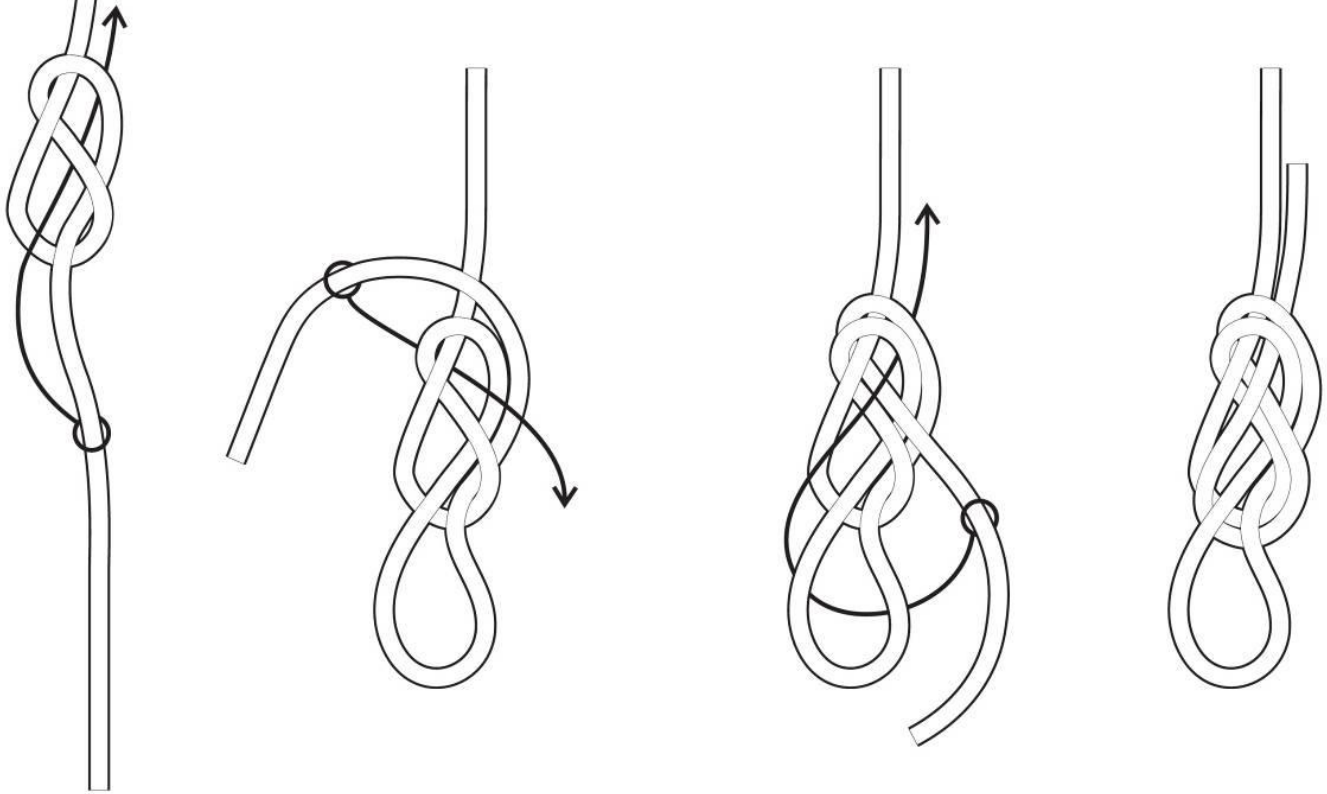


Figure 8 Follow Through Bend

The Figure 8 follow through bend provides a safe and simple way to join two ropes. Its advantage over the less bulky double overhand bend is that even after considerable strain it remains relatively easy to untie.

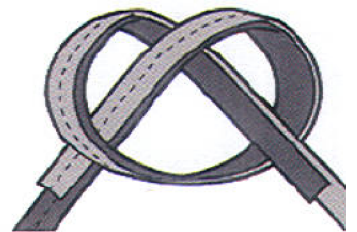
Figure 8 - Follow through Knot



see animation: (click link) <http://www.animatedknots.com/fig8follow/index.php?C>

Overhand Bend

The overhand bend, or water knot, is used to form a continuous loop of webbing or to join two pieces of webbing together to increase its length. As a loop, the webbing can be used as an equipment sling, hasty harness, anchor strap, or hose and ladder strap among other things.



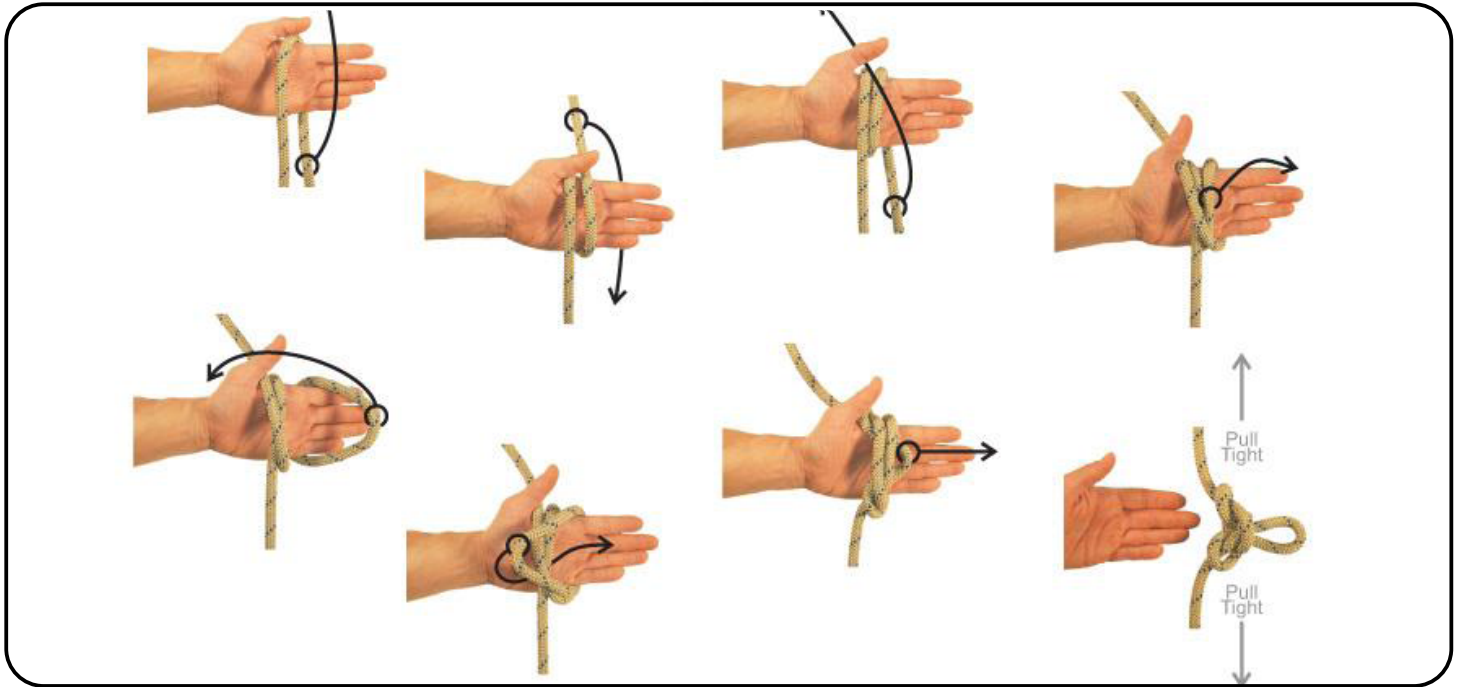
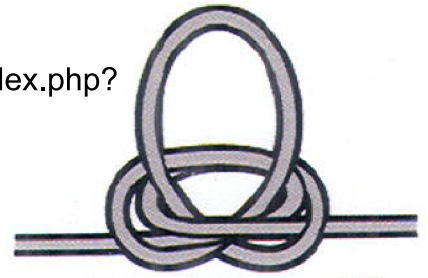
see animation: (click link)

http://www.netknots.com/html/butterfly_knot.html

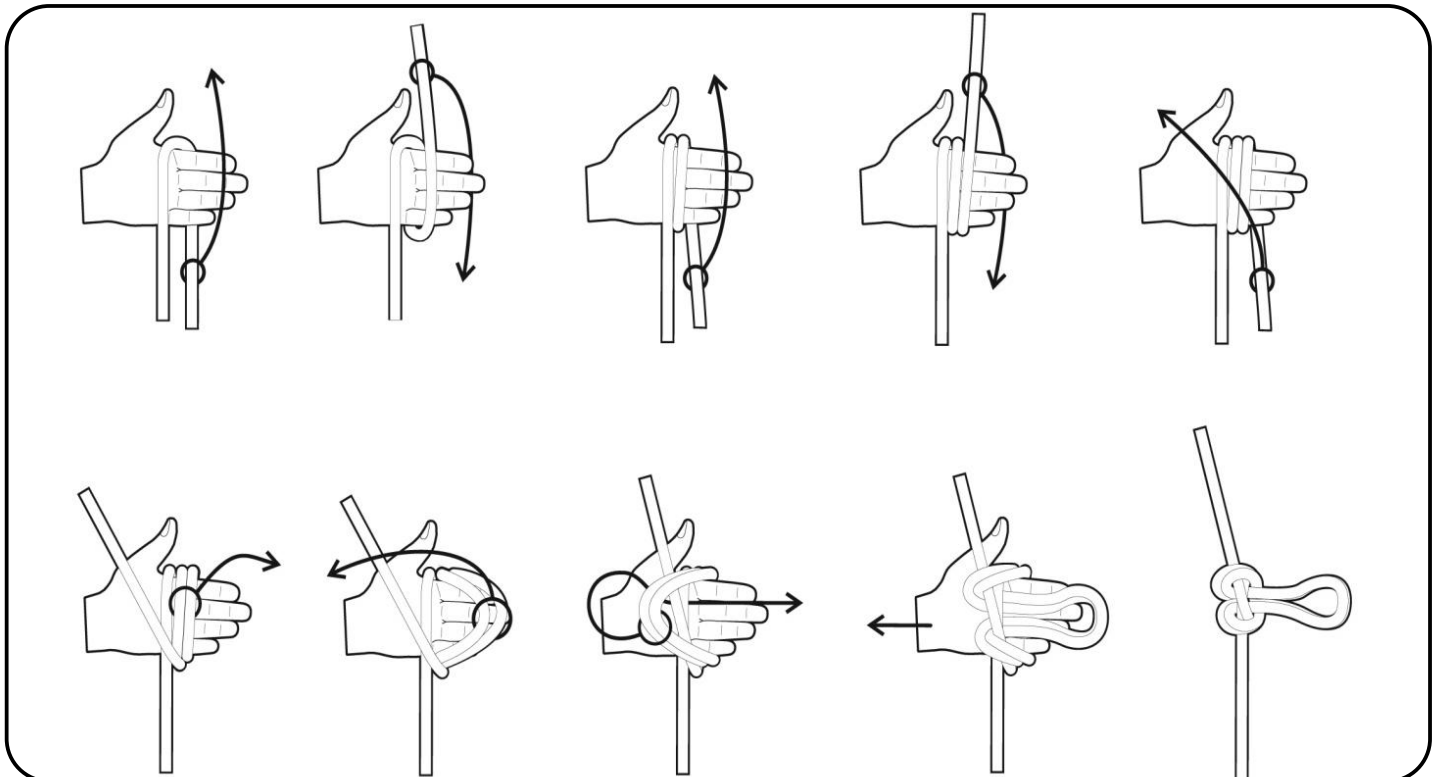
<http://www.animatedknots.com/alpinebutterfly/index.php?>

