



# Awareness/Operations

## Course Plan

### Course Details

- CTS Guide:** Structural Collapse Specialist 1 and 2 (2021)
- Description:** This course provides the skills and knowledge needed for the operations-level structural collapse specialist to rescue victims from a collapsed light frame and URM construction-type structure; including size up, incident action plans, search, cribbing systems, lifting and moving heavy loads, stabilization, breaching, and rescue.
- Designed For:** Personnel preparing to pursue technical rescue certification (pending); personnel responsible for meeting local, state, or federal minimum standards; or anyone who functions in a technical rescue environment.
- Prerequisites:** Rope Rescue Operations or LARRO and Rescue Systems 1 (SFT)  
IS-100, IS-200, IS-700, IS-800 (FEMA)\*  
Confined Space Rescue: Awareness (SFT)  
Structural Collapse Specialist (FEMA / computer-based training / 2017 or newer edition) – within two years prior to course registration
- Standard:** Attend and participate in all course sections  
Successful completion of all skills identified on the Training Record.
- Hours (Total):** 40 hours  
(12.75 lecture / 27.25 application)
- Maximum Class Size:** 48
- Instructor Level:** SFT Registered Structural Collapse Specialist 1
- Instructor/Student Ratio:** 1:48 (lecture)  
24 students or less 1:8 (application)  
Over 24 students 1:6 (application)
- Restrictions:** All instructors counted toward student ratios, including application components, must be SFT Registered Structural Collapse Specialist 1 Instructors.

**SFT Designation:** FSTEP

\* Courses taught by outside agencies often change names and numbers. Students should enroll in the most current version of any course, even if the course name or number has changed.

## Table of Contents

Course Details .....	1
Required Resources .....	4
Instructor Resources.....	4
Online Instructor Resources .....	4
Student Resources .....	4
Facilities, Equipment, and Personnel.....	4
Time Table.....	9
Time Table Key.....	10
Suggested Teaching Schedule.....	11
Unit 1: Awareness (Computer-Based Testing).....	12
Topic 1-1: Sizing Up a Structural Collapse Incident .....	12
Topic 1-2: Identifying Incident Hazards .....	13
Topic 1-3: Recognizing the Need for Technical Resources .....	15
Topic 1-4: Applying a Building Marking System.....	16
Topic 1-5: Performing Collapse Support Operations.....	17
Topic 1-6: Initiating a Search .....	18
Topic 1-7: Moving a Victim .....	19
Unit 2: Operations (Computer-Based Training).....	20
Topic 2-1: Maintaining Hazard-specific PPE .....	20
Topic 2-2: Maintaining Rescue Equipment.....	21
Topic 2-3: Conducting a Size-up of a Light Frame or URM Collapsed Structure .....	22
Topic 2-4: Developing a Collapse Rescue Incident Action Plan .....	23
Topic 2-5: Implementing a Collapse Rescue Incident Action Plan.....	25
Topic 2-6: Determining Potential Victim Locations .....	26
Topic 2-7: Searching a Collapsed Structure .....	27
Topic 2-8: Constructing Cribbing Systems .....	29
Topic 2-9: Lifting a Heavy Load as a Team Member.....	30
Topic 2-10: Moving a Heavy Load as a Team Member.....	32
Topic 2-11: Stabilizing a Collapsed Structure as a Member of a Team .....	34
Topic 2-12: Breaching Structural Components.....	36
Topic 2-13: Releasing a Victim from Entrapment.....	37
Topic 2-14: Removing a Victim from a Collapse Incident.....	39
Topic 2-15: Terminating an Incident.....	41
Unit 3: Introduction (Instructor-Led Training).....	42
Topic 3-1: Orientation and Administration.....	42
Unit 4: Awareness (Instructor-Led Training).....	43
Topic 4-1: Sizing Up a Structural Collapse Incident .....	43
Topic 4-2: Identifying Incident Hazards .....	44
Topic 4-3: Recognizing the Need for Technical Resources .....	45

Topic 4-4: Applying a Building Marking System.....	46
Topic 4-5: Performing Collapse Support Operations.....	47
Topic 4-6: Initiating a Search .....	48
Topic 4-7: Moving a Victim .....	49
Unit 5: Operations (Instructor-Led Training) .....	50
Topic 5-1: Maintaining Hazard-specific PPE .....	50
Topic 5-2: Maintaining Rescue Equipment.....	52
Topic 5-3: Conducting a Size-up of a Light Frame or URM Collapsed Structure .....	53
Topic 5-4: Developing a Collapse Rescue Incident Action Plan .....	54
Topic 5-5: Implementing a Collapse Rescue Incident Action Plan.....	55
Topic 5-6: Determining Potential Victim Locations .....	56
Topic 5-7: Searching a Collapsed Structure .....	57
Topic 5-8: Constructing Cribbing Systems .....	58
Topic 5-9: Lifting a Heavy Load as a Team Member .....	59
Topic 5-10: Moving a Heavy Load as a Team Member.....	60
Topic 5-11: Stabilizing a Collapsed Structure as a Member of a Team .....	62
Topic 5-12: Breaching Structural Components.....	64
Topic 5-13: Releasing a Victim from Entrapment.....	65
Topic 5-14: Removing a Victim from a Collapse Incident.....	66
Topic 5-15: Terminating an Incident.....	67
How to Read a Course Plan.....	68

## Required Resources

### Instructor Resources

To teach this course, instructors need:

- *Structural Collapse Specialist Instructor-Led Training (ILT)*
  - (FEMA, Participant Guide, April 2017)
- NFPA 1006: Standard for Technical Rescue Personnel (2021) (physical or digital access)
- FIRESCOPE ICS 420-1 Field Operations Guide (2017)
- USACE Field Operations Guide (current edition)
- USACE Shoring Operations Guide (current edition)
- Personal Protective Equipment (PPE)

### Online Instructor Resources

The following instructor resources are available online at

<https://www.caltraining.org/fstep>

- *Structural Collapse Specialist Instructor-Led Training (ILT)*
  - (FEMA, Participant Guide, April 2017)
- Sample Timetables
- Wedge Anchor Load Ratings
- Mobile Crane Hand Signals
- FEMA Search Sticker

### Student Resources

To participate in this course, students need:

- *Structural Collapse Specialist Instructor-Led Training (ILT)*
  - (FEMA, Participant Guide, April 2017)
- NFPA 1006: Standard for Technical Rescue Personnel (2021) (physical or digital access)
- FIRESCOPE ICS 420-1 Field Operations Guide (2017)
- USACE Field Operations Guide (current edition)
- USACE Shoring Operations Guide (current edition)
- Personal Protective Equipment (PPE)

### Facilities, Equipment, and Personnel

#### Facilities

The following facilities are required to deliver this course:

- Standard learning environment or facility, which may include:
  - Writing board or paper easel chart
  - Markers, erasers
  - Amplification devices
  - Projector and screen
  - Laptop or tablet with presentation or other viewing software

- Internet access with appropriate broadband capabilities
- Access to an outdoor facility that enables participants to meet the requisite knowledge and skills of NFPA 1006 and fulfill the assigned activities and skills.

**Equipment**

Student safety is of paramount importance when conducting the type of high-risk training associated with this Structural Collapse course. The equipment listed below is the minimum for the delivery of this course. The equipment complies with or exceeds the standards listed in NFPA 1983: Standard on Fire Service Life Safety Rope, Harness, and Hardware. The student is responsible for providing all PPE and ensuring that all PPE meets AHJ and site requirements.

The following equipment is required to deliver this course:

Amount	Heavy Object Equipment (1 Squad)
2+	Manikins or other items to represent victims
1	Webbing – 1" x 40'
2	Webbing – 1" x 8'
1	Airbag – Control kit storage container
2	Airbag – Regulators
2	Airbag – Control heads (two bag capable)
2	Airbag – Supply air lines
4	Airbag – Airlines (minimum 16')
1	Airbag – 3 ton
1	Airbag – 5 ton
2	Airbag – 8 to 15 ton
2	Airbag – 16 to 20 ton
2	Airbag – Any type or size (AHJ specific)
As needed	Air supply (SCBA cylinder)
6	Pry Bar – Pinch point (60" minimum)
10	Pry Bar – Crowbar (30" minimum) (2 for HO/8 for shoring)
12	Rollers – Steel pipe (minimum 1.5" by schedule 40)
2	Jacks – Hydraulic low profile (e.g., bottle jack)
2	Jacks – High lift
2	Tape measure (25' minimum)
2	Come-a-long (minimum capacity 1.25 ton)
2	Chain fall (3-ton capacity) (optional)
2	Grip hoist (optional)
120	Cribbing – 4" x 4" x 18 to 24"
40	Cribbing – 2" x 4" x 18 to 24"
60 sets	Cribbing wedges – 4" x 4" x 18"
20 sets	Cribbing wedges – 2" x 4" x 12"
Optional	Cribbing – 6" x 6" x 36 to 48"

