

**New Hampshire Fire Standards and
Training and Emergency Medical Services.
Bureau of Fire Training.
Firefighter 1 Curriculum.**

Topic: Unit 8 Ropes and Knots

Revisions:

[illegible]

NHFA FIREFIGHTER I COURSE GUIDE,

CHAPTER 8: ROPES AND KNOTS

CHAP	SKILL DRILL	SKILL #	STAND. EVOL. #
8	Inspecting Ropes	8-18	
8	Cleaning Rope	8-19	
8	Placing a Rope In A Drop Bag	8-21	
8	Daisy Chain a Rope	8-20	
8	Tying a Half Hitch	8-2	
8	Tying a Figure Eight Knot	8-7	
8	Tying a Figure Eight On A Bight	8-8	
8	Tying a Figure Eight Follow-Through	8-9	
8	Tying a Girth Hitch	8-25	
8	Hoisting An Axe	8-12	
8	Hoisting A Pike Pole	8-13	
8	Hoisting A Charged & Uncharged Hose Line	8-15	
8	Hoisting an Exhaust Fan	8-14	
8	Hoisting a power tool	8-26	



NH FIRE ACADEMY FIREFIGHTER I
UNIT 8 BLOCK 1 (4HR)

CLASS NAME: ROPES AND KNOTS

NUMBER OF INSTRUCTORS: 3

EQUIPMENT NEEDED	<ul style="list-style-type: none"> • One Rope for each student (5/8") X 15 ft. (minimum length) • Four bagged ropes for bagging and inspecting (4)
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FACILITY NEEDED	An area where students can tie the required knots and hoist tools.
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SKILL DRILL REFERENCE	8-2	8-7	8-8	8-9	8-12	8-13	8-15
	8-18	8-19	8-20	8-21	8-25		

GENERAL INSTRUCTION	<p>The Instructors shall demonstrate the step by step process for tying each knot and hoisting, attack hose, and a variety of tools</p> <p>The students shall tie knots, hoist attack hose, and hoist a variety of tools, with coaching and guidance from the Instructors.</p> <p>Although gloves are required for tying all knots, it may be advisable for the students to tie knots without gloves until they gain confidence with the skill.</p>
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NH FIRE ACADEMY FIREFIGHTER I
UNIT 8 BLOCK 1 (4HR)

EVOLUTION	DESCRIPTION
Tying Knots	<p>The instructor shall demonstrate how to properly tie the following knots: Figure eight knot, Figure eight on a Bight, Figure eight follow through, and Girth Hitch</p> <p>The Students shall tie the following knots:</p> <ul style="list-style-type: none"> -Figure eight knot, Skill Drill 8-7 -Figure eight on a Bight, Skill Drill 8-8 -Figure eight follow through, Skill Drill 8-9 -Girth Hitch, Skill Drill 8-25 -Half Hitch, Skill Drill 8-2 <p>The Instructors shall provide various situations for tying the knots such as: tying the figure 8 follow- through and Girth Hitch around various size objects and how to successfully tie the knot with adequate free end.</p>
Inspecting and Bagging Rope	<p>The Instructor shall demonstrate inspecting a rope while bagging the rope, cleaning the rope, how to properly coil and uncoil a rope, and how to daisy chain a rope. Note: To inspect the rope while it is bagged normally requires two individuals.</p> <p>The students shall demonstrate how to bag and inspect a rope, cleaning the rope, how to properly tie a daisy chain a rope. Skill Drill 8-18, 8-19, 8-20, and 8-21</p>
Tying and Hoisting Tools and Hose Lines	<p>The Instructor shall locate an area where tools and hose lines can be tied and hoisted. The instructor shall demonstrate how to throw a rope bag and tie off the running end of the rope.</p> <p>The Instructor shall demonstrate tying & hoisting tools and tying & hoisting a charged and uncharged hose line from the working end of the rope.</p> <p>Each student shall tie the appropriate knots to hoist an axe, pike pole, Exhaust fan, power saw and an uncharged and charged hose line. Skill Drill 8-2, 8-8, 8-14, 8-25 and 8-26</p>

FIRE ENGINEERING'S HANDBOOK FOR FIREFIGHTER I & II
Instructor Curriculum Skill Evaluation Sheet