Butterfly Knot

The butterfly knot is a middle of the rope tie creating a loop that has a high breaking strength and can be loaded to either side of the rope. It can be used to attach a load to the middle of the rope or to isolate a worn section of rope while maintaining the rope's integrity.

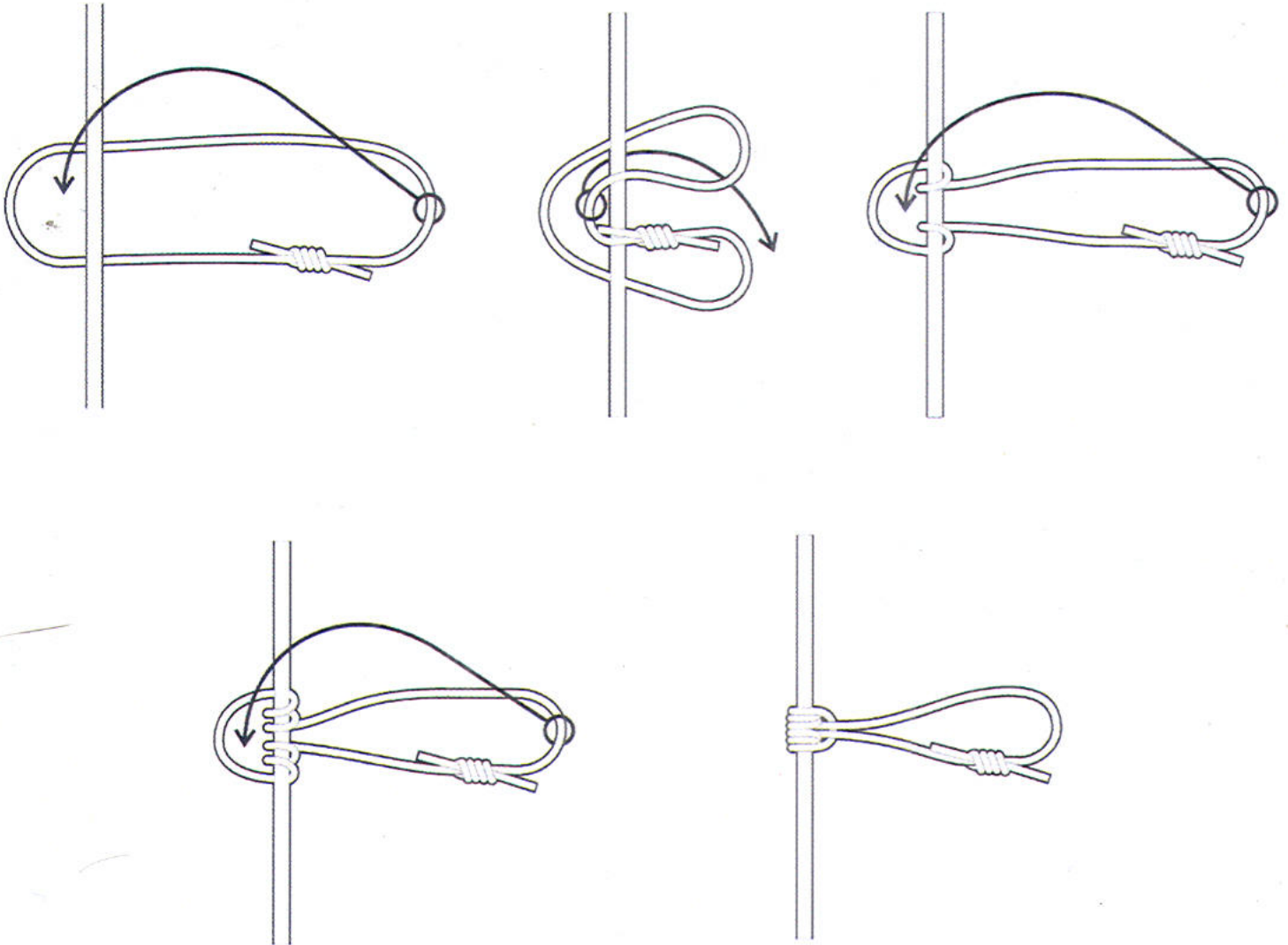
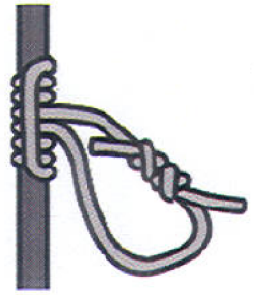


Double Butterfly Knot



Three Wrap Prusik Hitch

Also known as the prusik knot, the three wrap prusik hitch is used to attach a prusik loop to a life safety rope, forming a hauling, ratchet, or braking cam. The two wrap prusik hitch used in mountaineering doesn't have sufficient holding power for rescue operations and should not be used.



Double-Wrap Prusik Hitch

see animation: (click link)