12	Pickets – 1" x 36"
Optional	Improvised levers (optional, e.g., long 4x4s, >8' ladders)
Optional	Jack – floor
<b>Amount</b>	<b>Shoring Equipment</b>
4	Ellis – Shore clamps (4" x 4")
2	Ellis – Shore clamp wrench (4" x 4")
2	Ellis – Post screw jack (4" x 4")
24	Pickets – 1" x 36"
12	Pins – ½" x 18"
1	Drill – right angle (with accessories needed to support operations)
8	Lumber – 6" x 6" (Deadman)
<b>Double the shoring equipment below if running shoring modules.</b>	
12	Tool belts
12	Hammer – Framing (24 oz minimum)
12	Tape measure (25' minimum)
12	Square – Speed
12	Marking pencils
12	Nail pullers
12	Sheetrock knives
12	Torpedo levels
2	Chalk lines
4	Square – Framing
1	Saw – Chain (with accessories needed to support operations)
Optional	Saw – Miter, 12" (with accessories needed to support operations)
1	Saw – Circular, 7¼" (with accessories to needed support operations)
1	Saw – Circular, 10¼" (with accessories needed to support operations)
2	Nail gun – Framing (with accessories needed to support operations)
2	Nail gun, Palm nailer (with accessories needed to support operations)
As needed	Air supply (SCBA cylinder) or compressor
4	Hammer – Sledge 3 lb.
2	Hammer – Sledge 8 lb.
2	Magnets (for picking up nails) (Optional)
1	Cutting table (per AHJ)
<b>Amount</b>	<b>Breaching (1 Squad)</b>
2	Set of irons
2	Axe – Pick head
2	Hammer – Framing (24 oz minimum)
2	Hammer – Sledge 3 lb.
2	Hammer – Sledge 8 lb.
1	Manikins or other items to represent victims
1	Litter

Optional	Saw – Ring (with accessories needed to support operations)
1	Saw – Rotary (with accessories needed to support operations)
1	Saw – Reciprocating (with accessories needed to support operations)
As needed	Other hand tools (per AHJ)
<b>Amount</b>	<b>Marking Station (1 Squad)</b>
	See Consumables section
<b>Amount</b>	<b>Required Site Conditions and Props</b>
As needed	Breaches must be done with limited access, inside a <36" pipe or similar
4	Concrete slabs and blocks for lifting (3' x 3' x 3')
4	Concrete slabs and blocks for lifting (1' x 5' x 8')
	Improved surfaces for moving heavy objects (large enough to support the operation)
	Door/window shores shall be representative of current door/window building code standards (At least 1 window and 1 door will have a rack and frame)
	Insertion points for exterior shores shall be 8' minimum
	Insertion points for interior shores shall be determined by the Registered Instructor
<b>Amount</b>	<b>Consumables</b> (For final count, multiply by the number of modules taught.)
	<b>BREACHING</b>
2	Breach panel – 4' x 4' x ¾" or based on prop dimensions (interior wall)
2	Breach panel – 4' x 4' or based on prop dimensions (concrete 2" thick with welded wire)
2	Breach panel – 4' x 4' or based on prop dimensions (exterior wall)
	<b>MARKING STATION</b>
4	Spray paint – Orange (can)
16	Lumber – ½" x 4' x 4' (oriented strand board)
4	Box lumber crayons
25	FEMA search assessment placard
25	FEMA hazard assessment placard
	<b>SHORING</b>
24	Lumber – 2" x 4" x 8' (lumber lengths may be longer – based on AHJ props)
60	Lumber – 4" x 4" x 8' (lumber lengths may be longer – based on AHJ props)
18	Lumber – 4" x 4" x 12' (lumber lengths may be longer – based on AHJ props)
30	Lumber – 2" x 6" x 12' (lumber lengths may be longer – based on AHJ props)
12	Lumber – ¾" x 4' x 8' (plywood)
1	Nails – 8d duplex, 12 lbs.
1	Nails – 16d duplex, 12 lbs.
1	Nails – 8d, 12 lbs.
1	Nails – 16d, 12 lbs.
1	Nails – 8d nail gun, 12 lbs.

1	Nails – 16d nail gun, 12 lbs.
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**Personnel**

The following personnel are required to deliver this course:

- Any instructor counted toward student ratios must be an SFT Registered Structural Collapse Specialist 1 Instructor.



## Time Table

Segment	Lecture	Application	Unit Total
<b>Unit 1: Awareness (Computer-Based Training)</b>			
Completed by students outside of course time.	0.0	0.0	
<b>Unit 1 Totals</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>Unit 2: Operations (Computer-Based Training)</b>			
Completed by students outside of course time.	0.0	0.0	
<b>Unit 2 Totals</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>Unit 3: Introduction (Instructor-Led Training)</b>			
Topic 3-1: Orientation and Administration	1.0	1.0	
<b>Unit 3 Totals</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>
<b>Unit 4: Awareness (Instructor-Led Training)</b>			
Topic 4-1: Sizing Up a Structural Collapse Incident	0.50	0.0	
Topic 4-2: Identifying Incident Hazards	0.50	0.25	
Topic 4-3: Recognizing the Need for Technical Resources	0.50	0.0	
Topic 4-4: Applying a Building Marking System	0.0	0.50	
Topic 4-5: Performing Collapse Support Operations	0.0	1.0	
Topic 4-6: Initiating a Search	0.25	0.0	
Topic 4-7: Moving a Victim	0.25	0.0	
<b>Unit 4 Totals</b>	<b>2.0</b>	<b>1.75</b>	<b>3.75</b>
<b>Unit 5: Operations (Instructor-Led Training)</b>			
Topic 5-1: Maintaining Hazard-specific PPE	0.25	0.0	
Topic 5-2: Maintaining Rescue Equipment	1.0	3.0	
Topic 5-3: Conducting a Size-up of a Light Frame or URM Collapsed Structure	0.25	0.0	
Topic 5-4: Developing a Collapse Rescue Incident Action Plan	0.25	0.0	
Topic 5-5: Implementing a Collapse Rescue Incident Action Plan	0.25	0.0	
Topic 5-6: Determining Potential Victim Locations	0.0	0.50	
Topic 5-7: Searching a Collapsed Structure	0.0	0.0	
Topic 5-8: Constructing Cribbing Systems	0.50	0.50	
Topic 5-9: Lifting a Heavy Load as a Team Member	0.50	0.0	
Topic 5-10: Moving a Heavy Load as a Team Member	0.50	5.0	
Topic 5-11: Stabilizing a Collapsed Structure as a Member of a Team	4.0	12.0	
Topic 5-12: Breaching Structural Components	1.0	4.0	
Topic 5-13: Releasing a Victim from Entrapment	0.0	0.0	
Topic 5-14: Removing a Victim from a Collapse Incident	0.0	0.0	

Topic 5-15: Terminating an Incident	1.0	0.0	
<b>Unit 4 Totals</b>	<b>9.75</b>	<b>25.0</b>	<b>34.75</b>
<b>Formative Assessments</b>			
Determined by AHJ or educational institution	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>Summative Assessment</b>			
Determined by AHJ or educational institution	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>Course Totals</b>	<b>12.75</b>	<b>27.25</b>	<b>40.0</b>

### Time Table Key

1. The Time Table documents the amount of time required to deliver the content included in the course plan.
2. Time is documented using the quarter system: 15 min. = .25 / 30 min. = .50 / 45 min. = .75 / 60 min. = 1.0.
3. The Course Totals do not reflect time for lunch (1 hour) or breaks (10 minutes per every 50 minutes of instruction or assessment). It is the instructor's responsibility to add this time based on the course delivery schedule.
4. Application (activities, skills exercises, and formative testing) time will vary depending on the number of students enrolled. The Application time documented is based on the maximum class size identified in the Course Details section.
5. Summative Assessments are determined and scheduled by the authority having jurisdiction. These are not the written or psychomotor State Fire Training certification exams. These are in-class assessments to evaluate student progress and calculate course grades.

### Suggested Teaching Schedule

Day	Content	Topics
1	<ul style="list-style-type: none"><li>• Orientation</li><li>• Rescue Operations Awareness</li><li>• PPE and Tool Lab</li></ul>	3-1, 3-2, 4-1, 4-2, 4-3, 4-4, 4-5, 4-6, 4-7, 5-1, 5-2, 5-3, 5-4, 5-5, 5-15
2	<ul style="list-style-type: none"><li>• Breaking and Breaching</li></ul>	5-6, 5-7, 5-12, 5-13, 5-14
3	<ul style="list-style-type: none"><li>• Exterior Shores</li></ul>	5-11
4	<ul style="list-style-type: none"><li>• Interior Shores</li></ul>	5-11
5	<ul style="list-style-type: none"><li>• Lifting and Moving</li></ul>	5-8, 5-9, 5-10

## Unit 1: Awareness (Computer-Based Testing)

### Topic 1-1: Sizing Up a Structural Collapse Incident

#### Terminal Learning Objective

At the end of this topic a student, given background information and applicable reference materials, will be able to size up a structural collapse rescue incident so that the scope of the rescue is determined, the number of victims is identified, the last reported location of all the victims is established, witnesses and reporting parties are identified and interviewed, resource needs are assessed, primary search parameters are identified, and the information required to develop an initial incident action plan is obtained.

#### Enabling Learning Objectives

1. Identify types of reference materials and their uses
  - FEMA CBT: Module 3, ELO 7
2. Describe elements of an incident action plan and related information
  - FEMA CBT: Module 8, ELO 3
3. Describe relationship of the size-up to the incident management system
  - FEMA CBT: Module 8, ELO 2
4. Describe information gathering techniques and how that information is used in the size-up process
  - FEMA CBT: Module 3, ELO 7
5. Describe basic search criteria for structural collapse rescue incidents
  - FEMA CBT: Module 8, ELO 2
6. Read technical rescue reference materials
  - FEMA CBT: Module 3, ELO 7Kjh
7. Gather information
  - FEMA CBT: Module 8, ELO 2
8. Use interview techniques
  - FEMA CBT: Module 8, ELO 2
9. Relay information
  - FEMA CBT: Module 8, ELO 2
10. Use information-gathering sources
  - FEMA CBT: Module 8, ELO 2

#### Application

1. Covered within CBT modules

#### Instructor Notes

1. See corresponding ILT content in Topic 4-1.

**CTS Guide Reference:** CTS 1-6

## Topic 1-2: Identifying Incident Hazards

### Terminal Learning Objective

At the end of this topic a student, given a specific type of collapse incident, will be able to identify incident hazards so that construction type is determined, all associated hazards are identified, and rescue time constraints are taken into account.