SKILL SHEET 8-2		Half Hitch Knot	
OBJECTIVE:		NFPA 1001, 4.1.2 & 4.3.20	FEH Chapter: 8
CANDIDATE NAME/NUMBER:			No.:
TEST DATE/TIME			
EQUIPMENT REQUIRED: [Add local requirements if needed]		<ul style="list-style-type: none"> A length of life safety or utility rope. 	
EVALUATOR INSTRUCTIONS			
CANDIDATE INSTRUCTIONS: <i>NOTE: The evaluator will read the following exactly as it is written to the candidate</i>		The student will properly tie a Half Hitch Knot	
CRITERIA:		NOTE: Based on material from the Skill Drill Instructor Guides [ADDITIONAL LINES FOR AHJ TO ADD OTHER MATERIAL]	
Critical?		Pass	Fail
	The student makes a loop in the standing part of the rope.		
	The student slides the loop over the object being hoisted. Make sure the running end passes under the working end. This must tighten against itself.		
	The student verbalizes the primary uses of a half hitch.		
EVALUATOR COMMENTS: [ANY COMMENTS PRO OR CON REGARDING WHAT THE STUDENT ACCOMPLISHED]			
EVALUATOR SIGNATURE:			
STUDENT SIGNATURE:			

FIRE ENGINEERING'S HANDBOOK FOR FIREFIGHTER I & II
Instructor Curriculum Skill Evaluation Sheet

SKILL SHEET 8-7		Figure Eight	
OBJECTIVE:		NFPA 1001, 4.1.2 & 4.3.20	FEH Chapter: 8
CANDIDATE NAME/NUMBER:			No.:
TEST DATE/TIME			
EQUIPMENT REQUIRED: [Add local requirements if needed]		<ul style="list-style-type: none"> A length of life safety or utility rope. 	
EVALUATOR INSTRUCTIONS			
CANDIDATE INSTRUCTIONS: <i>NOTE: The evaluator will read the following exactly as it is written to the candidate</i>		The student will properly tie a Figure Eight Knot	
CRITERIA:		NOTE: Based on material from the Skill Drill Instructor Guides [ADDITIONAL LINES FOR AHJ TO ADD OTHER MATERIAL]	
Critical?		Pass	Fail
	The student places the rope in their palm with the working end away.		
	The student grasps the working end from between the rope and arm.		
	The student brings the working end of the rope around the back of their hand and follows the fingers, from the wrist to the tips, through the loop.		
	The student tightens the knot by pulling on both ends.		
EVALUATOR COMMENTS: [ANY COMMENTS PRO OR CON REGARDING WHAT THE STUDENT ACCOMPLISHED]			
EVALUATOR SIGNATURE:			
STUDENT SIGNATURE:			

FIRE ENGINEERING'S HANDBOOK FOR FIREFIGHTER I & II
Instructor Curriculum Skill Evaluation Sheet

SKILL SHEET 8-8		Figure Eight on a Bight	
OBJECTIVE:		NFPA 1001, 4.1.2 & 4.3.20	FEH Chapter: 8
CANDIDATE NAME/NUMBER:			No.:
TEST DATE/TIME			
EQUIPMENT REQUIRED: [Add local requirements if needed]		<ul style="list-style-type: none"> A length of life safety or utility rope. 	
EVALUATOR INSTRUCTIONS			
CANDIDATE INSTRUCTIONS: <i>NOTE: The evaluator will read the following exactly as it is written to the candidate</i>		The student will properly tie a Figure Eight on a Bight Knot	
CRITERIA:		NOTE: Based on material from the Skill Drill Instructor Guides [ADDITIONAL LINES FOR AHJ TO ADD OTHER MATERIAL]	
Critical?		Pass	Fail
	The student forms a bight in the rope and places it in their palm, with the bight away from them.		
	The student grasps the working end from between the rope and arm.		
	The student brings the working end of the rope around the back of their hand and follows the fingers, from the wrist to the tips, through the loop.		
	The student tightens the knot by pulling on both ends.		
EVALUATOR COMMENTS: [ANY COMMENTS PRO OR CON REGARDING WHAT THE STUDENT ACCOMPLISHED]			
EVALUATOR SIGNATURE:			
STUDENT SIGNATURE:			

FIRE ENGINEERING'S HANDBOOK FOR FIREFIGHTER I & II
Instructor Curriculum Skill Evaluation Sheet