http://www.netknots.com/html/prusik_knot.html

<http://www.animatedknots.com/prusik/index>

**Prusik
Knot**

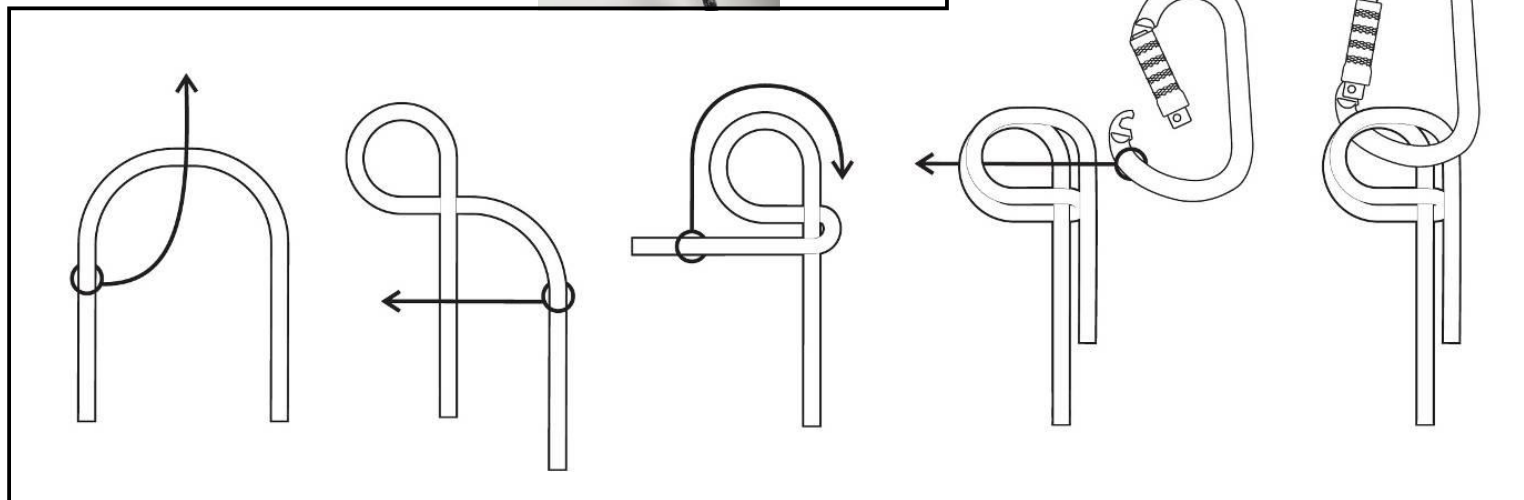


Munter Hitch

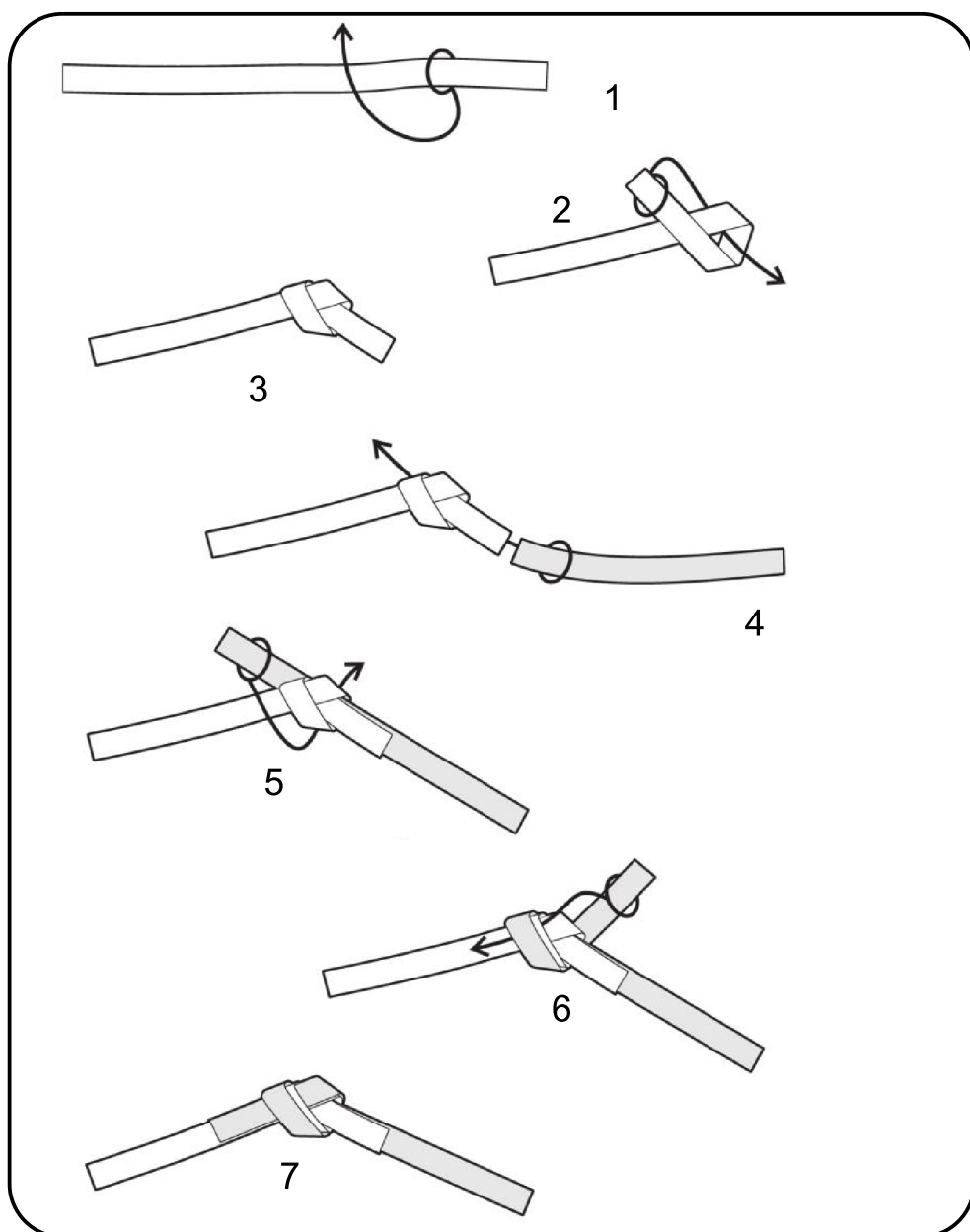


see animation: (click link)

http://www.netknots.com/html/munter_hitch.html



Water Knot



see animation: (click link)

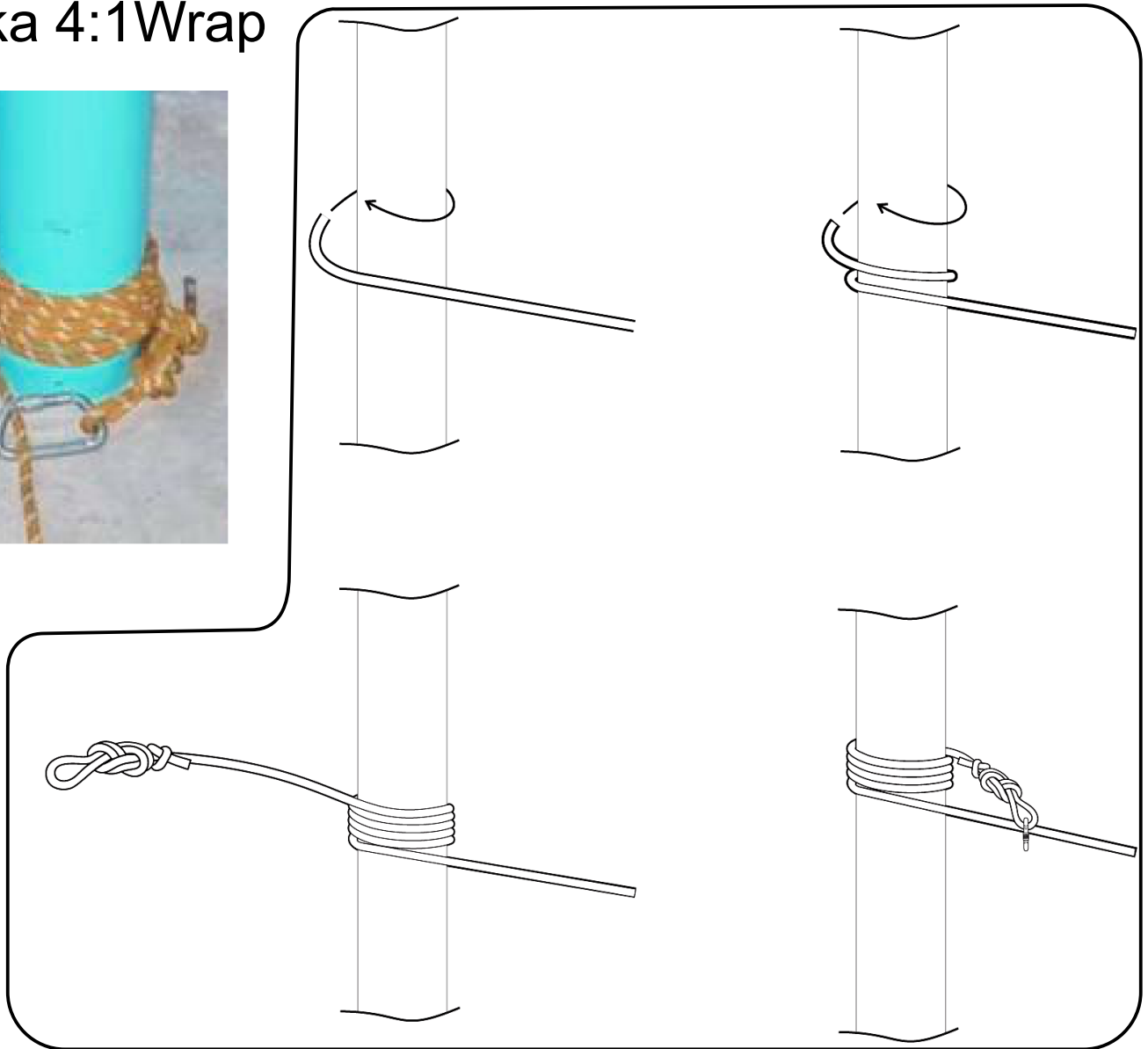
<http://www.animatedknots.com/waterknot/index.php>

Tensionless Anchor

see animation: (click link)

<http://www.animatedknots.com/tensionless/index.php>

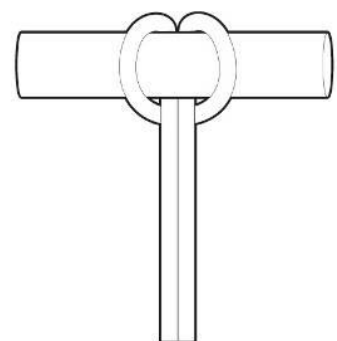
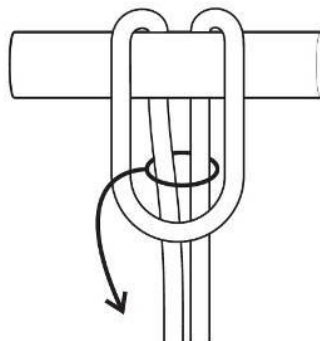
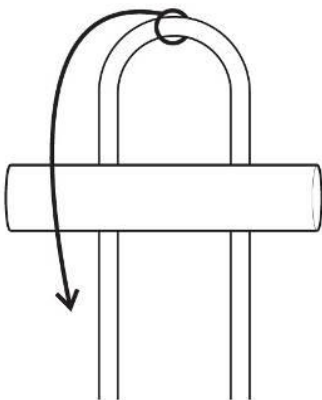
aka 4:1Wrap



Girth Hitch

see animation: (click link)

see animation: (click link) <http://www.animatedknots.com/girth/index.php>



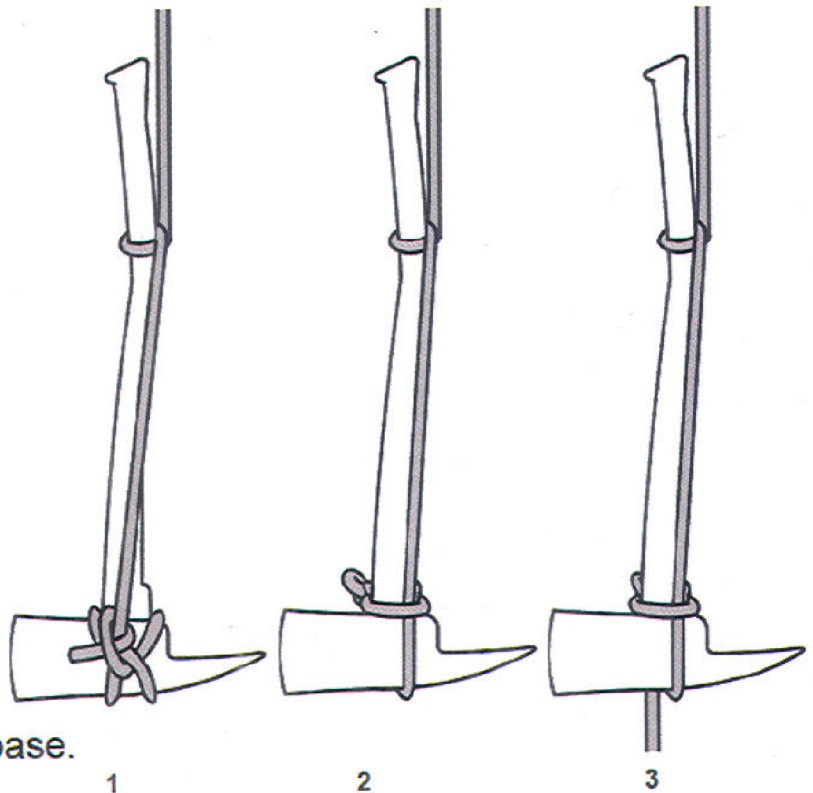
AXE HOIST

Clove Hitch

Formed by tying a clove hitch with a half hitch safety around the axe head, capturing the handle, followed by a half hitch on the axe handle near the base. (1)

Running Bowline

Formed by placing the handle inside the bowline, with the running part around the axe head, followed by a half hitch on the axe handle near the base. (2)



Middle Of Rope Tie

Formed by making a slip knot around the axe handle, capturing the axe head, followed by a half hitch around the axe handle near the base. (3)

BARREL TIE HOIST

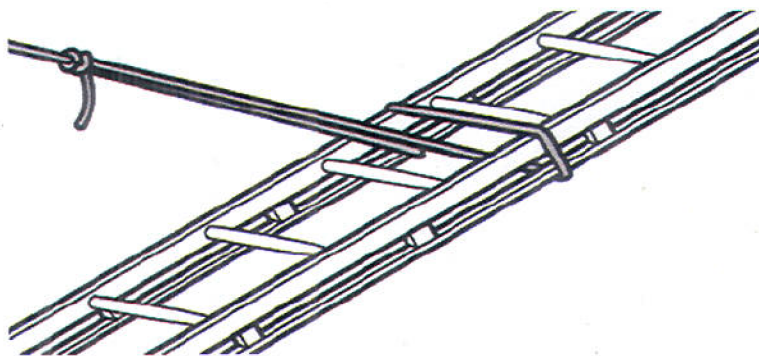
Equalizing Bowline

Formed by placing the barrel on the rope and tying an overhand knot above the top of the barrel, separating the overhand knot and slipping it over the sides of the barrel 1/3 down from the top, then cinching the rope and tying an equalizing bowline at the top of the barrel.