### Enabling Learning Objectives

1. Describe types and nature of incident hazards
  - FEMA CBT: Module 3, ELO 7
2. Define isolation terminology
  - FEMA CBT: Module 1, ELO 2
3. Describe methods and equipment
  - FEMA CBT: Module 3, ELO 7
4. Describe implementation techniques
  - FEMA CBT: Module 8, ELO 2
5. Describe operational requirement concerns
  - FEMA CBT: Module 8, ELO 3
6. Describe common risks in collapse incidents
  - FEMA CBT: Module 1, ELO 2
7. Describe risk/benefit analysis methods and practices
  - FEMA CBT: Module 1, ELO 2
8. Identify construction types and collapse characteristics
  - FEMA CBT: Module 3, ELO 6
9. Identify 13 building collapse types
  - FEMA CBT: Module 3, ELO 1
10. Describe subsequent collapse potential and causes
  - FEMA CBT: Module 3, ELO 5 & 6
11. Identify associated types of technical references
  - FEMA CBT: Module 3, ELO 7
12. Identify incident hazards based on construction type
  - FEMA CBT: Module 3, ELO 3
13. Identify collapse zones
  - FEMA CBT: Module 3, ELO 6
14. Assess victim viability based on collapse type and access (risk/benefit)
  - FEMA CBT: Module 3, ELO 6
15. Utilize technical references
  - FEMA CBT: Module 3, ELO 7
16. Operate control and mitigation equipment
  - FEMA CBT: Module 4, ELO 1

### Application

1. Completed within CBT modules

### Instructor Notes

1. See corresponding ILT content in Topic 4-2.

**CTS Guide Reference:** CTS 1-1

## **Topic 1-3: Recognizing the Need for Technical Resources**

### **Terminal Learning Objective**

At the end of this topic a student, given AHJ guidelines, will be able to recognize the need for technical rescue resources at an operations- or technician-level incident so that the need for additional resources is identified, the response system is initiated, the scene is secured and rendered safe until additional resources arrive, and awareness-level personnel are incorporated into the operational plan.

### **Enabling Learning Objectives**

1. Identify operational protocols
  - FEMA CBT: Module 8, ELO 1
2. Identify specific planning forms
  - FEMA CBT: Module 8, ELO 3
3. Recognize hazards
  - FEMA CBT: Module 3, ELO 7
4. Describe incident support operations and resources
  - FEMA CBT: Module 5, ELO 4
5. Describe safety measures
  - FEMA CBT: Module 1, ELO 2
6. Read technical rescue reference materials
  - FEMA CBT: Module 3, ELO 7
7. Gather information
  - FEMA CBT: Module 8, ELO 2
8. Use interview techniques
  - FEMA CBT: Module 8, ELO 2
9. Relay information
  - FEMA CBT: Module 8, ELO 2
10. Use information-gathering sources
  - FEMA CBT: Module 8, ELO 2

### **Application**

1. Completed within CBT modules

### **Instructor Notes**

1. See corresponding ILT content in Topic 4-3.

**CTS Guide Reference:** CTS 1-7

## **Topic 1-4: Applying a Building Marking System**

### **Terminal Learning Objective**

At the end of this topic a student, given a structural collapse incident, will be able to apply the building marking system so that the search phase of the floor or structure is marked, victim locations and condition are applied to the area, hazards are noted on the structure, and the access and egress points are marked.

### **Enabling Learning Objectives**

1. Identify FEMA and United Nations International Search and Rescue Advisory Group (INSARAG) search marking systems
  - FEMA CBT: Module 3, ELO 8
2. Describe victim marking systems
  - FEMA CBT: Module 3, ELO 8
3. Describe structural marking systems
  - FEMA CBT: Module 3, ELO 8
4. Identify location criteria for application of each system
  - FEMA CBT: Module 3, ELO 8
5. Use marking materials
  - FEMA CBT: Module 3, ELO 8
6. Recognize hazards
  - FEMA CBT: Module 3, ELO 7

### **Application**

1. Completed within CBT modules

### **Instructor Notes**

1. See corresponding ILT content in Topic 4-4.

**CTS Guide Reference:** CTS 1-3



## **Topic 1-5: Performing Collapse Support Operations**

### **Terminal Learning Objective**

At the end of this topic a student, given an assignment and available resources, will be able to perform collapse support operations at a rescue incident so that scene lighting is provided for the tasks to be undertaken, environmental concerns are addressed, personnel rehabilitation is facilitated, and the support operations facilitate rescue operational objectives.

### **Enabling Learning Objectives**

1. Identify resource management protocols
  - FEMA CBT: Module 5, ELO 4
2. Describe principles for establishing lighting
  - FEMA CBT: Module 1, ELO 2
3. Describe environmental control methods
  - FEMA CBT: Module 1, ELO 2
4. Describe rescuer rehabilitation protocols
  - FEMA CBT: Module 1, ELO 2
5. Access resources
  - FEMA CBT: Module 1, ELO 2
6. Set up lights
  - FEMA CBT: Module 1, ELO 2
7. Initiate environmental controls
  - FEMA CBT: Module 1, ELO 2
8. Set up rehabilitation for rescuers
  - FEMA CBT: Module 1, ELO 2

### **Application**

1. Completed within CBT modules

### **Instructor Notes**

1. See corresponding ILT content in Topic 4-5.

**CTS Guide Reference:** CTS 1-5

## **Topic 1-6: Initiating a Search**

### **Terminal Learning Objective**

At the end of this topic a student, given PPE, an incident location, and victim investigative information, will be able to initiate a search so that search parameters are established and include surface and nonentry void search, the information found is updated and relayed to command, the personnel assignments match their expertise, all victims are located as quickly as possible, risks to searchers are minimized, and accountability is achieved.

### **Enabling Learning Objectives**

1. Describe basic sight and hailing search techniques
  - FEMA CBT: Module 8, ELO 2
2. Describe operational techniques necessary to operate in the search environment
  - FEMA CBT: Module 8, ELO 2
3. Use hailing techniques, PPE, and triangulation methods
  - FEMA CBT: Module 1, ELO 3
4. Provide for and perform self-escape/self-rescue
  - FEMA CBT: Module 1, ELO 2

### **Application**

1. Completed within CBT modules

### **Instructor Notes**

1. See corresponding ILT content in Topic 4-6.

**CTS Guide Reference:** CTS 1-2

## **Topic 1-7: Moving a Victim**

### **Terminal Learning Objective**

At the end of this topic a student, given victim transport equipment, litters, other specialized equipment, and victim removal systems specific to the rescue environment, will be able to move a victim so that the victim is moved without further injuries, risks to rescuers are minimized, the victim is secured to the transfer device, and the victim is removed from the hazard.

### **Enabling Learning Objectives**

1. Identify types of transport equipment and removal systems
  - FEMA CBT: Module 2, ELO 4
2. Describe selection factors with regard to specific rescue environments
  - FEMA CBT: Module 3, ELO 6
3. Describe methods to reduce and prevent further injuries
  - FEMA CBT: Module 2, ELO 1
4. Describe types of risks to rescuers
  - FEMA CBT: Module 1, ELO 2
5. Describe ways to secure the victim to transport devices
  - FEMA CBT: Module 2, ELO 4
6. Describe transport techniques
  - FEMA CBT: Module 2, ELO 4
7. Secure a victim to transport equipment
  - FEMA CBT: Module 2, ELO 4

### **Application**

1. Completed within CBT modules

### **Instructor Notes**

1. See corresponding ILT content in Topic 4-7.

**CTS Guide Reference:** CTS 1-4

## Unit 2: Operations (Computer-Based Training)

### Topic 2-1: Maintaining Hazard-specific PPE

#### Terminal Learning Objective

At the end of this topic a student, given clothing or equipment for the protection of the rescuers, including respiratory protection, cleaning and sanitation supplies, maintenance logs or records, inspection procedures, and such tools and resources as are indicated by the manufacturer's guidelines for assembly or disassembly of components during repair or maintenance, will be able to maintain hazard-specific PPE so that damage, defects, and wear are identified and reported or repaired; equipment functions as designed; and preventive maintenance has been performed and documented consistent with the manufacturer's recommendations.

#### Enabling Learning Objectives

1. Describe functions, construction, and operation of PPE
  - FEMA CBT: Module 1, ELO 3
2. Evaluate operational readiness of PPE
  - FEMA CBT: Module 1, ELO 3

#### Application

1. Completed within CBT modules

#### Instructor Notes

1. See corresponding ILT content in Topic 5-1.

**CTS Guide Reference:** CTS 2-13

## **Topic 2-2: Maintaining Rescue Equipment**

### **Terminal Learning Objective**

At the end of this topic a student, given maintenance logs and records, tools, and resources as indicated by the manufacturer's guidelines, inspection procedures, equipment replacement protocol, and organizational standard operating procedure, will be able to maintain rescue equipment so that the operational status of equipment is verified and documented, all components are checked for operation, deficiencies are repaired or reported as indicated by standard operating procedure, and items subject to replacement are correctly disposed of and changed out.

### **Enabling Learning Objectives**

1. Describe functions and operations of rescue equipment
  - (FEMA CBT: Module 4, ELO 1)

### **Application**

1. Completed within CBT modules

### **Instructor Notes**

1. See corresponding ILT content in Topic 5-2.

**CTS Guide Reference:** CTS 2-14

## **Topic 2-3: Conducting a Size-up of a Light Frame or URM Collapsed Structure**

### **Terminal Learning Objective**

At the end of this topic a student, given an incident and specific incident information, will be able to conduct a size-up of a light frame or unreinforced masonry (URM) collapsed structure so that existing and potential conditions within the structure and the immediate periphery are evaluated, needed resources are defined, hazards are identified, construction and occupancy types are determined, collapse type is identified if possible, the need for rescue is assessed, a scene security perimeter is established, and the size-up is conducted within the scope of the incident management system.