SKILL SHEET 8-9		Figure Eight Follow Through	
OBJECTIVE:		NFPA 1001, 4.1.2 & 4.3.20	FEH Chapter: 8
CANDIDATE NAME/NUMBER:			No.:
TEST DATE/TIME			
EQUIPMENT REQUIRED: [Add local requirements if needed]		<ul style="list-style-type: none"> • A length of life safety or utility rope. • A ring or object 	
EVALUATOR INSTRUCTIONS			
CANDIDATE INSTRUCTIONS: <i>NOTE: The evaluator will read the following exactly as it is written to the candidate</i>		The student will properly tie a Figure Eight Follow Through Knot	
CRITERIA:		NOTE: Based on material from the Skill Drill Instructor Guides [ADDITIONAL LINES FOR AHJ TO ADD OTHER MATERIAL]	
Critical?		Pass	Fail
	The student make a basic figure eight, leaving sufficient rope on the working end to go around the object they are securing the rope to.		
	The student wraps the rope around the object to be tied.		
	The student now follows the rope back through the knot in the opposite direction.		
EVALUATOR COMMENTS: [ANY COMMENTS PRO OR CON REGARDING WHAT THE STUDENT ACCOMPLISHED]			
EVALUATOR SIGNATURE:			
STUDENT SIGNATURE:			

FIRE ENGINEERING'S HANDBOOK FOR FIREFIGHTER I & II
Instructor Curriculum Skill Evaluation Sheet

SKILL SHEET 8-12		Hoisting an Axe	
OBJECTIVE:		NFPA 1001, 4.1.2 & 4.3.20	FEH Chapter: 8
CANDIDATE NAME/NUMBER:			No.:
TEST DATE/TIME			
EQUIPMENT REQUIRED: [Add local requirements if needed]		<ul style="list-style-type: none"> • Utility Rope • Axe 	
EVALUATOR INSTRUCTIONS			
CANDIDATE INSTRUCTIONS: <i>NOTE: The evaluator will read the following exactly as it is written to the candidate</i>		The student will tie the appropriate knots to properly hoist an axe.	
CRITERIA:		NOTE: Based on material from the Skill Drill Instructor Guides [ADDITIONAL LINES FOR AHJ TO ADD OTHER MATERIAL]	
Critical?		Pass	Fail
	The student tosses a bag of rope while securely holding the rope		
	The student ties a figure eight on a bight onto the hoisting rope without excessive slack.		
	Slide the figure eight on a bight down the handle from end to head. Rope is looped under the head.		
	The student brings the rope back up the handle and secures it with two half hitches, one midpoint and one endpoint of the handle. Keeping the rope parallel to the handle		
	The tool can now be hoisted.		
EVALUATOR COMMENTS: [ANY COMMENTS PRO OR CON REGARDING WHAT THE STUDENT ACCOMPLISHED]			
EVALUATOR SIGNATURE:			
STUDENT SIGNATURE:			