Bridging Tie

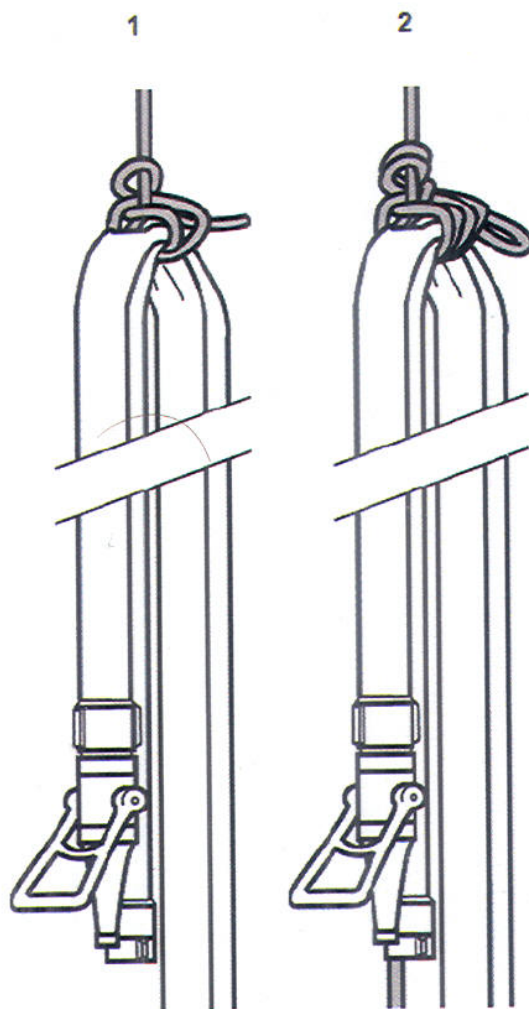
Used to bridge an open space between buildings, the bridging tie is formed by tying the equalizing bowline around a straight-trussed ladder. Once the ladder is placed, the rope is left attached but placed to the side to prevent it from interfering with the use of the ladder.



SMALL LINE HOIST – BUNDLE

Clove Hitch

Formed by placing the nozzle side of the hose over the female end of the hose and lining up the female coupling even with nozzle tip, then tying a clove hitch with a half hitch safety around both the nozzle end and female end of the hose at least 4 feet behind the nozzle connection. (1)



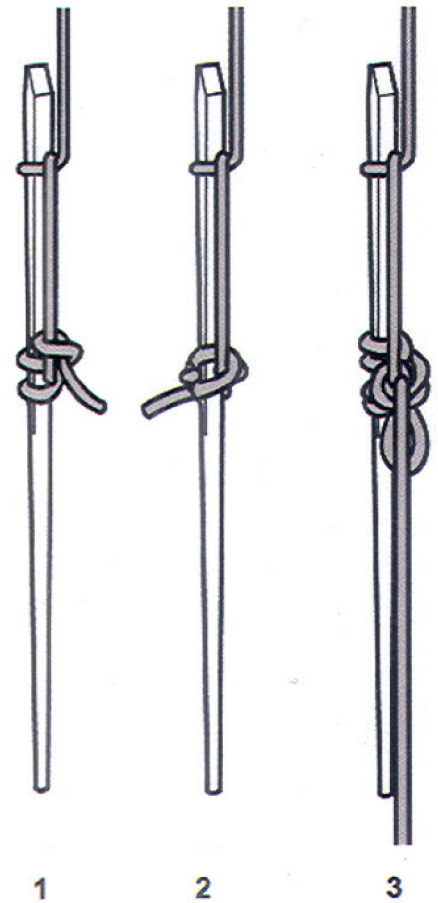
Middle Of Rope Tie

Formed by placing the nozzle side of the hose over the female end of the hose and lining up the female coupling even with nozzle tip, then tying a clove hitch on a bight with a half hitch safety around both the nozzle end and female end of the hose at least 4 feet behind the nozzle connection. (2)

CROW BAR HOIST

Clove Hitch

Formed by tying a clove hitch with a half hitch safety around the handle, just under the shoulder of the bar, followed by a half hitch on the large end of the bar 12 inches from the tip. (1)



1

2

3

Running Bowline

Formed by tying the running bowline around the handle and cinching it just under the shoulder of the bar, followed by a half hitch on the large end of the bar 12 inches from the tip. (2)

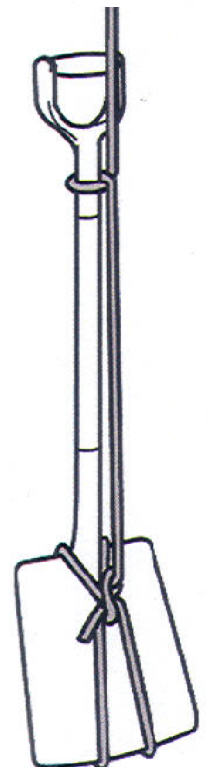
Middle Of Rope Tie

Formed by making two back-to-back overhand loops from a bight in a rope, and then put the top loop underneath the bottom one and cinching it (forming a clove hitch) around the handle just under the shoulder of the bar, then a half hitch safety on the clove hitch, followed by a half hitch on the large end of the bar 12 inches from the tip. (3)

SQUARE SHOVEL HOIST

Clove Hitch

Formed by tying a clove hitch with a half hitch safety around the scoop and capturing the shovel handle followed by a half hitch near the bale of the shovel.



LARGE LINE HOIST

Dry Line

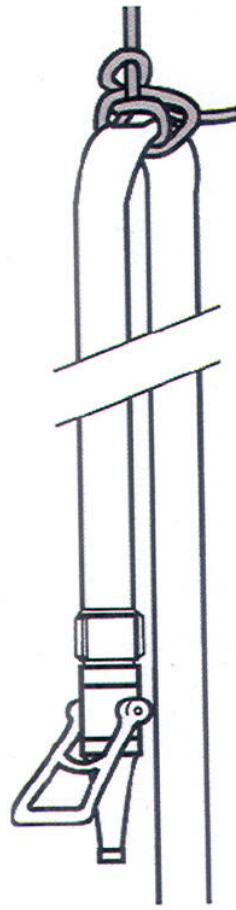
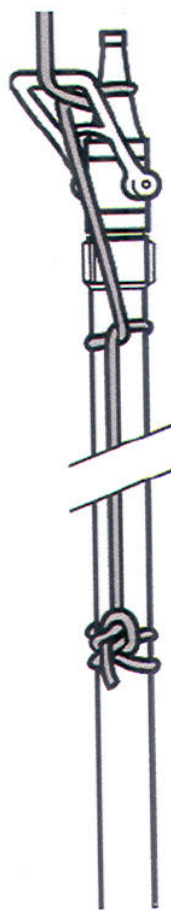
Formed by folding the Gorter shut-off and hose back at least four feet over the top of the hose with the shut-off handle facing into the fold, then tying a clove hitch with a half hitch safety around the shut-off above the collar followed by a half hitch around 1 foot from the hose bight.



SMALL LINE HOIST – READY LINE

Charged Line

Formed by tying a clove hitch with a half hitch safety around the hose 4 feet behind the nozzle, then a half hitch around the hose 3 to 6 inches back from the nozzle connection followed by a half hitch slipped through the nozzle bale and around the nozzle. (1)



Dry Line

Formed by tying a clove hitch with a half hitch safety 4 feet behind the nozzle. (2)

Hasty Harness - Waist



Using 20' Webbing, split ½
& place loop into waist band



Pass both ends back
between legs



Wrap around the thighs
and through the initial loop



Wrap remainder
around waist using up strap



Wrap remainder
around waist using up strap



Wrap remainder
around waist using up strap



Wrap remainder
around waist using up strap



Wrap remainder
around waist using up strap



Secure with a square knot,
locked with half hitch



Secure Carabiner to waist loops and
center through loop - forming harness

see animation: (click link)

<http://www.animatedknots.com/harness>

Full Body Webbing Harness - FRONT LOAD for Conscious Victim



split 20' webbing w/ water knot to the back



divide webbing equally to both sides



pull loop under backside



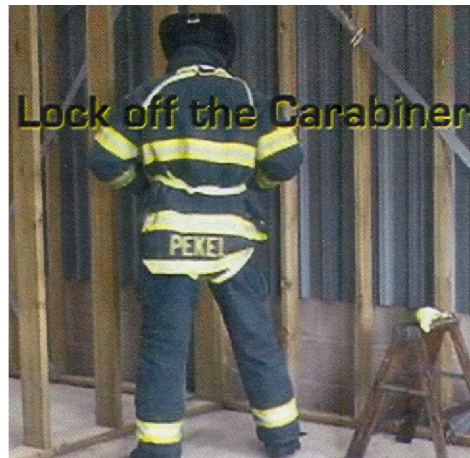
feed 2 loops in hand through loop under backside



pull loops so have 1 at each side



put a loop over each arm



clip carabiner to the back side of each loop securing them together



pull on loop at waist snugging all loops to the body, clip in carabiner



Twist that loop shortening it, then click carabiner back into center web



This complete the harness - click the rescue rope into the harness carabiner

Full Body Webbing Harness - BACK LOAD for Unconscious Victim



split 20' webbing w/ water knot center - crossing webbing making an 8



place a leg into each loop of the 8



pull upward, put a twist into the right arm loop and place over shoulder



put a twist into the left arm loop and place over shoulder



flatten the webbing



pull loops upward tightening loops to the body



place knot into loops created securing webbing to body



place 2nd knot into loops created securing 1st knot made



Place Carabiner/ rescue rope into the loops created



Harness created

Lowering a Person via Life Saving Rope and Personal Harness

Equipment required:

1. Nylon life saving rope with attached anti-chaffing device in a back pack carrying case.
2. Two Personal Harnesses



Objective:

1. To lower a firefighter from a roof or upper floor to a position of safety
2. To lower a firefighter from a roof or upper floor, in order to enable that firefighter to remove another person from an untenable position to one of safety.