### **Enabling Learning Objectives**

1. Identify light frame and URM construction types
  - FEMA CBT: Module 3, ELO1
2. Identify characteristics and probable occupant locations
  - FEMA CBT: Module 3, ELO 6
3. Describe methods to assess rescue needs
  - FEMA CBT: Module 8, ELO 2
4. Describe expected behavior of light frame and URM construction in a structural collapse incident
  - FEMA CBT: Module 3, ELO 3
5. Describe causes and associated effects of structural collapses
  - FEMA CBT: Module 3, ELO 5
6. Identify general hazards associated with structural collapse and size-up
  - FEMA CBT: Module 1, ELO 2
  - FEMA CBT: Module 3, ELO 7
7. Describe procedures for implementing site control and scene management
  - FEMA CBT: Module 1, ELO 2
8. Categorize light frame and URM construction types
  - FEMA CBT: Module 3, ELO 1
9. Evaluate structural stability and hazards
  - FEMA CBT: Module 3, ELO 3
  - FEMA CBT: Module 5, ELO 1
10. Implement resource and security (scene management) protocols
  - FEMA CBT: Module 1, ELO 2

### **Application**

1. Completed within CBT modules

### **Instructor Notes**

1. See corresponding ILT content in Topic 5-3.

**CTS Guide Reference:** CTS 2-1

## Topic 2-4: Developing a Collapse Rescue Incident Action Plan

### Terminal Learning Objective

At the end of this topic a student, given size-up information and a light frame and URM construction collapsed structure, will be able to develop a collapse rescue incident action plan so that initial size-up information is utilized, an incident management system is incorporated, existing and potential conditions within the structure and the immediate periphery are included, specialized resource needs are identified, work perimeters are determined, collapse type/category and associated hazards are identified, construction and occupancy types are determined, incident objectives are established, and scene security measures are addressed.

### Enabling Learning Objectives

1. Describe incident-specific size-up information
  - FEMA CBT: Module 8, ELO 3
2. Describe incident management system components
  - IS-100, IS-200, IS-700, IS-800
3. Describe dynamics of incident conditions and peripheral areas
  - FEMA CBT: Module 8, ELO 1 and 2
4. Describe construction and occupancy types
  - FEMA CBT: Module 3, ELO 1
  - FEMA CBT: Module 8, ELO 2
5. Describe scene security requirements
  - FEMA CBT: Module 1, ELO 2
6. Identify personnel needs and limitations
  - FEMA CBT: Module 1, ELO 2
7. Identify rescue scene operational priorities
  - FEMA CBT: Module 8, ELO 2
8. Utilize size-up information
  - FEMA CBT: Module 8, ELO 3
9. Implement an incident management system
  - FEMA CBT: Module 8, ELO 3
  - IS-100/IS-200/IS-700/IS-800
10. Monitor changing conditions specific to the incident
  - FEMA CBT: Module 1, ELO 2
11. Identify potential specialized resources
  - FEMA CBT: Module 3, ELO 7
12. Determine construction and occupancy types
  - FEMA CBT: Module 3, ELO 1
  - FEMA CBT: Module 8, ELO 2
13. Identify specific incident security requirements
  - FEMA CBT: Module 1, ELO 2
14. Create written documentation
  - FEMA CBT: Module 3, ELO 1

- FEMA CBT: Module 8, ELO 2

**Application**

1. Completed within CBT modules

**Instructor Notes**

1. See corresponding ILT content in Topic 5-4.

**CTS Guide Reference:** CTS 2-3



## **Topic 2-5: Implementing a Collapse Rescue Incident Action Plan**

### **Terminal Learning Objective**

At the end of this topic a student, given an action plan and a light frame and URM construction collapsed structure, will be able to implement a collapse rescue incident action plan so that pertinent information is used, an incident management system is established and implemented, monitoring of dynamic conditions internally and externally is established, specialized resources are requested, hazards are mitigated, victim rescue and extraction techniques are consistent with collapse and construction type, and perimeter security measures are established.

### **Enabling Learning Objectives**

1. Describe components of an action plan specific to collapse incidents
  - FEMA CBT: Module 8, ELO 3
2. Describe incident management systems
  - IS-100, IS-200, IS-700, IS-800
3. Recognize hazards
  - FEMA CBT: Module 3, ELO 7
4. Describe rescue and extrication techniques consistent with each collapse and construction type
  - FEMA CBT: Module 3, ELO 6
5. Implement the components of an action plan in a collapse incident
  - FEMA CBT: Module 8, ELO 3
6. Implement an incident management system
  - FEMA CBT: Module 8, ELO 3
7. Initiate hazard mitigation objectives
  - FEMA CBT: Module 3, ELO 7
8. Request specialized resources
  - FEMA CBT: Module 3, ELO 7
9. Initiate rescue objectives
  - FEMA CBT: Module 8, ELO 2

### **Application**

1. Completed within CBT modules

### **Instructor Notes**

1. See corresponding ILT content in Topic 5-5.

**CTS Guide Reference:** CTS 2-4

## **Topic 2-6: Determining Potential Victim Locations**

### **Terminal Learning Objective**

At the end of this topic a student, given size-up information, a structural collapse tool cache, the type of construction and occupancy, time of day, and collapse pattern, will be able to determine potential victim locations in light frame and URM construction collapse incidents, given so that search areas are established and victims can be located.

### **Enabling Learning Objectives**

1. Describe capabilities and limitations of search instruments and resources
  - FEMA CBT: Module 8, ELO 2
2. Identify types of building construction
  - FEMA CBT: Module 3, ELO 1
3. Describe occupancy classifications
  - FEMA CBT: Module 8, ELO 2
4. Identify collapse patterns
  - FEMA CBT: Module 3, ELO 6
5. Describe victim behavior
  - FEMA CBT: Module 2, ELO 1
6. Recognize potential areas of survivability
  - FEMA CBT: Module 3, ELO 6
7. Use size-up information
  - FEMA CBT: Module 3, ELO 7
8. Use occupancy classification information
  - FEMA CBT: Module 8, ELO 2
9. Use search devices
  - FEMA CBT: Module 8, ELO 2
10. Assess and categorize type of collapse
  - FEMA CBT: Module 3, ELO 3
  - FEMA CBT: Module 3, ELO 6

### **Application**

1. Completed within CBT modules

### **Instructor Notes**

1. See corresponding ILT content in Topic 5-6.

**CTS Guide Reference:** CTS 2-2

## Topic 2-7: Searching a Collapsed Structure

### Terminal Learning Objective

At the end of this topic a student, given PPE, the structural collapse tool cache, an assignment, operational protocols, and size-up information, will be able to search a light frame and URM construction collapsed structure so that all victim locations and potential hazards are identified, marked, and reported; protocols are followed; the mode of operation can be determined; and rescuer safety is maintained.

### Enabling Learning Objectives

1. Describe concepts and operation of the incident management system as applied to the search function
  - FEMA CBT: Module 8, ELO 2
2. Describe how to apply specialty tools and locating devices
  - FEMA CBT: Module 8, ELO 2
3. Describe how to apply recognized marking systems
  - FEMA CBT: Module 3, ELO 8
4. Describe voice sounding techniques
  - FEMA CBT: Module 8, ELO 2
5. Identify potential victim locations as related to the type of structure and occupancy
  - FEMA CBT: Module 3, ELO 6
6. Identify building construction type
  - FEMA CBT: Module 3, ELO 1
7. Describe collapse types and their influence on the search function
  - FEMA CBT: Module 3, ELO 6
8. Describe operational search protocols
  - FEMA CBT: Module 8, ELO 2
9. Recognize various hazards
  - FEMA CBT: Module 1, ELO 2
  - FEMA CBT: Module 3, ELO 7
10. Implement an incident management system
  - IS-100, IS-200, IS-700, IS-800
11. Apply search techniques
  - FEMA CBT: Module 8, ELO 2
12. Use marking systems
  - FEMA CBT: Module 3, ELO 8
13. Identify and mitigate hazards
  - FEMA CBT: Module 1, ELO 2
  - FEMA CBT: Module 3, ELO 7
14. Select and use victim locating devices
  - FEMA CBT: Module 8, ELO 2

### Application

1. Completed within CBT modules

**Instructor Notes**

1. See corresponding ILT content in Topic 5-7.

**CTS Guide Reference:** CTS 2-5

## Topic 2-8: Constructing Cribbing Systems

### Terminal Learning Objective

At the end of this topic a student, given an assignment, PPE, a structural collapse tool cache, various lengths and dimensions of lumber, wedges, and shims, will be able to construct cribbing systems so that the cribbing system will safely support the load, the system is stable, and the assignment is completed.

### Enabling Learning Objectives

1. Describe different types of cribbing systems and their construction methods
  - FEMA CBT: Module 7, ELO 2
2. Describe limitations of construction lumber
  - FEMA CBT: Module 7, ELO 3
3. Describe load calculations
  - FEMA CBT: Module 5, ELO 2
  - FEMA CBT: Module 7, ELO 3
4. Describe principles of and applications for cribbing
  - FEMA CBT: Module 7, ELO 2 and 3
5. Describe safety protocols
  - FEMA CBT: Module 1, ELO 1
  - FEMA CBT: Module 7, ELO 3
6. Select and construct cribbing systems
  - FEMA CBT: Module 7, ELO 2
7. Evaluate the structural integrity of the system
  - FEMA CBT: Module 7, ELO 2 and 3
8. Determine stability
  - FEMA CBT: Module 7, ELO 3
9. Calculate loads
  - FEMA CBT: Module 7, ELO 1

### Application

1. Completed within CBT modules

### Instructor Notes

1. See corresponding ILT content in Topic 5-8.

**CTS Guide Reference:** CTS 2-12

## Topic 2-9: Lifting a Heavy Load as a Team Member

### Terminal Learning Objective

At the end of this topic a student, given a structural collapse tool cache and a load to be lifted, will be able to lift a heavy load as a team member so that the load is lifted; control and stabilization are maintained before, during, and after the lift; and access can be gained.