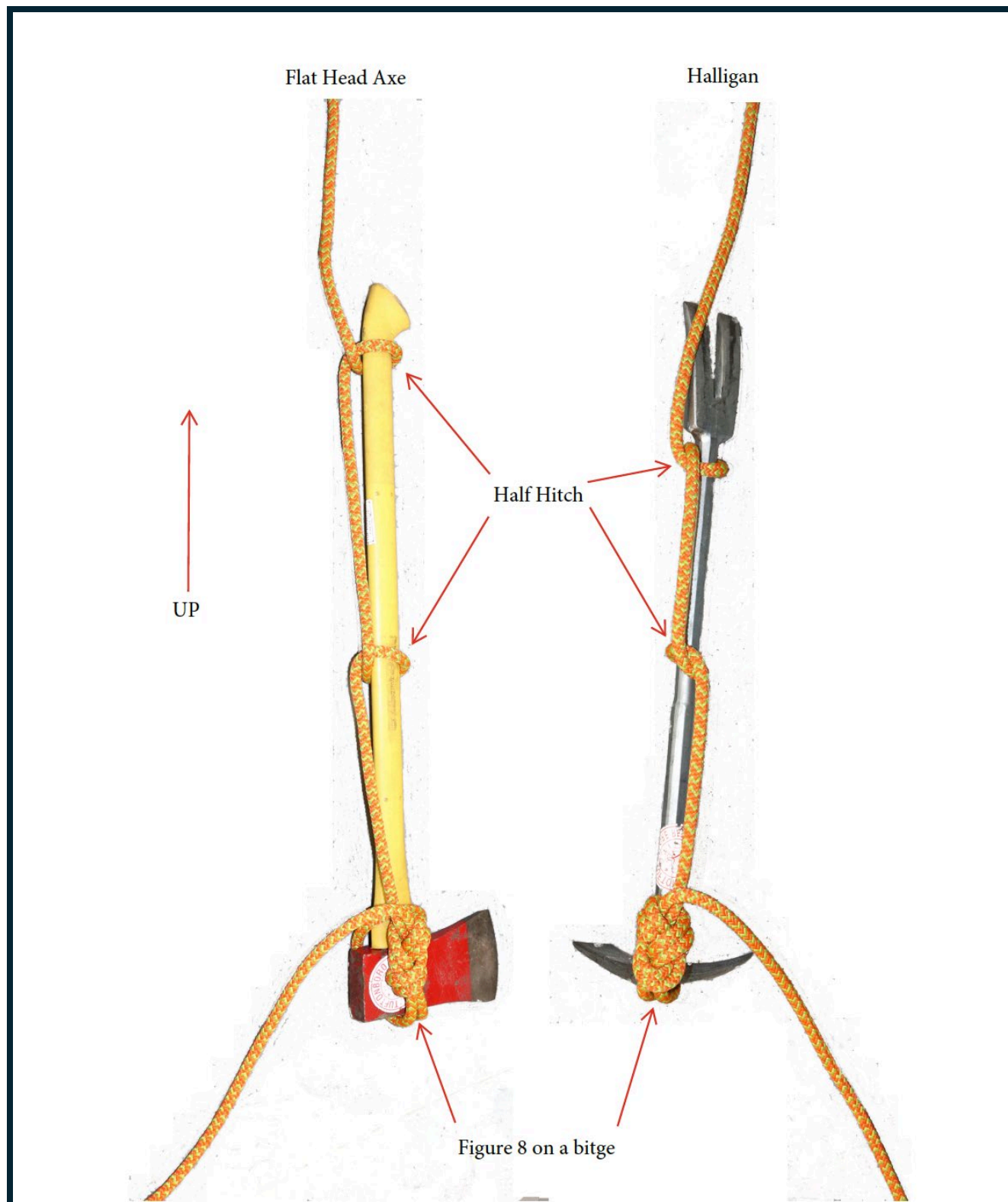


Fire Standards and Training & Emergency Medical Services

Unit 8 Ropes and Knots

Instructor Reference Card

Flat Head Axe and Halligan



FIRE ENGINEERING'S HANDBOOK FOR FIREFIGHTER I & II
Instructor Curriculum Skill Evaluation Sheet

SKILL SHEET 8-13		Hoisting a Pike Pole	
OBJECTIVE:		NFPA 1001, 4.1.2 & 4.3.20	FEH Chapter: 8
CANDIDATE NAME/NUMBER:			No.:
TEST DATE/TIME			
EQUIPMENT REQUIRED: [Add local requirements if needed]		<ul style="list-style-type: none"> • Utility Rope • Pike pole 	
EVALUATOR INSTRUCTIONS			
CANDIDATE INSTRUCTIONS: <i>NOTE: The evaluator will read the following exactly as it is written to the candidate</i>		The student will tie the appropriate knots to properly hoist a Pike Pole.	
CRITERIA:		NOTE: Based on material from the Skill Drill Instructor Guides [ADDITIONAL LINES FOR AHJ TO ADD OTHER MATERIAL]	
Critical?		Pass	Fail
	The student tosses a bag of rope while securely holding the rope		
	The student ties a figure eight on a bight onto the hoisting rope.		
	Take the bight in both hands and spread your hands apart. Twist the two sides away from you and pull inward.		
	Pass the two loops around the pole and pull tight		
	The student secures two half hitches, one near the mid-point of the handle and a second half hitch just below the head of the pike pole. Keeping the rope parallel to the handle		
	The tool can now be hoisted.		
EVALUATOR COMMENTS: [ANY COMMENTS PRO OR CON REGARDING WHAT THE STUDENT ACCOMPLISHED]			
EVALUATOR SIGNATURE:			
STUDENT SIGNATURE:			