Preparation for Lowering (With or Without a parapet):

Both members adjust their harness leg straps for proper fit, open bottom snap on coat for access to hook and release hook from support strap.

Member 1 - Lowering Member

1. Facing the roof's edge, place the carrying case on the roof with the back of the case facing the roof's edge. the case must be placed midway between the roof's edge and a substantial object.

2. Facing the front of the case, open the top flap. Hand member #2 the rope's snap hook. Allow the anti-chaffing device to slide along the rope.
(If there is a bowline on a bite knot, it must be untied.)

3. With both hands, grasp the sides of the case, holding the flap against the back case with the fingers.

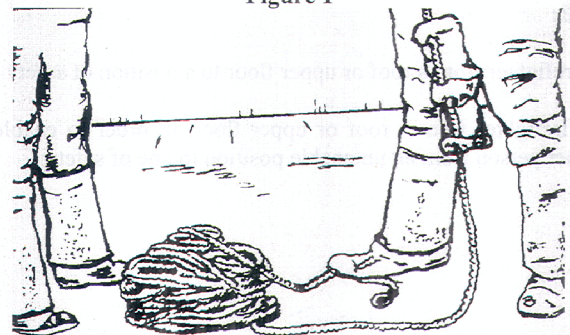
4. Invert the carrying case and lift the case clear of the rope, using care not to disrupt the coil of rope. Place the empty case to the side, clear of operations.

Member 1

5. Grasp the snap hook at the top of the coil and place it on the roof, to the left, adjacent to the coiled rope.

Member 2 - Member to be Lowered

Figure 1



Member 2

Member 1 - Lowering Member

Member 2 - Member to be Lowered

7. Maintain position of the hook adjacent to the coiled rope by placing one foot on the snap hook, as member 1 pays out additional rope to the substantial object. (Figure 2)

8. Pay out rope from the top of the coil to substantial object. Pull the rope taut and take a turn around the substantial object. Tie a clove hitch and binder on the taut part of the rope. (Figure 2 & 3)

Figure 2

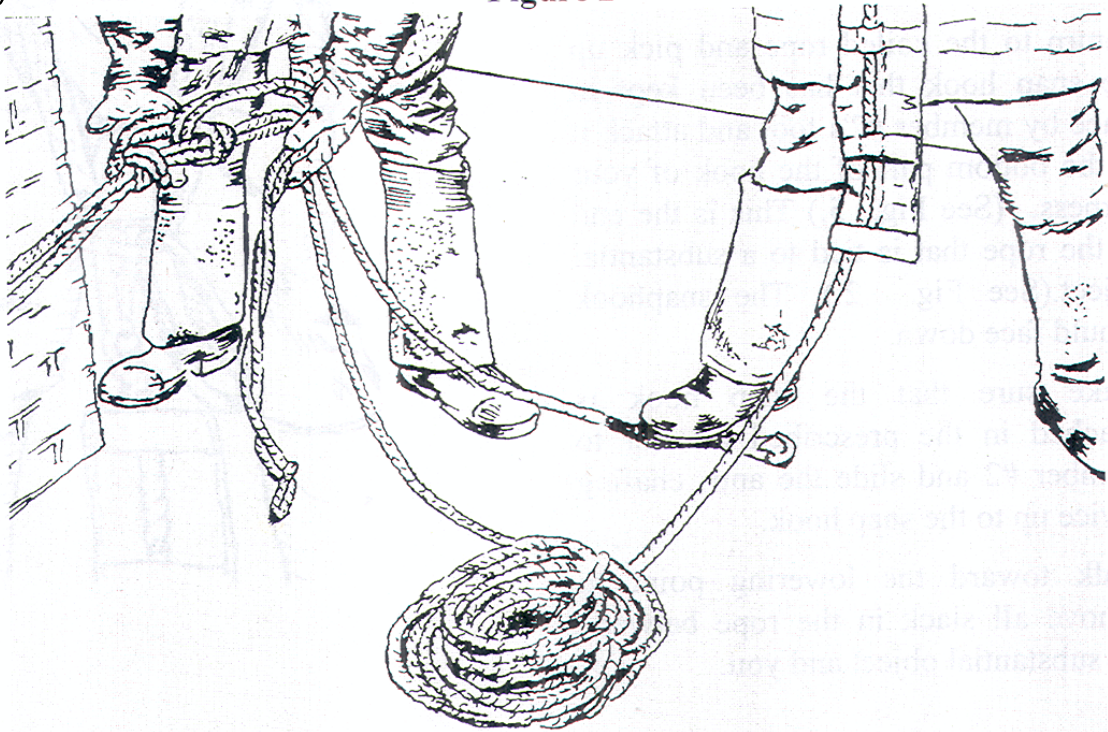
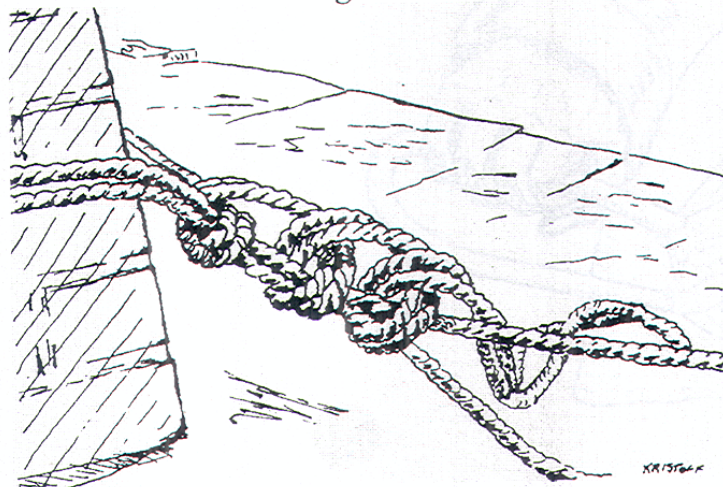


Figure 3



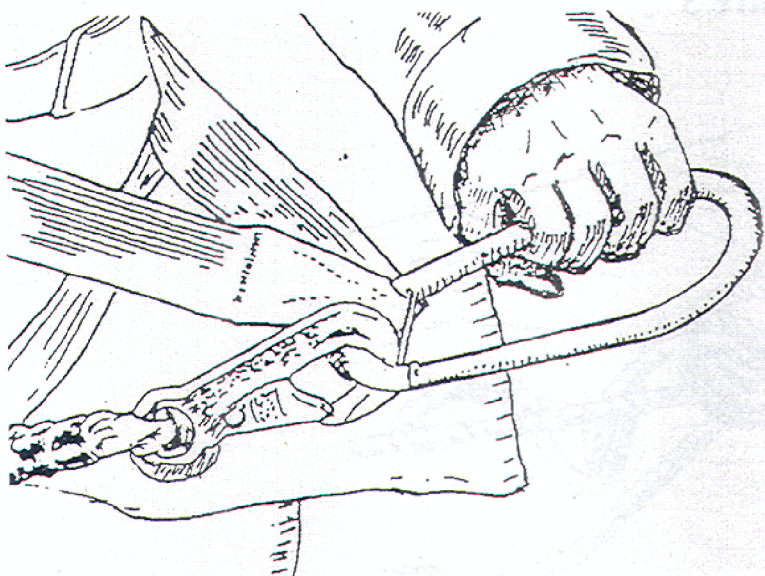
Member 1 - Lowering Member

10. Return to the coiled rope and pick up the snap hook that has been kept in place by member 2 foot and attach it to the bottom part of the hook of your harness. (Fig. 5) This is the end of the rope that is tied to a substantial object (Figure 2 . The snap-hook should face down.

11. Make sure the snap hook is attached in the prescribed manner to member 2 and slide the anti-chaffing device up to the snap hook.

12. Walk towards the lowering point to remove all slack in the rope between the substantial object and you.

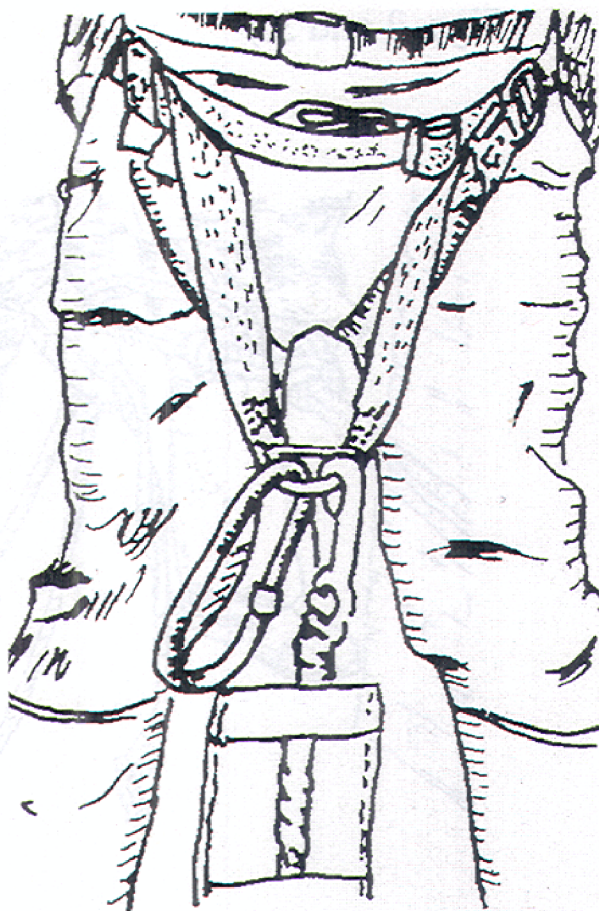
Figure 5



Member 2 - Member to be Lowered

9. Pull the harness hook from beneath your bunker coat and attach the snap hook of the rope to the harness handle as shown (Figure 4). This is the end of the rope with the anti-chaffing device on it. Hold the anti-chaffing device in your left hand.