### Enabling Learning Objectives

1. Describe how to apply levers
  - FEMA CBT: Module 7, ELO 2 and 3
2. Describe classes of levers
  - FEMA CBT: Module 7, ELO 2 and 3
3. Describe principles of leverage, gravity, and load balance
  - FEMA CBT: Module 7, ELO 1
4. Describe resistance force
  - FEMA CBT: Module 7, ELO 3
5. Describe mechanics of load stabilization
  - FEMA CBT: Module 7, ELO 2
6. Describe mechanics of load lifting
  - FEMA CBT: Module 1 and 2
  - FEMA CBT: Module 7, ELO 2
7. Describe how to apply pneumatic, hydraulic, mechanical, and manual lifting tools
  - FEMA CBT: Module 4, ELO 1
  - FEMA CBT: Module 7, ELO 3
8. Describe how to calculate the weight of the load
  - FEMA CBT: Module 7, ELO 1, 2, 3
9. Describe safety protocols
  - FEMA CBT: Module 1, ELO 2
10. Describe stabilization systems
  - FEMA CBT: Module 7, ELO 2
11. Evaluate and estimate the weight of the load
  - FEMA CBT: Module 5, ELO 2
  - FEMA CBT: Module 7, ELO 1, 2, 3
12. Operate lifting tools
  - FEMA CBT: Module 4, ELO 1
  - FEMA CBT: Module 7, ELO 3
13. Apply a lever
  - FEMA CBT: Module 7, ELO 2 and 3
14. Application load stabilization systems
  - FEMA CBT: Module 7, ELO 2 and 3

### Application

1. Completed within CBT modules

### Instructor Notes

1. See corresponding ILT content in Topic 5-9.

**CTS Guide Reference:** CTS 2-9

## Topic 2-10: Moving a Heavy Load as a Team Member

### Terminal Learning Objective

At the end of this topic a student, given a structural collapse tool cache, will be able to move a heavy load as a team member, given so that the load is moved the required distance to gain access and so that control is constantly maintained.

### Enabling Learning Objectives

1. Describe how to apply rigging systems
  - FEMA CBT: Module 7, ELO 2 and 3
2. Describe how to apply levers
  - FEMA CBT: Module 7, ELO 2 and 3
3. Describe classes of levers
  - FEMA CBT: Module 7, ELO 3
4. Describe how to apply rollers
  - FEMA CBT: Module 7, ELO 3
5. Describe inclined planes
  - FEMA CBT: Module 7, ELO 3
6. Describe gravity, center of gravity, and load balance
  - FEMA CBT: Module 7, ELO 1
7. Describe friction
  - FEMA CBT: Module 7, ELO 3
8. Describe mechanics of load stabilization and load lifting
  - FEMA CBT: Module 7, ELO 2
9. Describe capabilities and limitations of lifting tools
  - FEMA CBT: Module 4, ELO 1
10. Describe how to calculate the weight of the load
  - FEMA CBT: Module 5, ELO 2
11. Describe safety protocols
  - FEMA CBT: Module 1, ELO 2
12. Evaluate and estimate the weight of the load
  - FEMA CBT: Module 5, ELO 2
13. Operate required tools
  - FEMA CBT: Module 4, ELO 1
14. Construct and use levers, rollers, and inclined planes
  - FEMA CBT: Module 7, ELO 3
15. Utilize rigging systems
  - FEMA CBT: Module 7, ELO 2 and 3
16. Stabilize the load
  - FEMA CBT: Module 7, ELO 2

### Application

1. Completed within CBT modules

### Instructor Notes

1. See corresponding ILT content in Topic 5-10.



**CTS Guide Reference:** CTS 2-10

## **Topic 2-11: Stabilizing a Collapsed Structure as a Member of a Team**

### **Terminal Learning Objective**

At the end of this topic a student, given size-up information, a specific pattern of collapse, a basic structural collapse tool cache, and an assignment, will be able to stabilize a collapsed light frame and URM construction structure as a member of a team so that strategies to effectively minimize the movement of structural components are identified and implemented; hazard warning systems are established and understood by participating personnel; hazard-specific PPE is identified, provided, and utilized; physical hazards are identified; confinement, containment, and avoidance measures are discussed; and a rapid intervention team is established and staged.

### **Enabling Learning Objectives**

1. Identify appropriate PPE
  - FEMA CBT: Module 1, ELO 3
2. Describe confinement, containment, and avoidance measures
  - FEMA CBT: Module 3, ELO 7
3. Describe structural load calculations for shoring system requirements
  - FEMA CBT: Module 5, ELO 2
4. Describe shoring systems for stabilization
  - FEMA CBT: Module 5, ELO 3
5. Identify specific hazards associated with light frame and URM construction structural collapse
  - FEMA CBT: Module 3, ELO 3
6. Describe strategic planning for collapse incidents
  - FEMA CBT: Module 8, ELO 2
7. Identify atmospheric monitoring equipment needs
  - FEMA CBT: Module 3, ELO 8
8. Identify characteristics, expected behavior, type, causes, and associated effects of light frame and URM construction structural collapses
  - FEMA CBT: Module 3, ELO 2
9. Recognize potential for, and signs of, impending secondary collapse
  - FEMA CBT: Module 5, ELO 1
10. Select and construct shoring systems for collapses in light frame and URM construction structures
  - FEMA CBT: Module 5, ELO 3
11. Use PPE
  - FEMA CBT: Module 1, ELO 3
12. Perform structural load calculations
  - FEMA CBT: Module 5, ELO 2
13. Determine resource needs
  - FEMA CBT: Module 5, ELO 4
14. Select and operate basic and specialized tools and equipment
  - FEMA CBT: Module 4, ELO 1
15. Implement communications and safety protocols

- FEMA CBT: Module 8, ELO 2
16. Mitigate specific hazards associated with shoring tasks
- FEMA CBT: Module 1, ELO 2

**Application**

1. Completed within CBT modules

**Instructor Notes**

1. See corresponding ILT content in Topic 5-11.

**CTS Guide Reference:** CTS 2-6

## Topic 2-12: Breaching Structural Components

### Terminal Learning Objective

At the end of this topic a student, given an assignment, PPE, various types of construction materials, and a structural collapse tool cache, will be able to breach light frame and URM construction structural components so that the opening supports the rescue objectives, the necessary tools are selected, structural stability is maintained, and the methods utilized are safe and efficient.

### Enabling Learning Objectives

1. Describe effective breaching techniques
  - FEMA CBT: Module 6, ELO 1, 2, 3
2. Describe types of building construction and characteristics of materials used in each
  - FEMA CBT: Module 3, ELO 1 and 3
3. Describe the selection, capabilities, and limitations of tools
  - FEMA CBT: Module 4, ELO 1
  - FEMA CBT: Module 6, ELO 2
4. Describe safety protocols for breaching operations
  - FEMA CBT: Module 1, ELO 2
  - FEMA CBT: Module 6, ELO 2
5. Describe how to calculate weight
  - FEMA CBT: Module 5, ELO 2
6. Describe how to anticipate material movement during breaching and stabilization techniques
  - FEMA CBT: Module 3, ELO 2
  - FEMA CBT: Module 6, ELO 3
7. Select and use breaching tools
  - FEMA CBT: Module 6, ELO 2
8. Implement breaching techniques based on light frame and URM construction types
  - FEMA CBT: Module 4, ELO 1
  - FEMA CBT: Module 6, ELO 2
9. Use PPE
  - FEMA CBT: Module 1, ELO 3
10. Apply stabilization where required
  - FEMA CBT: Module 5, ELO 3

### Application

1. Completed within CBT modules

### Instructor Notes

1. See corresponding ILT content in Topic 5-12.

**CTS Guide Reference:** CTS 2-11

## **Topic 2-13: Releasing a Victim from Entrapment**

### **Terminal Learning Objective**

At the end of this topic a student, given PPE and resources for breaching, breaking, lifting, prying, shoring, and/or otherwise moving or penetrating the offending structural component, will be able to release a victim from entrapment by components of a light frame and URM construction collapsed structure so that hazards to rescue personnel and victims are minimized, considerations are given to compartment syndrome due to crush injuries, techniques enhance patient survivability, tasks are accomplished within projected time frames, and techniques do not compromise the integrity of the existing structure or structural support systems.

### **Enabling Learning Objectives**

1. Identify appropriate PPE
  - FEMA CBT: Module 1, ELO 3
2. Identify general hazards associated with each type of structural collapse
  - FEMA CBT: Module 3, ELO 7
3. Describe methods of evaluating structural integrity
  - FEMA CBT: Module 3, ELO 7
4. Describe compartment syndrome protocols
  - FEMA CBT: Module 2, ELO 2
5. Identify construction types and collapse characteristics of light frame and URM construction structures
  - FEMA CBT: Module 3, ELO 1
6. Describe causes and associated effects of structural collapses
  - FEMA CBT: Module 3, ELO 5
7. Identify potential signs of impending secondary collapse
  - FEMA CBT: Module 5, ELO 1
8. Describe how to select and apply rescue tools and resources
  - FEMA CBT: Module 4, ELO 1
9. Describe risk/benefit assessment techniques for extrication methods and time constraints
  - FEMA CBT: Module 2, ELO 3
10. Select, use, and care for PPE
  - FEMA CBT: Module 1, ELO 3
11. Operate rescue tools and stabilization systems
  - FEMA CBT: Module 4, ELO 1
  - FEMA CBT: Module 5, ELO 3
12. Recognize compartment syndrome indicators
  - FEMA CBT: Module 2, ELO 2
13. Complete risk/benefit assessments for selected methods of rescue and time constraints
  - FEMA CBT: Module 8, ELO 2

### **Application**

1. Completed within CBT modules

**Instructor Notes**

1. See corresponding ITL content in Topic 5-13.

**CTS Guide Reference:** CTS 2-7

## **Topic 2-14: Removing a Victim from a Collapse Incident**

### **Terminal Learning Objective**

At the end of this topic a student, given a disentangled victim, a basic first aid kit, and victim packaging resources, will be able to remove a victim from a light frame and URM construction collapse incident so that basic life functions are supported as required, victim is evaluated for signs of compartment syndrome due to crush injuries, advanced life support is called if needed, methods and packaging devices selected are compatible with intended routes of transfer, universal precautions are employed to protect personnel from bloodborne pathogens, and extraction times meet time constraints for medical management.