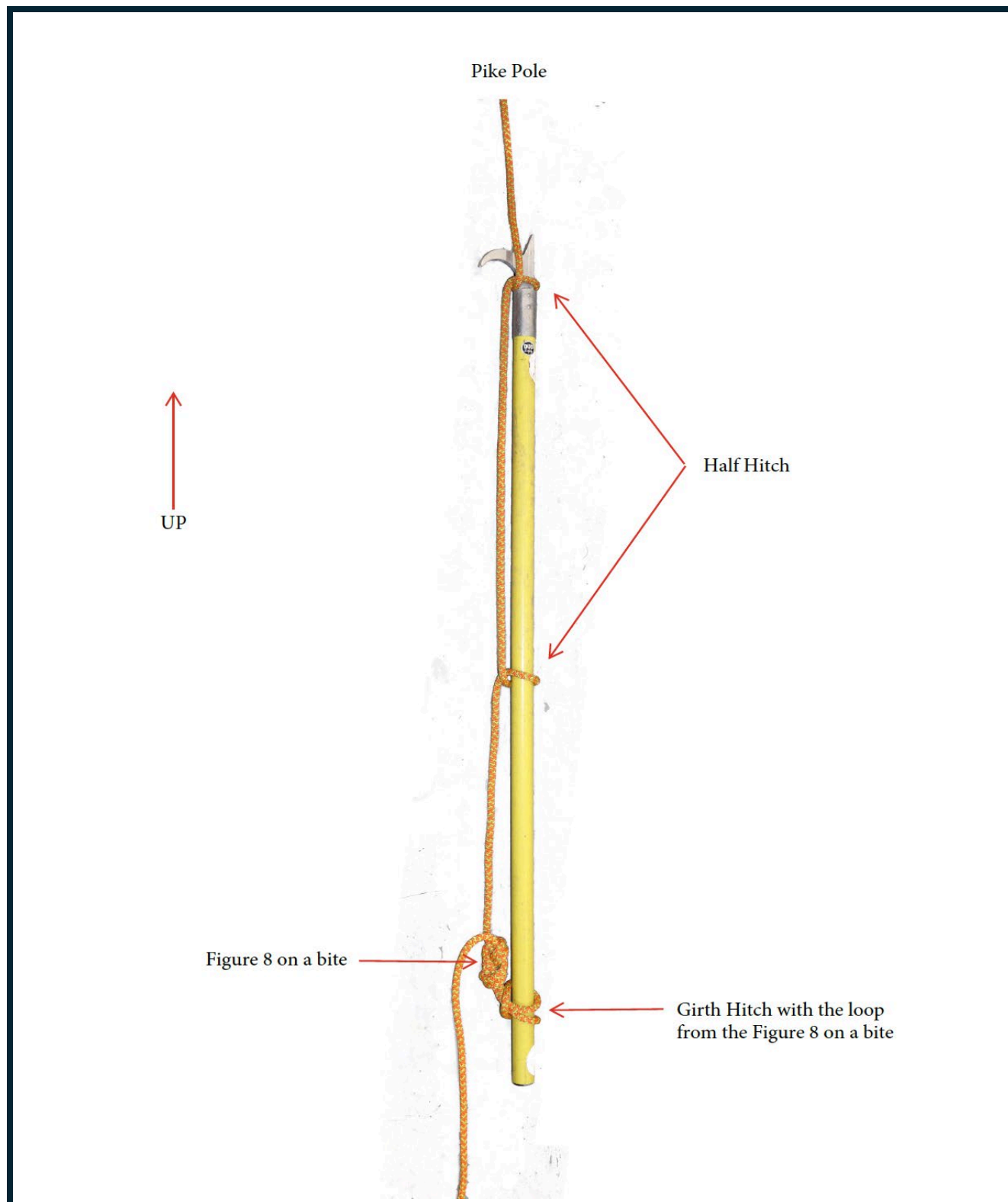


Fire Standards and Training & Emergency Medical Services

Unit 8 Ropes and Knots

Instructor Reference Card

Pike Pole



FIRE ENGINEERING'S HANDBOOK FOR FIREFIGHTER I & II
Instructor Curriculum Skill Evaluation Sheet

SKILL SHEET 8-15		Hoisting a Hoseline (Charged and Uncharged)	
OBJECTIVE:		NFPA 1001, 4.1.2 & 4.3.20	FEH Chapter: 8
CANDIDATE NAME/NUMBER:			No.:
TEST DATE/TIME			
EQUIPMENT REQUIRED: [Add local requirements if needed]		<ul style="list-style-type: none"> • Utility Rope • Hoseline with nozzle attached 	
EVALUATOR INSTRUCTIONS			
CANDIDATE INSTRUCTIONS: <i>NOTE: The evaluator will read the following exactly as it is written to the candidate</i>		The student will tie the appropriate knots to properly hoist hoselines.	
CRITERIA:		NOTE: Based on material from the Skill Drill Instructor Guides [ADDITIONAL LINES FOR AHJ TO ADD OTHER MATERIAL]	
Critical?		Pass	Fail
	The student tosses a bag of rope while securely holding the rope		
	The student ties a figure eight on a bight.		
	For a Charged hoseline:		
	Take the bight in both hands and spread your hands apart. Twist the two sides away from you and pull inward.		
	Pass the two loops around the hoseline and pull tight		
	Pass a bight through the bale and over the head of the nozzle, pull the rope		
	For an uncharged hose line		
	Fold the hoseline back three feet from the nozzle onto its self		
	Make a bight in a length of rope and place it in one hand. Grasping the bight in one hand, fold the bight back onto itself making two loops. Take the two loop and fold them back together. Slide the two loops through or around the object you wish to secure and cinch the ends of the rope.		
	Place a half hitch around the hose 6 inches from the nozzle and a second half hitch near the hose hold.		
	The nozzle can now be hoisted via the rope.		
EVALUATOR COMMENTS:			