Figure 4



Member 1 - Lowering Member

Member 2 - Member to be Lowered

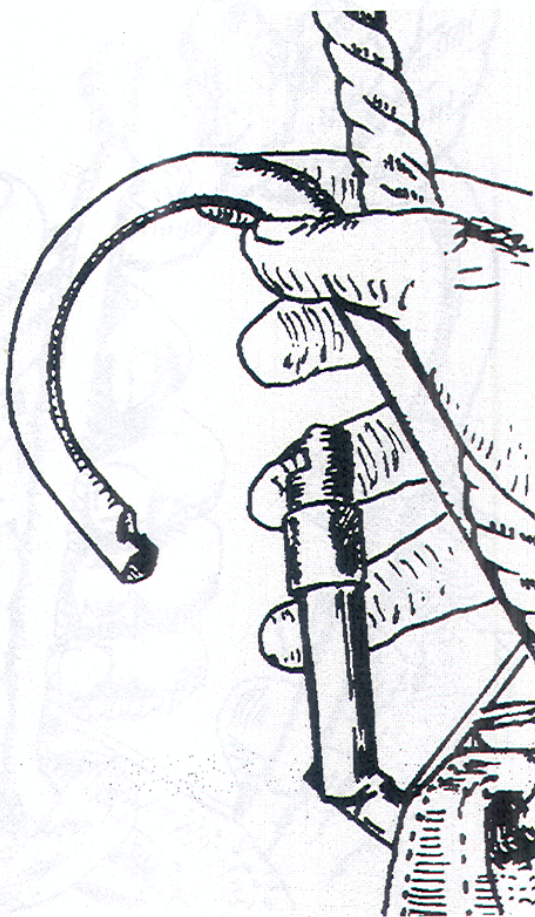
13. Facing member 2, grasp the section of rope leading to the anti-chaffing device with your right hand and bring this hand back along the rope to your right hip.

14. Using this point on the rope, bring the rope forward and lay the solid part of the harness hook on the top of the rope. Grasp both the rope and the hook in the right hand.

15. Using the left hand, loosen the screw collar of the gate. Gate should now open freely.

16. With the left hand, push "gate" over to solid side hook. As gate reaches end of the motion, grab the hook, rope and gate together with right hand. (figure 6)

Figure 6



Member 1 - Lowering Member

17. With you left hand, make 4 turns, under and over the harness hook with the rope leading to member 2
(Figure 7A & 7B)

18. Note: It is important to spiral the rope onto the hook properly. This prevents the screw collar of the gate from unscrewing.

19. Using you left hand, tighten the screw collar and then grasp the harness hook at the gate with the left hand, PALM DOWN.

20. Slide your right hand back along the rope to your right buttock. Allow enough rope to pay out through the hook to permit member 2 to approach the parapet or rooks edge.

Figure 7A

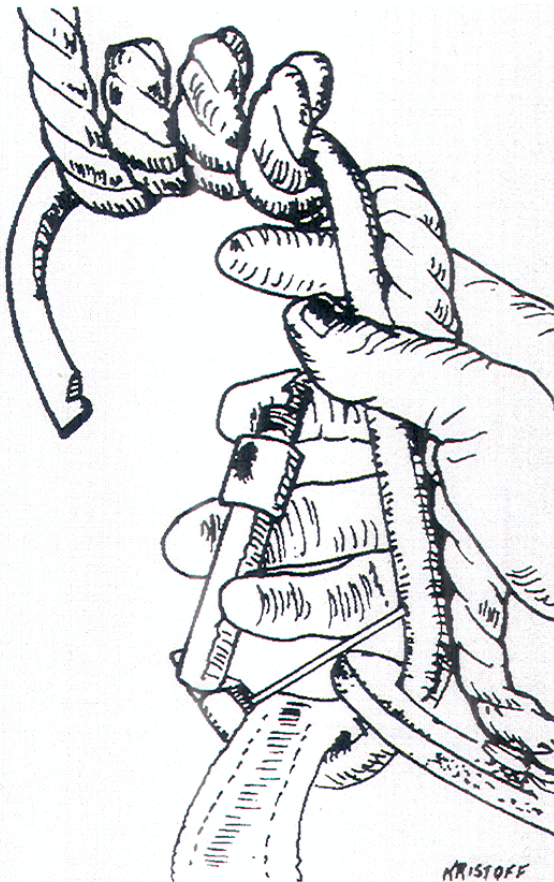
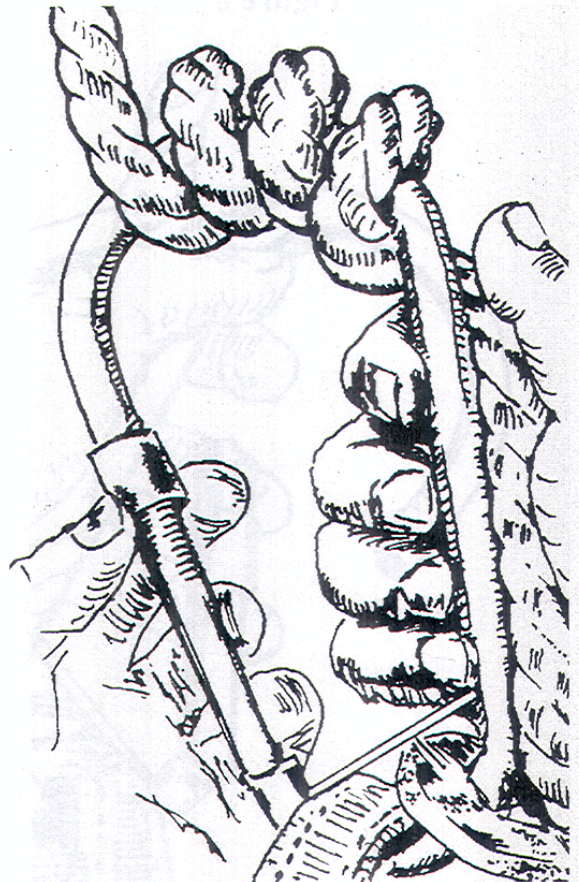


Figure 7B



Lowering Operations from a building with a parapet:

Member 1 - Lowering Member

3. Still hold the harness hook with the left hand, PALM DOWN, firmly grasp the rope in the right hand positioned at your right buttock. Give the command "DISMOUNT" to member 2 to dismount the parapet. (figure 8)

Figure 8



Member 2 - Member to be Lowered

1. Holding the anti-chaffing device in the left hand, turn to the right and straddle the parapet with the right leg to the outside.
2. Allow enough slack in the rope to place the anti-chaffing device flat on the parapet with approximately 5" of the device draped over the outer edge. (figure 9)

NOTE: Harness hook must clear outside of the parapet.

Figure 9



Member 1 - Lowering Member

7. At the command "DOWN", lower member 2. Control the rope as it slides through your gloved right hand.

NOTE: If a third member is available he should be at the roofs edge for control and to relay commands.

Member 2 - Member to be Lowered

4. Both gloved hands, grip the inner edge of the parapet, with the hand on either side of the anti-chafing device. (fig. 9)

NOTE: To maintain the position of the anti-chafing device, place the thumb of the right hand on top of the device while the fingers grasp the inner edge of the parapet.

5. Slide your buttocks to the outer edge of the parapet until your knee is at the inner edge of the parapet and make sure that the rope is in the channel of the anti-chafing device.

6. Roll off the parapet into a vertical position and place feet approximately 12" apart against the wall, toes up and give the command "DOWN" to the lowered.

NOTE: Both hands remain on the parapet until you are in a vertical position.

Figure 9



Lowering Operations from a building without a parapet:

Member 1 - Lowering Member

3. Still holding the harness hook with the left hand "PALM DOWN", firmly grasp the rope in the right hand positioned at your right buttock. Give the command "DISMOUNT" to member 2 to dismount the roof (figure 8).

Figure 8



Member 2 - Member to be Lowered

1. Holding the anti-chaffing device in the left hand, walk to the roof's edge and sit with your legs over the edge, the rope and anti-chafing device to your left. (figure 10)

(figure 10)

NOTE: Under Smoky or unsure conditions it may be better to crawl to the roof's edge.

2. Allow enough slack in the rope to place the anti-chaffing device flat on the roof's edge with approximately 5" of the device draped over the edge of the roof (figure 11)

NOTE: Harness hook is at the end of the anti-chafing device and must clear the edge of the roof.