### **Enabling Learning Objectives**

1. Identify appropriate PPE
  - FEMA CBT: Module 1, ELO 3
2. Identify general hazards associated with structural collapse
  - FEMA CBT: Module 3, ELO 3
3. Identify light frame and URM construction types
  - FEMA CBT: Module 3, ELO 1
4. Describe characteristics and expected behavior of each type in a structural collapse incident
  - FEMA CBT: Module 3, ELO 6
5. Describe causes and associated effects of structural collapses
  - FEMA CBT: Module 3, ELO 5
6. Recognize potential for and signs of impending secondary collapse
  - FEMA CBT: Module 5, ELO 1
7. Describe characteristic mechanisms of compartment syndrome due to crush injuries and basic life support
  - FEMA CBT: Module 2, ELO 2
8. Describe patient packaging principles
  - FEMA CBT: Module 2, ELO 4
9. Select, use, and care for PPE
  - FEMA CBT: Module 1, ELO 3
10. Perform basic prehospital care and treatment of soft-tissue injuries
  - FEMA CBT: Module 2, ELO 1
11. Stabilize fractures
  - FEMA CBT: Module 2, ELO 4
12. Perform airway maintenance techniques and cardiopulmonary resuscitation
  - FEMA CBT: Module 2, ELO 1
13. Identify signs and symptoms of compartment syndrome
  - FEMA CBT: Module 2, ELO 2
14. Select and use patient packaging equipment
  - FEMA CBT: Module 2, ELO 4

### **Application**

1. Completed within CBT modules

**Instructor Notes**

1. See corresponding ILT content in Topic 5-14.

**CTS Guide Reference:** CTS 2-8



## **Topic 2-15: Terminating an Incident**

### **Terminal Learning Objective**

At the end of this topic a student, given PPE specific to the incident, isolation barriers, and tool cache, will be able to terminate an incident, so that rescuers and bystanders are protected and accounted for during termination operations; the party responsible is notified of any modification or damage created during the operational period; documentation of loss or material use is accounted for, scene documentation is performed, scene control is transferred to a responsible party; potential or existing hazards are communicated to that responsible party; debriefing and post-incident analysis and critique are considered, and command is terminated.

### **Enabling Learning Objectives**

1. Identify PPE characteristics
  - FEMA CBT: Module 1, ELO 3
2. Identify hazards and risks
  - FEMA CBT: Module 1, ELO 2
3. Select and use hazard-specific PPE
  - FEMA CBT: Module 1, ELO 3
4. Use barrier protection techniques
  - FEMA CBT: Module 1, ELO 3

### **Application**

1. Completed within CBT modules

### **Instructor Notes**

1. See corresponding ILT content in Topic 2-15.

**CTS Guide Reference:** CTS 2-15

## Unit 3: Introduction (Instructor-Led Training)

### Topic 3-1: Orientation and Administration

#### Terminal Learning Objective

At the end of this topic, a student will be able to identify facility and classroom requirements and identify course objectives, events, requirements, assignments, activities, skills exercises, resources, evaluation methods, and participation requirements in the course syllabus.

#### Enabling Learning Objectives

1. Identify facility requirements
  - Restroom locations
  - Food locations
  - Smoking locations
  - Emergency procedures
2. Identify classroom requirements
  - Start and end times
  - Breaks
  - Electronic device policies
  - Special needs and accommodations
  - Other requirements as applicable
3. Review course syllabus
  - Course objectives
  - Calendar of events
  - Course requirements
  - Student evaluation process
  - Assignments
  - Activities
  - Required student resources
  - Class participation requirements

#### Discussion Questions

1. Determined by instructor

#### Application

1. Have students complete all required registration forms.

## **Unit 4: Awareness (Instructor-Led Training)**

### **Topic 4-1: Sizing Up a Structural Collapse Incident**

#### **Terminal Learning Objective**

At the end of this topic a student, given background information and applicable reference materials, will be able to size up a structural collapse rescue incident so that the scope of the rescue is determined, the number of victims is identified, the last reported location of all the victims is established, witnesses and reporting parties are identified and interviewed, resource needs are assessed, primary search parameters are identified, and the information required to develop an initial incident action plan is obtained.

#### **Enabling Learning Objectives**

1. Identify availability and capability of the resources
  - ICS 420-1 FOG (FIRESCOPE – 2017), Chapter 16

#### **Discussion Questions**

1. Determined by instructor

#### **Application**

1. Determined by instructor

#### **Instructor Notes**

1. See corresponding CBT content in Topic 1-1.

**CTS Guide Reference:** CTS 1-6

## **Topic 4-2: Identifying Incident Hazards**

### **Terminal Learning Objective**

At the end of this topic a student, given a specific type of collapse incident, will be able to identify incident hazards so that construction type is determined, all associated hazards are identified, and rescue time constraints are taken into account.

### **Enabling Learning Objectives**

1. Describe resource capabilities and limitations
  - ICS 420-1 FOG (FIREScope – 2017), Chapter 16
2. Identify resource capabilities and limitations
  - ICS 420-1 FOG (FIREScope – 2017), Chapter 16

### **Discussion Questions**

1. Determined by instructor

### **Application**

1. Determined by instructor based on FOG content

### **Instructor Notes**

1. See corresponding CBT content in Topic 1-2

**CTS Guide Reference:** CTS 1-1

### **Topic 4-3: Recognizing the Need for Technical Resources**

#### **Terminal Learning Objective**

At the end of this topic a student, given AHJ guidelines, will be able to recognize the need for technical rescue resources at an operations- or technician-level incident so that the need for additional resources is identified, the response system is initiated, the scene is secured and rendered safe until additional resources arrive, and awareness-level personnel are incorporated into the operational plan.

#### **Enabling Learning Objectives**

1. Describe types of incidents common to the AHJ

#### **Discussion Questions**

1. Determined by instructor

#### **Application**

1. Determined by instructor

#### **Instructor Notes**

1. Use the students' AHJ.
2. See corresponding CBT content in Topic 1-3.

**CTS Guide Reference:** CTS 1-7

## **Topic 4-4: Applying a Building Marking System**

### **Terminal Learning Objective**

At the end of this topic a student, given a structural collapse incident, will be able to apply the building marking system so that the search phase of the floor or structure is marked, victim locations and condition are applied to the area, hazards are noted on the structure, and the access and egress points are marked.

### **Enabling Learning Objectives**

1. None

### **Discussion Questions**

1. Determined by instructor

### **Application**

1. Given a collapse incident scenario (real or simulated), have students apply building markings.

### **Instructor Notes**

1. References:
  - ICS 420-1 FOG (FIRESCOPE – 2017), Chapter 16
  - USACE Field Operations Guide (current edition)
2. See corresponding CBT content in Topic 1-4.

**CTS Guide Reference:** CTS 1-3

## **Topic 4-5: Performing Collapse Support Operations**

### **Terminal Learning Objective**

At the end of this topic a student, given an assignment and available resources, will be able to perform collapse support operations at a rescue incident so that scene lighting is provided for the tasks to be undertaken, environmental concerns are addressed, personnel rehabilitation is facilitated, and the support operations facilitate rescue operational objectives.

### **Enabling Learning Objectives**

1. None

### **Discussion Questions**

1. Determined by instructor

### **Application**

1. FEMA ILT: Activity 3.1 – Cutting Table (Module 3, Section 21)

### **Instructor Notes**

1. See corresponding CBT content in Topic 1-5.

**CTS Guide Reference:** CTS 1-5

## **Topic 4-6: Initiating a Search**

### **Terminal Learning Objective**

At the end of this topic a student, given PPE, an incident location, and victim investigative information, will be able to initiate a search so that search parameters are established and include surface and nonentry void search, the information found is updated and relayed to command, the personnel assignments match their expertise, all victims are located as quickly as possible, risks to searchers are minimized, and accountability is achieved.

### **Enabling Learning Objectives**

1. Identify AHJ policies and procedures

### **Discussion Questions**

1. Determined by instructor

### **Application**

1. Determined by instructor

### **Instructor Notes**

1. See corresponding CBT content in Topic 1-6.
2. Use the students' AHJ.

**CTS Guide Reference:** CTS 1-2



## **Topic 4-7: Moving a Victim**

### **Terminal Learning Objective**

At the end of this topic a student, given victim transport equipment, litters, other specialized equipment, and victim removal systems specific to the rescue environment, will be able to move a victim so that the victim is moved without further injuries, risks to rescuers are minimized, the victim is secured to the transfer device, and the victim is removed from the hazard.

### **Enabling Learning Objectives**

1. Assemble and operate environment-specific victim removal systems
2. Choose an incident-specific transport device

### **Discussion Questions**

1. Determined by instructor

### **Application**

1. Determined by instructor

### **Instructor Notes**

1. ELO 1 and 2 were already covered in Rope Rescue Awareness/Operations, a prerequisite for this course.
2. Topic 5-12 includes the Application for this function.
3. See corresponding CBT content in Topic 1-7.