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Unit 8 Ropes and Knots

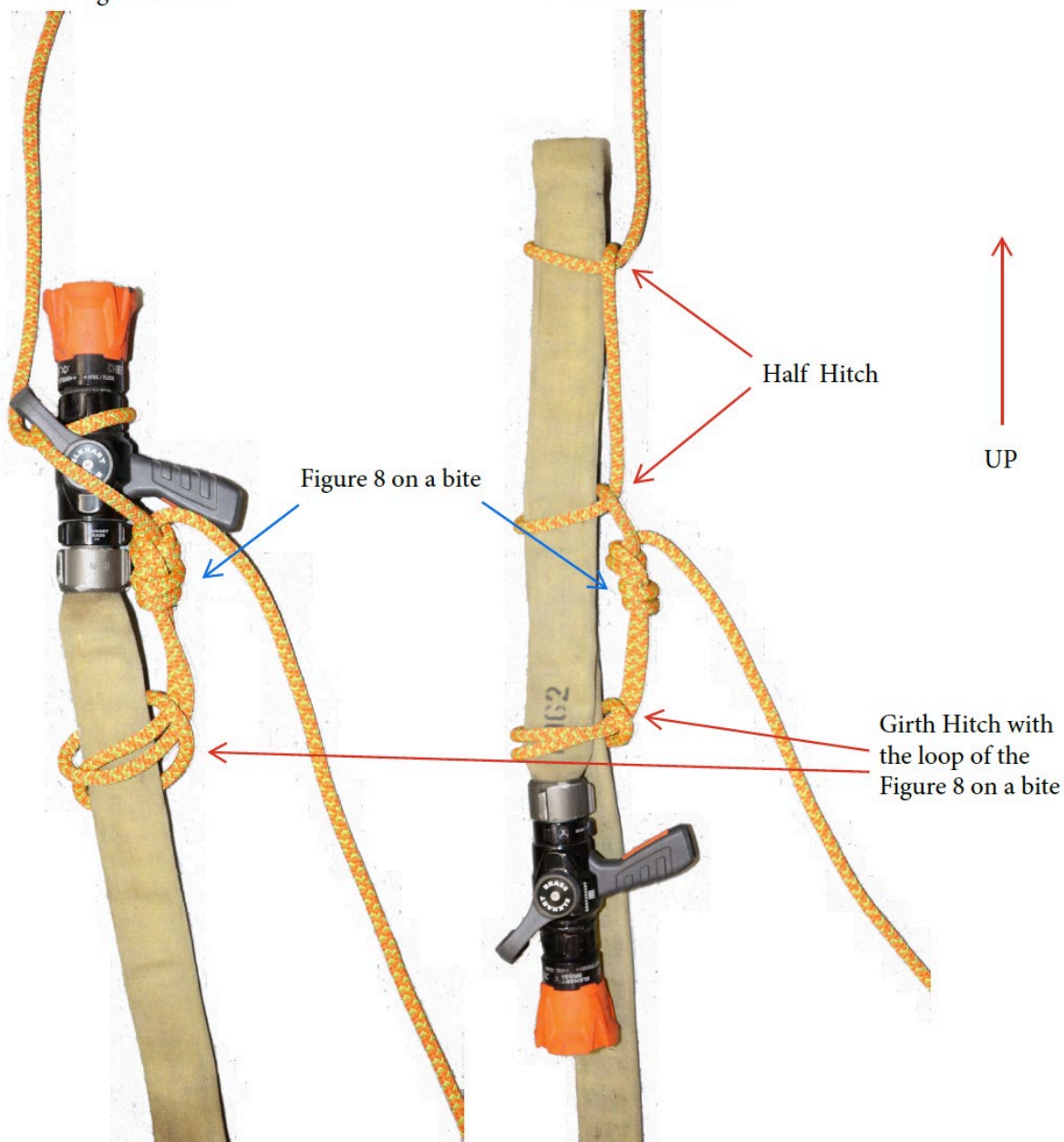
Instructor Reference Card

Charged and Uncharged Hose Lines



Charged Hoseline

Uncharged Hoseline



EVALUATOR SIGNATURE:	
STUDENT SIGNATURE:	

FIRE ENGINEERING'S HANDBOOK FOR FIREFIGHTER I & II
Instructor Curriculum Skill Evaluation Sheet