Figure 10

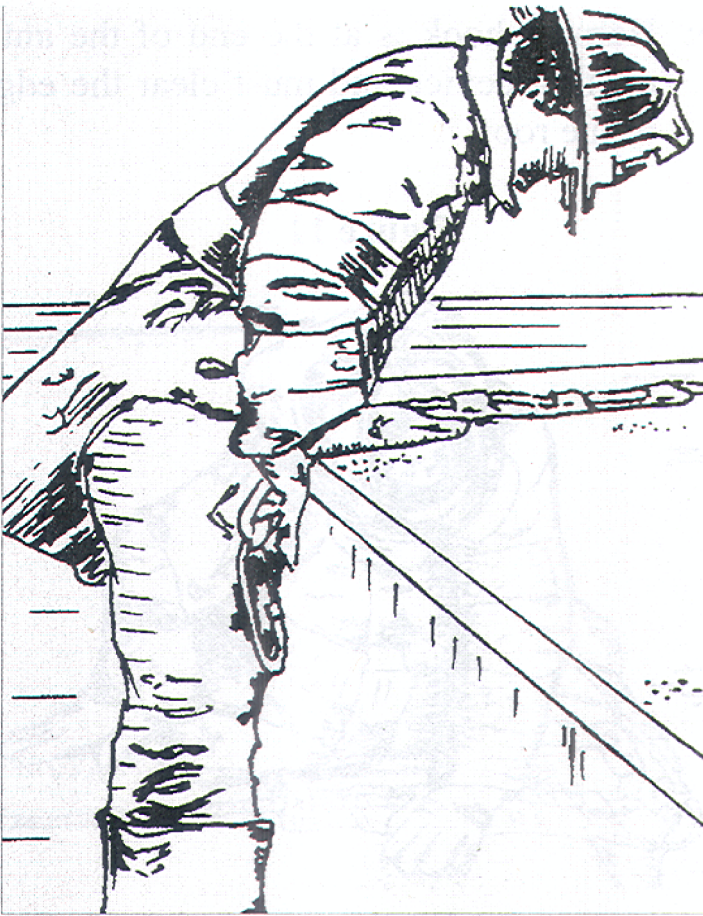


Figure 11



Member 1 - Lowering Member

Figure 12



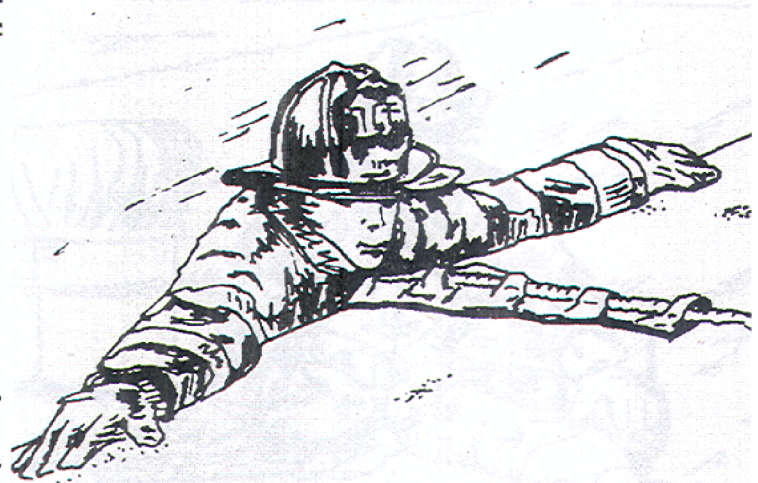
Member 2 - Member to be Lowered

4. Place the left hand between the anti-chaffing device and you left leg. Using the hand as a pivot, roll the body the left, into a pushup position and make sure the rope is in the channel of the anti-chaffing device (figure 12).

5. Lowering the body into a vertical position (figure 13)

NOTE: As the vertical position is attained, the slack in the rope between the harness handle and the anti-chaffing device will cause the member to drop slightly until the slack is eliminated.

Figure 13



6. Place feet approximately 12" apart against the wall, toe up and give the command "DOWN" to be lowered.

7. At the command "DOWN", lower member 2. Control the rope as it slides through your gloved right hand.

NOTE: If a third member is available that member should be at the roof's edge for control and relay commands.

Member being lowered rescue a victim at lower level:

Member 1 - Lowering Member

Figure 14



Member 2 - Member to be Lowered

1. Continue being lowered until you reach the proper level to rescue the victim. Give the command "STOP" to halt the lowering. A Guide member at roof level can relay the command if necessary.

NOTE: Descent should not be in line with windows.

2. In order for the Guide member or 'member 1 to hear your verbal command, it will be necessary for you to look up towards the roof when giving them.

3. On the command "STOP", halt lowering operations by closing the right hand firmly on the rope. Await the completion of the pick up.

Figure 15



4. Instruct the victim to place both arms around your neck, both legs around your waist and maintain a firm hold.
(Figure 14)

5. Place your arms around the victim's upper torso, under the armpits and lock your hands behind the victims back.
(Figure 15)

NOTE: Signal to lower must be verbally by the member being lowered. Member must look up in order to be heard by the guide member or member 1.

6. Continue descent until an area of safety is reached.

Single Slide from a Building *with* a Parapet

Equipment required:

1. Nylon life saving rope with attached anti-chaffing device in a carrying case.
2. Personal Harnesses



Objective:

Used by firefighters to remove themselves from an untenable position to a safe one.

NOTE: This slide should only be used as a last resort when circumstances are such that alternative methods of removing oneself are denied. The single slide shall not be used to make a rescue pick up.

Preparation:

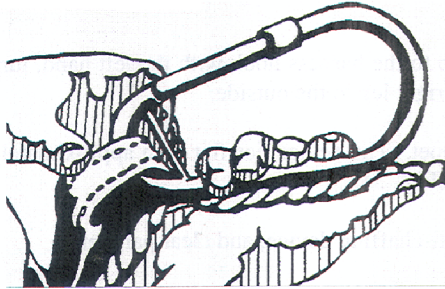
Adjust harness leg straps for proper fit. Open bottom snap of coat for access to hook. Release hook from harness hook strap.

Operation:

1. Place the back pack carrying case on the roof near a substantial object you plan to use.
2. Remove the snap hook from the pocket of the case. Grasp the anti-chaffing device and pull it through the window of the case.
3. Secure the life saving rope by taking a turn around the substantial object and tie a clove hitch and binder on the taut part of the rope.
4. Grasp the anti-chaffing device with one hand and pick up the carrying case with the other hand.
5. Walk to the parapet at the planned point of descent, sliding the anti-chaffing device along the rope and deploy the rope by tossing the carrying case to the street.
6. Place the anti-chaffing device on the parapet. Standing to the right of the rope, place the left elbow on the outer edge of the parapet and reach down and grasp the rope with the left hand.
7. Turn to the left. The slider's back will now be to the parapet.

8. With the right hand, lay the solid part of the harness hook (gate to the left) on top of the rope at the point of the left hand. Grasp the rope and hook together in the right hand. (Figure 1A)

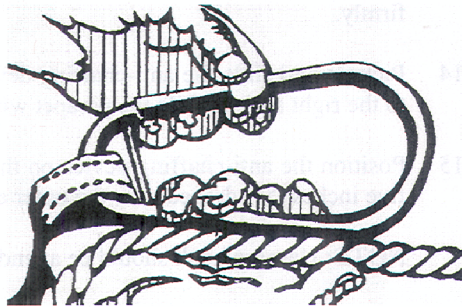
Figure 1A



9. The following procedure are in sequence:

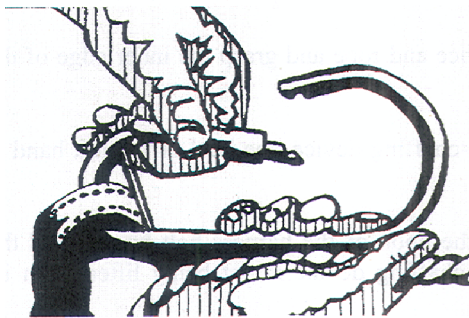
- a. With left hand, rotate the locking screw to the left until collar is all the way down, gate will now be open (Figure 1B)

Figure 1B



- b. with the left hand push gate over to solid side of hook (Figure 1C)

Figure 1C



- c. as gate reaches end of motion, grab hook, rope and gate together with the right hand (Figure 1D)

Figure 1D



Member is now ready to proceed to take four (4) turns of the rope around the hook.

Figure 2A

10. Using the left hand, make 4 turns of the rope under and over the harness hook. (Figure 2A)

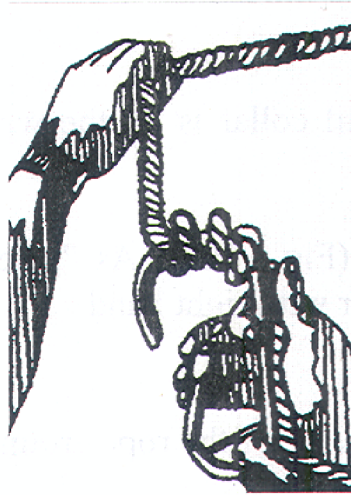


Figure 2B

11. Release the gate to closed position. (Figure 2B)

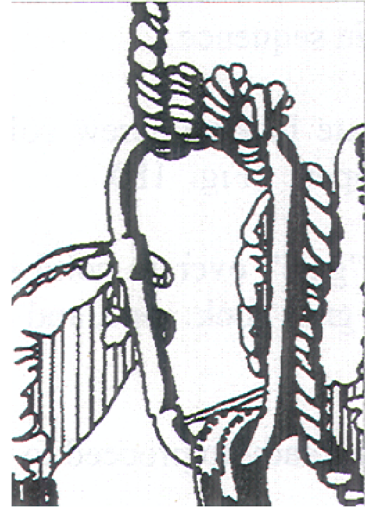
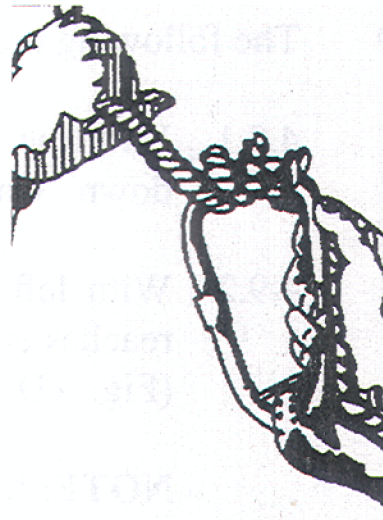


Figure 2C

12. With left hand rotate locking screw collar to right until collar is all the way up. (Figure 2C)



NOTE: It is extremely important that the locking screw collar is all the way up. If rope is placed on the hook improperly, screw collar can unscrew causing the rope to come off the hook.

13. Slide the right hand back along the rope approximately 6" and grasp the rope firmly.
14. Pick up and slide the anti-chaffing device up to the harness hook with the left hand, turn to the right and straddle the parapet with the right leg to the outside.
- 15 Position the anti-chaffing device on the parapet. The device lies flat with approximately 5" draped over the outer edge. (Figure 3)

NOTE: The Personal Harness hook should be at end of the anti-chaffing device, and clear of the roof's edge.

Dismounting The Parapet:

1. Place the left arm over the anti-chaffing device and rope, grasping the inner edge of the parapet with the left hand.

NOTE: To Maintain the position of the anti-chaffing device, the heel of the left hand is place on the device.