**CTS Guide Reference:** CTS 1-4

## Unit 5: Operations (Instructor-Led Training)

### Topic 5-1: Maintaining Hazard-specific PPE

#### Terminal Learning Objective

At the end of this topic a student, given clothing or equipment for the protection of the rescuers, including respiratory protection, cleaning and sanitation supplies, maintenance logs or records, inspection procedures, and such tools and resources as are indicated by the manufacturer's guidelines for assembly or disassembly of components during repair or maintenance, will be able to maintain hazard-specific PPE so that damage, defects, and wear are identified and reported or repaired; equipment functions as designed; and preventive maintenance has been performed and documented consistent with the manufacturer's recommendations.

#### Enabling Learning Objectives

1. Identify PPE
  - Required
    - Helmet
    - Eye protection
    - Ear protection
    - Protective clothing
    - Safety boots
    - Gloves
    - Respirator (half mask)
  - Recommended
    - Head lamp
    - Radio
    - Knee and elbow pads
2. Describe how to use record-keeping systems of the AHJ
3. Describe requirements and procedures for cleaning, sanitizing, and infectious disease control
4. Describe how to use provided assembly and disassembly tools
5. Identify manufacturer and department recommendations
6. Describe pre-use inspection procedures
7. Describe how to determine operational readiness
8. Identify wear and damage indicators for PPE
9. Complete logs and records
10. Use cleaning equipment, supplies, and reference materials
11. Select and use tools specific to the task

#### Discussion Questions

1. In what environment did you use your PPE?
2. How do the contaminants from that environment affect your PPE?
3. What is your AHJ's policy or procedure for inspecting, cleaning, maintaining, or discarding PPE?

**Application**

1. Determined by instructor

**Instructor Notes**

1. See corresponding CBT content in Topic 2-1.

**CTS Guide Reference:** CTS 2-13

## Topic 5-2: Maintaining Rescue Equipment

### Terminal Learning Objective

At the end of this topic a student, given maintenance logs and records, tools, and resources as indicated by the manufacturer's guidelines, inspection procedures, equipment replacement protocol, and organizational standard operating procedure, will be able to maintain rescue equipment so that the operational status of equipment is verified and documented, all components are checked for operation, deficiencies are repaired or reported as indicated by standard operating procedure, and items subject to replacement are correctly disposed of and changed out.

### Enabling Learning Objectives

1. Describe how to use record-keeping systems
2. Describe manufacturer and organizational care and maintenance requirements
3. Describe how to select and use maintenance tools
4. Describe replacement protocol and procedures
5. Describe disposal methods
6. Describe AHJ standard operating procedures
7. Identify wear and damage indicators for rescue equipment
8. Evaluate operational readiness of equipment
9. Complete logs and records
10. Select and use maintenance tools

### Discussion Questions

1. Determined by instructor

### Application

1. FEMA ILT:
  - Activity 2.1 Pneumatic Tools (Module 2, Section 92)
  - Activity 2.3 Electric Tools and Manual Tools (Module 2, Section 94)
  - Activity 2.4 Gas-powered Tools (Module 2, Section 95)
  - Activity 2.5 Patient Packaging (Module 2, Section 96)

### Instructor Notes

1. This is your "tool lab".
2. Use FEMA ILT: Module 2 as reference.
3. See corresponding CBT content in Topic 2-2.

**CTS Guide Reference:** CTS 2-14

## **Topic 5-3: Conducting a Size-up of a Light Frame or URM Collapsed Structure**

### **Terminal Learning Objective**

At the end of this topic a student, given an incident and specific incident information, will be able to conduct a size-up of a light frame or unreinforced masonry (URM) collapsed structure so that existing and potential conditions within the structure and the immediate periphery are evaluated, needed resources are defined, hazards are identified, construction and occupancy types are determined, collapse type is identified if possible, the need for rescue is assessed, a scene security perimeter is established, and the size-up is conducted within the scope of the incident management system.

### **Enabling Learning Objectives**

1. Describe types and capabilities of resources
  - ICS 420-1 FOG (FIRESCOPE – 2017), Chapter 16

### **Discussion Questions**

1. Determined by instructor

### **Application**

1. Determined by instructor

### **Instructor Notes**

1. See corresponding CBT content in Topic 2-3.

**CTS Guide Reference:** CTS 2-1

## **Topic 5-4: Developing a Collapse Rescue Incident Action Plan**

### **Terminal Learning Objective**

At the end of this topic a student, given size-up information and a light frame and URM construction collapsed structure, will be able to develop a collapse rescue incident action plan so that initial size-up information is utilized, an incident management system is incorporated, existing and potential conditions within the structure and the immediate periphery are included, specialized resource needs are identified, work perimeters are determined, collapse type/category and associated hazards are identified, construction and occupancy types are determined, incident objectives are established, and scene security measures are addressed.

### **Enabling Learning Objectives**

1. Identify incident-specific resources in a given geographical area
  - ICS 420-1 FOG (FIREScope – 2017), Chapter 16
2. Identify potential specialized resources
  - ICS 420-1 FOG (FIREScope – 2017), Chapter 16

### **Discussion Questions**

1. Determined by instructor

### **Application**

1. Determined by instructor

### **Instructor Notes**

1. See corresponding CBT content in Topic 2-4.

**CTS Guide Reference:** CTS 2-3

## **Topic 5-5: Implementing a Collapse Rescue Incident Action Plan**

### **Terminal Learning Objective**

At the end of this topic a student, given an action plan and a light frame and URM construction collapsed structure, will be able to implement a collapse rescue incident action plan so that pertinent information is used, an incident management system is established and implemented, monitoring of dynamic conditions internally and externally is established, specialized resources are requested, hazards are mitigated, victim rescue and extraction techniques are consistent with collapse and construction type, and perimeter security measures are established.

### **Enabling Learning Objectives**

1. Identify dynamics of incident conditions and peripheral areas
  - FEMA CBT: Module 8, ELO 3
2. Identify specialized resource lists
  - ICS 420-1 FOG (FIREScope – 2017), Chapter 16
3. Describe perimeter security measures
  - FEMA CBT: Module 1, ELO 2
4. Identify personnel needs and limitations
  - FEMA CBT: Module 1, ELO 2
5. Request specialized resources
  - What to request
  - How to request
  - From whom to request
  - When to request
6. Demonstrate perimeter security measures

### **Discussion Questions**

1. Determined by instructor

### **Application**

1. Determined by instructor

### **Instructor Notes**

1. ELO 1 was already covered in Topic 2-4. You do not need to repeat the material here.
2. ELO 4 was already covered in Topic 2-4. You do not need to repeat the material here.
3. ELO 6 will be discussed but not demonstrated. It is already embedded in other activities.
4. See corresponding CBT content in Topic 2-5.

**CTS Guide Reference:** CTS 2-4

## **Topic 5-6: Determining Potential Victim Locations**

### **Terminal Learning Objective**

At the end of this topic a student, given size-up information, a structural collapse tool cache, the type of construction and occupancy, time of day, and collapse pattern, will be able to determine potential victim locations in light frame and URM construction collapse incidents, given so that search areas are established and victims can be located.

### **Enabling Learning Objectives**

1. None

### **Discussion Questions**

1. Determined by instructor

### **Application**

1. Given available AHJ search devices (i.e., thermal imager, fiber optics, search cameras, mirrors, flashlights, night vision goggles) have students familiarize themselves with their use.

### **Instructor Notes**

1. See corresponding CBT content in Topic 2-6.

**CTS Guide Reference:** CTS 2-2



## **Topic 5-7: Searching a Collapsed Structure**

### **Terminal Learning Objective**

At the end of this topic a student, given PPE, the structural collapse tool cache, an assignment, operational protocols, and size-up information, will be able to search a light frame and URM construction collapsed structure so that all victim locations and potential hazards are identified, marked, and reported; protocols are followed; the mode of operation can be determined; and rescuer safety is maintained.

### **Enabling Learning Objectives**

1. None

### **Discussion Questions**

1. Determined by instructor

### **Application**

1. Determined by instructor

### **Instructor Notes**

1. See corresponding CBT content in Topic 2-7.

**CTS Guide Reference:** CTS 2-5

## Topic 5-8: Constructing Cribbing Systems

### Terminal Learning Objective

At the end of this topic a student, given an assignment, PPE, a structural collapse tool cache, various lengths and dimensions of lumber, wedges, and shims, will be able to construct cribbing systems so that the cribbing system will safely support the load, the system is stable, and the assignment is completed.

### Enabling Learning Objectives

1. Describe different types of cribbing systems and their construction methods
  - FEMA ILT: Module 5, ELO 7
2. Describe limitations of construction lumber
  - FEMA ILT: Module 5, ELO 7
3. Describe load calculations
  - FEMA ILT: Module 5, ELO 7
4. Describe principles of and applications for cribbing
  - FEMA ILT: Module 5, ELO 7
5. Describe safety protocols
  - FEMA ILT: Module 1, ELO 1
6. Select and construct cribbing systems
  - FEMA ILT: Module 5, ELO 7
7. Evaluate the structural integrity of the system
  - FEMA ILT: Module 5, ELO 7
8. Determine stability
  - FEMA ILT: Module 5, ELO 7
9. Calculate loads
  - FEMA ILT: Module 5, ELO 3 and 7

### Discussion Questions

1. Determined by instructor

### Application

1. Given PPE and materials, have students build cribbing systems.

### Instructor Notes

1. Demonstrate all five cribbing systems (two-piece layer crosstie, three-piece layer crosstie, platform crosstie, triangle crosstie, modified crosstie)
2. See corresponding CBT content in 2-8.

**CTS Guide Reference:** CTS 2-12

## **Topic 5-9: Lifting a Heavy Load as a Team Member**

### **Terminal Learning Objective**

At the end of this topic a student, given a structural collapse tool cache and a load to be lifted, will be able to lift a heavy load as a team member so that the load is lifted; control and stabilization are maintained before, during, and after the lift; and access can be gained.