SKILL SHEET 8-18		Inspecting a Rope	
OBJECTIVE:		NFPA 1001, 4.5.1	FEH Chapter: 8
CANDIDATE NAME/NUMBER:			No.:
TEST DATE/TIME			
EQUIPMENT REQUIRED: [Add local requirements if needed]		<ul style="list-style-type: none"> A length of life safety or utility rope. 	
EVALUATOR INSTRUCTIONS			
CANDIDATE INSTRUCTIONS: <i>NOTE: The evaluator will read the following exactly as it is written to the candidate</i>		The student will explain and demonstrate how to properly inspect rope.	
CRITERIA:		NOTE: Based on material from the Skill Drill Instructor Guides [ADDITIONAL LINES FOR AHJ TO ADD OTHER MATERIAL]	
Critical?		Pass	Fail
	The student demonstrates feeling along the rope.		
	Upon prompting, the student verbalizes that they are feeling for abrasions, discolorations or flat spots.		
	When asked what the candidate should do in the event that an issue is found with the rope, the student verbalizes that the rope should be removed from service and the officer must be notified.		
EVALUATOR COMMENTS: [ANY COMMENTS PRO OR CON REGARDING WHAT THE STUDENT ACCOMPLISHED]			
EVALUATOR SIGNATURE:			
STUDENT SIGNATURE:			

FIRE ENGINEERING'S HANDBOOK FOR FIREFIGHTER I & II
Instructor Curriculum Skill Evaluation Sheet

SKILL SHEET 8-19		Cleaning a Rope	
OBJECTIVE:		NFPA 1001, 4.5.1	FEH Chapter: 8
CANDIDATE NAME/NUMBER:			No.:
TEST DATE/TIME			
EQUIPMENT REQUIRED: [Add local requirements if needed]		<ul style="list-style-type: none"> • A length of life safety or utility rope. • A location to hang the rope out of direct sunlight • A hose and water supply to rinse the rope • A bucket, mild detergent, and a soft bristle brush. 	
EVALUATOR INSTRUCTIONS			
CANDIDATE INSTRUCTIONS: <i>NOTE: The evaluator will read the following exactly as it is written to the candidate</i>		The student will explain and demonstrate how to properly clean rope	
CRITERIA:		NOTE: Based on material from the Skill Drill Instructor Guides [ADDITIONAL LINES FOR AHJ TO ADD OTHER MATERIAL]	
Critical?		Pass	Fail
	The student demonstrates washing the rope with a mild detergent and a soft bristle brush.		
	The student rinses the rope thoroughly with clean water.		
	The student hangs the rope to dry out of direct sunlight.		
EVALUATOR COMMENTS: [ANY COMMENTS PRO OR CON REGARDING WHAT THE STUDENT ACCOMPLISHED]			
EVALUATOR SIGNATURE:			
STUDENT SIGNATURE:			

FIRE ENGINEERING'S HANDBOOK FOR FIREFIGHTER I & II
Instructor Curriculum Skill Evaluation Sheet

SKILL SHEET 8-20		Daisy Chain	
OBJECTIVE:		NFPA 1001, 4.1.2 & 4.3.20	FEH Chapter: 8
CANDIDATE NAME/NUMBER:			No.:
TEST DATE/TIME			
EQUIPMENT REQUIRED: [Add local requirements if needed]		<ul style="list-style-type: none"> Utility Rope 	
EVALUATOR INSTRUCTIONS			
CANDIDATE INSTRUCTIONS: <i>NOTE: The evaluator will read the following exactly as it is written to the candidate</i>		The student will demonstrate how to properly create a Daisy Chain.	
CRITERIA:		NOTE: Based on material from the Skill Drill Instructor Guides [ADDITIONAL LINES FOR AHJ TO ADD OTHER MATERIAL]	
Critical?		Pass	Fail
	The student should tie at one end a figure 8 on a bight.		
	The student should pass the first loop through the bight		
	The student should then pass a second loop through the first loop		
	Continue following steps 2 – 3 until all of the rope is used up.		
	Take the last end of the rope and pass it through the last loop made		
	Pull tight		
EVALUATOR COMMENTS: [ANY COMMENTS PRO OR CON REGARDING WHAT THE STUDENT ACCOMPLISHED]			
EVALUATOR SIGNATURE:			
STUDENT SIGNATURE:			

FIRE ENGINEERING'S HANDBOOK FOR FIREFIGHTER I & II
Instructor Curriculum Skill Evaluation Sheet