2. Check the slack in the rope to assure that the hook of the harness belt has cleared the edge of the parapet and that the anti-chaffing device is not being lifted from it's proper position.
3. Move the gloved right hand along the rope while stretch the right arm out a full arm's distance (fig. 3)
Grasp the rope firmly at this point.

4. Slide the buttock to the outer edge of the parapet until the left knee is at the right fist firmly against the wall.
The rope is between the fist and the wall (fig.3)

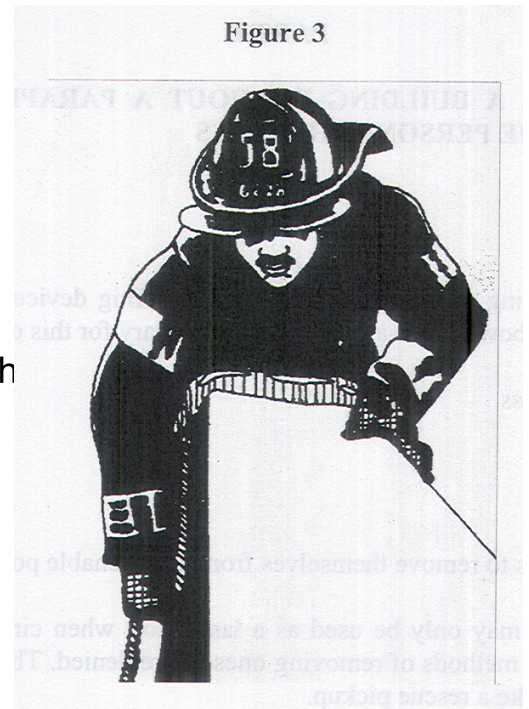
5. Using the rigid right arm for leverage, lean out over the parapet and make sure the rope is in the channel of the anti-chaffing device. The hook of the harness belt must clear the outer edge of the parapet.

6. Swing the body off the parapet into a vertical position the bring the right hand, gripping the rope, to the right buttock and maintains a firm grip on the rope.

7. Place feet against the wall, toes up, approximately 12" apart.

8. Bring the left had from the parapet and clear clothing, handie-talkie wire, etc.,from the area of the hook.

9. When ready to slide, grasp the hook of the belt at the gate, with the left hand, PALM DOWN.



Sliding:

1. Sliding is controlled by allowing the rope to pass through the gloved hand. The hand must be in a position against the right buttock at all times. The position affords absolute control of the slide
2. Look down to avoid and obstructions not noted or not present when the rope was deployed. Continue slide to safety -
3. The line of descent should be between rows of windows

Single Slide from a Building *without* a Parapet

Equipment required:

1. Nylon life saving rope with attached anti-chafing device in a carrying case.
2. Personal Harnesses



Objective:

Used by firefighters to remove themselves from an untenable position to one of safety.

NOTE: This slide should only be used as a last resort when circumstances are such that alternative methods of removing oneself are denied. The single slide shall not be used to make a rescue pick up.

Preparation:

Adjust harness leg straps for proper fit. Open bottom snap of coat for access to hook. Release hook from harness hook strap.

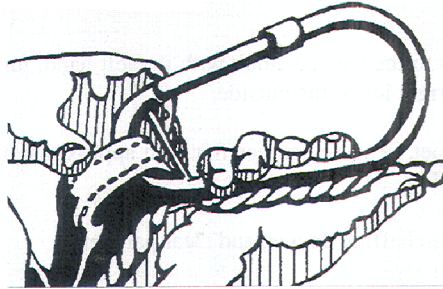
Operation:

1. Place the back pack carrying case on the roof near a substantial object you plan to use.
2. Remove the snap hook from the pocket of the case. Grasp the anti-chafing device and pull it through the window of the case.
3. Secure the life saving rope by taking a turn around the substantial object and tie a clove hitch and binder on the taut part of the rope.
4. Grasp the anti-chafing device with one hand and pick up the carrying case with the other hand.
5. Walk to the roof edge at the planned point of descent, sliding the anti-chaffing device along the rope and deploy the rope by tossing the carrying case to the street. (*in smoke conditions, it's best to crawl to roof's edge*)
6. Place the anti-chafing device on the roof near the edge. Standing to the right of the rope, kneel down and grasp the rope at the roof's edge with the left hand.
7. Maintain hold on the rope, stand and step back a safe distance. Turn to the left. Sliders back will now be to the roof's edge.

:

8. With the right hand, lay the solid part of the harness hook (gate to the left) on top of the rope at the point of the left hand. Grasp the rope and hook together in the right hand. (Figure 1A)

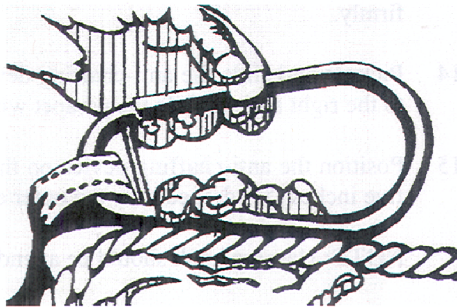
Figure 1A



9. The following procedure are in sequence:

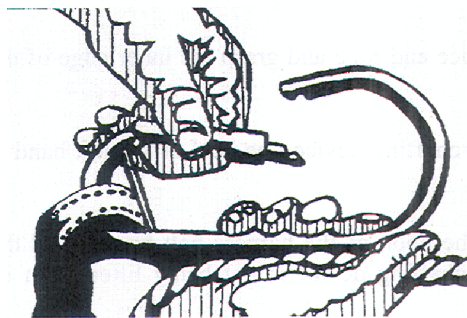
- a. With left hand, rotate the locking screw to the left until collar is all the way down, gate will now be open (Figure 1B)

Figure 1B



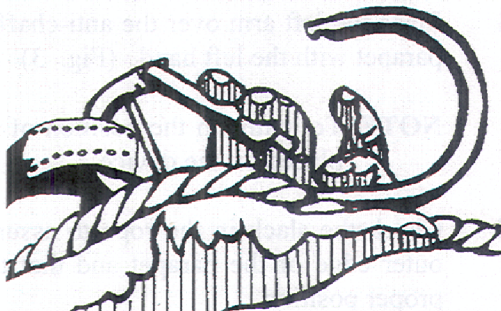
- b. with the left hand push gate over to solid side of hook (Figure 1C)

Figure 1C



- c. as gate reaches end of motion, grab hook, rope and gate together with the right hand (Figure 1D)

Figure 1D



Member is now ready to proceed to take four (4) turns of the rope around the hook.

Figure 2A

10. Using the left hand, make 4 turns of the rope under and over the harness hook. (Figure 2A)

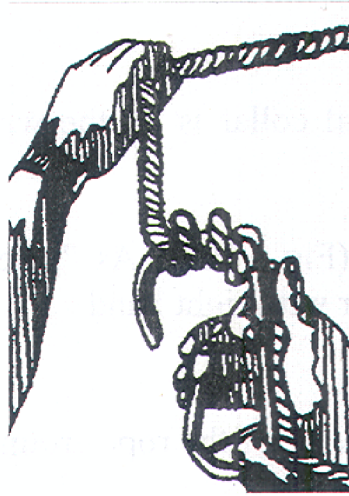


Figure 2B

11. Release the gate to closed position. (Figure 2B)

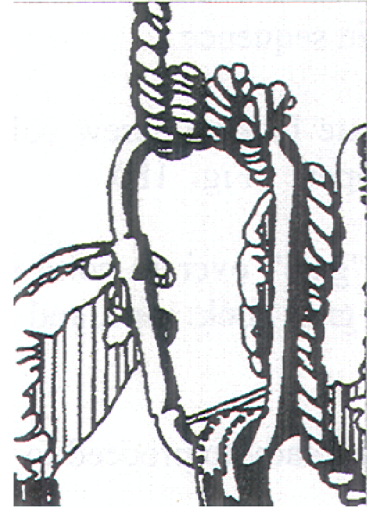
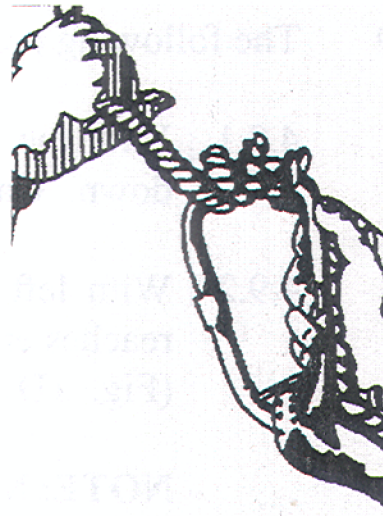


Figure 2C

12. With left hand rotate locking screw collar to right until collar is all the way up. (Figure 2C)



NOTE: It is extremely important that the locking screw collar is all the way up. If rope is placed on the hook improperly, screw collar can unscrew causing the rope to come off the hook.

13. Grasping the anti-chaffing device with the left hand. Slide the anti-chaffing device up to the personal harness hook, slide the right hand along the rope to the right buttock, grasp the rope firmly and turn to the right, facing the roof's edge. Walk to the roof's edge paying out slack through the hook.
14. Sit on the roof's edge, legs over edge with the anti-chaffing device to the left. maintain a firm grip on the rope with the right hand at the right buttock. (Figure 3)
- 15 Position the anti-chaffing device on the parapet. The device lies flat with approximately 5" draped over the outer edge. (Figure 3)

NOTE: The Personal Harness hook should be at end of the anti-chaffing device, and clear of the roof's edge.

Dismounting The Roof:

1. To maintain the position of the anti-chaffing device, place the heel of the left hand on the device. Now, slide the body forward so that only the buttocks are on the roof (Figure 3).
2. Maintain the position of the right hand, (fig. 3) roll to the left while pushing off smartly with the left hand, keeping the body clear from the roof's edge. A drop of approximately 1.5' will be expected.
3. Now in a vertical position, place the feet against the wall, toes up, approximately 12" apart.
4. Using the left hand, clear clothing, handie-talkie, wire, etc., from the area of the hook.
5. When ready to slide, grasp the hook of the harness belt at the gate with the left hand, PALM DOWN.

Figure 3



Sliding:

1. Sliding is controlled by allowing the rope to pass through the gloved hand. The hand must be in a position against the right buttock at all times. The position affords absolute control of the slide
2. Look down to avoid and obstructions not noted or not present when the rope was deployed. Continue slide to safety -
3. The line of descent should be between rows of windows