SKILL SHEET 8-21		Creating a Drop Bag	
OBJECTIVE:		NFPA 1001, 4.1.2 & 4.3.20	FEH Chapter: 8
CANDIDATE NAME/NUMBER:			No.:
TEST DATE/TIME			
EQUIPMENT REQUIRED: [Add local requirements if needed]		<ul style="list-style-type: none"> • A length of life safety or utility rope. • A rope bag 	
EVALUATOR INSTRUCTIONS			
CANDIDATE INSTRUCTIONS: <i>NOTE: The evaluator will read the following exactly as it is written to the candidate</i>		The student will demonstrate the proper steps to create a Drop Bag.	
CRITERIA:		NOTE: Based on material from the Skill Drill Instructor Guides [ADDITIONAL LINES FOR AHJ TO ADD OTHER MATERIAL]	
Critical?		Pass	Fail
	The student ties a figure 8 near the end of the rope.		
	The student feeds the rope through the interior of the bag and through the grommet in the bottom of the bag.		
	The student ties a figure 8 on a bight with the tail of the rope that is sticking out of the bottom of the bag.		
	The student loads or coils the rope into the bag by starting around the outside edge and filling up the middle of the bag.		
	The student ties a figure 8 on a bight at the end of the rope and places it on the inside top of the bag and close the bag.		
EVALUATOR COMMENTS: [ANY COMMENTS PRO OR CON REGARDING WHAT THE STUDENT ACCOMPLISHED]			
EVALUATOR SIGNATURE:			
STUDENT SIGNATURE:			

FIRE ENGINEERING'S HANDBOOK FOR FIREFIGHTER I & II
Instructor Curriculum Skill Evaluation Sheet

SKILL SHEET 8-25		Girth Hitch Knot	
OBJECTIVE:		NFPA 1001, 4.1.2 & 4.3.20	FEH Chapter: 8
CANDIDATE NAME/NUMBER:			No.:
TEST DATE/TIME			
EQUIPMENT REQUIRED: [Add local requirements if needed]		<ul style="list-style-type: none"> A length of life safety or utility rope. 	
EVALUATOR INSTRUCTIONS			
CANDIDATE INSTRUCTIONS: <i>NOTE: The evaluator will read the following exactly as it is written to the candidate</i>		The student will properly tie a Girth Hitch Knot	
CRITERIA:		NOTE: Based on material from the Skill Drill Instructor Guides [ADDITIONAL LINES FOR AHJ TO ADD OTHER MATERIAL]	
Critical?		Pass	Fail
	The student makes a bight in the standing part of the rope.		
	Take the bight in both hands and spread your hands apart. Twist the two sides away from you and pull inward.		
	Pass the two loops around an object and pull tight		
EVALUATOR COMMENTS: [ANY COMMENTS PRO OR CON REGARDING WHAT THE STUDENT ACCOMPLISHED]			
EVALUATOR SIGNATURE:			
STUDENT SIGNATURE:			

FIRE ENGINEERING'S HANDBOOK FOR FIREFIGHTER I & II
Instructor Curriculum Skill Evaluation Sheet

SKILL SHEET 8-14		Hoisting an Exhaust Fan	
OBJECTIVE:	NFPA 1001, 4.1.2 & 4.3.20	FEH Chapter: 8	
CANDIDATE NAME/NUMBER:		No.:	
TEST DATE/TIME			
EQUIPMENT REQUIRED: [Add local requirements if needed]	<ul style="list-style-type: none"> • Utility Rope • Exhaust fan 		
EVALUATOR INSTRUCTIONS			
CANDIDATE INSTRUCTIONS: <i>NOTE: The evaluator will read the following exactly as it is written to the candidate</i>			
CRITERIA:	NOTE: Based on material from the Skill Drill Instructor Guides [ADDITIONAL LINES FOR AHJ TO ADD OTHER MATERIAL]		
Critical?		Pass	Fail
	The student throughs a rope bag and secures the running end of the rope		
	The then student ties a figure 8 follow through from the working end around the top two handles of the exhaust fan. It will look like a triangle when tension is placed on the line. All three sides of the triangle should be close to equal.		
	Using a second rope the student will tie a figure 8 follow through around one of the opposite handle for a tag line		
	Hoist tool		
EVALUATOR COMMENTS: [ANY COMMENTS PRO OR CON REGARDING WHAT THE STUDENT ACCOMPLISHED]			
EVALUATOR SIGNATURE:			
STUDENT SIGNATURE:			



Fire Standards and Training & Emergency Medical Services

Unit 8 Ropes and Knots

Instructor Reference Card

Smoke Ejector Fan