### **Enabling Learning Objectives**

1. Describe how to apply levers
  - FEMA ILT: Module 5, ELO 2
2. Describe classes of levers
  - FEMA ILT: Module 5, ELO 2
3. Describe principles of leverage, gravity, and load balance
  - FEMA ILT: Module 5, ELO 2
4. Describe mechanics of load stabilization
  - FEMA ILT: Module 5, ELO 7
5. Describe mechanics of load lifting
  - FEMA ILT: Module 5, ELO 2, 5, 6
6. Describe how to apply pneumatic, hydraulic, mechanical, and manual lifting tools
  - FEMA ILT: Module 5, ELO 2, 5, 6
7. Describe how to calculate the weight of the load
  - FEMA ILT: Module 5, ELO 3
8. Describe safety protocols
  - FEMA ILT: Module 1, ELO 1 and 4
9. Describe stabilization systems
  - FEMA ILT: Module 5, ELO 7
10. Evaluate and estimate the weight of the load
  - FEMA ILT: Module 5, ELO 3
11. Operate lifting tools
  - FEMA ILT: Module 2, ELO 2
12. Apply a lever
  - FEMA ILT: Module 5, ELO 2
13. Apply load stabilization systems
  - FEMA ILT: Module 5, ELO 7

### **Discussion Questions**

1. Determined by instructor

### **Application**

1. See Topic 5-10 Application.

### **Instructor Notes**

1. ELO 7 is already covered in Topics 2-9 and 2-10. You do not need to repeat the material.
2. Teach Topic 5-9 in combination with Topic 5-10.
3. See corresponding CBT content in Topic 2-9.

**CTS Guide Reference:** CTS 2-9

## Topic 5-10: Moving a Heavy Load as a Team Member

### Terminal Learning Objective

At the end of this topic a student, given a structural collapse tool cache, will be able to move a heavy load as a team member, given so that the load is moved the required distance to gain access and so that control is constantly maintained.

### Enabling Learning Objectives

1. Describe how to apply rigging systems
  - FEMA ILT: Module 5, ELO 3
2. Describe how to apply levers
  - FEMA ILT: Module 5, ELO 2
3. Describe classes of levers
  - FEMA ILT: Module 5, ELO 2
4. Describe how to apply rollers
  - FEMA ILT: Module 5, ELO 6
5. Describe inclined planes
  - FEMA ILT: Module 5, ELO 6
6. Describe gravity, center of gravity, and load balance
  - FEMA ILT: Module 5, ELO 3
7. Describe capabilities and limitations of lifting tools
  - FEMA ILT: Module 2, ELO 1
8. Describe how to calculate the weight of the load
  - FEMA ILT: Module 5, ELO 1
9. Describe safety protocols
  - FEMA ILT: Module 1, ELO 1 and 4
10. Evaluate and estimate the weight of the load
  - FEMA ILT: Module 5, ELO 1
11. Operate required tools
  - FEMA ILT: Module 2, ELO 2
12. Construct and use levers, rollers, and inclined planes
  - FEMA ILT: Module 5, ELO 6
13. Utilize rigging systems
  - FEMA ILT: Module 5, ELO 3

### Discussion Questions

1. Determined by instructor

### Application

1. FEMA ILT:
  - Activity 5.1 – Levers Type 1-3, Rollers, and Bridging (Module 5, Section 14)
  - Activity 5.2 – Airbags and Cribbing (Module 5, Section 17)

### Instructor Notes

1. ELO 8 is already covered in Topics 2-9 and 2-10. You do not need to repeat the material.
2. Teach Topic 5-9 in combination with Topic 5-10.
3. See corresponding CBT content in Topic 2-10.

**CTS Guide Reference:** CTS 2-10

## Topic 5-11: Stabilizing a Collapsed Structure as a Member of a Team

### Terminal Learning Objective

At the end of this topic a student, given size-up information, a specific pattern of collapse, a basic structural collapse tool cache, and an assignment, will be able to stabilize a collapsed light frame and URM construction structure as a member of a team so that strategies to effectively minimize the movement of structural components are identified and implemented; hazard warning systems are established and understood by participating personnel; hazard-specific PPE is identified, provided, and utilized; physical hazards are identified; confinement, containment, and avoidance measures are discussed; and a rapid intervention team is established and staged.

### Enabling Learning Objectives

1. Describe PPE care and maintenance requirements
  - AHJ requirements
  - Manufacturer specifications
2. Describe communications and safety protocols
3. Select and construct shoring systems for collapses in light frame and URM construction structures
  - Class 1
    - Single T-shore (spot shore)
    - Double T-shore
  - Class 2
    - Two-post vertical shore
    - Multi-post vertical shore
    - Horizontal shore
    - Door and window shore
      - Construct in place
      - Prefabricated
  - Class 3
    - Raker shores
      - Flying
      - Split
      - Solid
  - Cribbing
    - Two-piece layer crosstie
    - Three-piece layer crosstie
    - Platform crosstie
    - Triangle crosstie
    - Modified crosstie
  - Ellis
    - Screw
    - Clamp
4. Use PPE
5. Perform structural load calculations

- USACE Field Operations Guide (current edition)
6. Determine resource needs
    - Based on structure type and construction, collapse type/damage, anticipated load, shore type and location
  7. Select and operate basic and specialized tools and equipment
  - 8.
  9. Implement communications and safety protocols
  10. Mitigate specific hazards associated with shoring tasks

### **Discussion Questions**

1. Determined by instructor

### **Application**

1. Given size-up information, a specific pattern of collapse, a basic structural collapse tool cache, and an assignment, have students construct shores to stabilize a collapsed light frame and URM construction structure as a member of a team.
2. FEMA ILT:
  - Activity 3.2 – Class 1 Shoring (Module 3, Section 24)
  - Activity 3.3 – Class 2 Shores: Two-Post Shore (Module 3, Section 26)
  - Activity 3.4 – Class 2 Shores: Window and Doors (Module 3, Section 29)
  - Activity 3.7 – Class 3 Shoring: Raker Shore (Module 3, Section 40)

### **Instructor Notes**

1. The application should include a build for every shoring system listed in ELO 3.
2. Use USACE Shoring Operations Guide (current edition) as a reference document.
3. ELO 1 is already covered by Topic 5-1. You do not need to repeat the material.
4. ELOs 7, 8, and 9 will be covered during course activities.
5. See corresponding CBT content in Topic 2-11.

**CTS Guide Reference:** CTS 2-6

## Topic 5-12: Breaching Structural Components

### Terminal Learning Objective

At the end of this topic a student, given an assignment, PPE, various types of construction materials, and a structural collapse tool cache, will be able to breach light frame and URM construction structural components so that the opening supports the rescue objectives, the necessary tools are selected, structural stability is maintained, and the methods utilized are safe and efficient.

### Enabling Learning Objectives

1. Describe effective breaching techniques
  - FEMA ILT: Module 4, ELO 1, 2, 4, 5
2. Describe the selection, capabilities, and limitations of tools
  - FEMA ILT Module 2, ELO 1 and 2
3. Describe safety protocols for breaching operations
  - FEMA ILT: Module 2, ELO 1
4. Describe how to calculate weight
  - FEMA ILT: Module 5, ELO 1
5. Describe how to anticipate material movement during breaching and stabilization techniques
  - FEMA ILT: Module 4, ELO 4 and 5
6. Select and use breaching tools
  - FEMA ILT: Module 2, ELO 2
7. Implement breaching techniques based on light frame and URM construction types
  - FEMA ILT: Module 2, ELO 2
8. Use PPE
  - FEMA ILT: Module 1, ELO 1 and 8
9. Apply stabilization where required
  - FEMA ILT: Module 3, ELO 1

### Discussion Questions

1. Determined by instructor

### Application

1. Activity 4.4 – Horizontal Breach (Dirty) (Module 4, Section 17)
2. Activity 4.5 – Vertical Breach (Dirty) (Module 4, Section 25)
3. FEMA ILT: Activity 4.8 – The Funhouse (Module 4, Section 23)

### Instructor Notes

1. See corresponding CBT content in Topic 2-12.

**CTS Guide Reference:** CTS 2-11



## **Topic 5-13: Releasing a Victim from Entrapment**

### **Terminal Learning Objective**

At the end of this topic a student, given PPE and resources for breaching, breaking, lifting, prying, shoring, and/or otherwise moving or penetrating the offending structural component, will be able to release a victim from entrapment by components of a light frame and URM construction collapsed structure so that hazards to rescue personnel and victims are minimized, considerations are given to compartment syndrome due to crush injuries, techniques enhance patient survivability, tasks are accomplished within projected time frames, and techniques do not compromise the integrity of the existing structure or structural support systems.

### **Enabling Learning Objectives**

1. Describe PPE care and maintenance requirements

### **Discussion Questions**

1. Determined by instructor

### **Application**

1. Determined by instructor

### **Instructor Notes**

1. ELO 1 is already covered in Topic 5-1. You do not need to repeat the material.
2. Conduct a conversation with the students about how to move a victim safely through the opening and the surrounding area.
3. Application completed in Topic 5-12.
4. See corresponding CBT content in Topic 2-13.

**CTS Guide Reference:** CTS 2-7

## **Topic 5-14: Removing a Victim from a Collapse Incident**

### **Terminal Learning Objective**

At the end of this topic a student, given a disentangled victim, a basic first aid kit, and victim packaging resources, will be able to remove a victim from a light frame and URM construction collapse incident so that basic life functions are supported as required, victim is evaluated for signs of compartment syndrome due to crush injuries, advanced life support is called if needed, methods and packaging devices selected are compatible with intended routes of transfer, universal precautions are employed to protect personnel from bloodborne pathogens, and extraction times meet time constraints for medical management.

### **Enabling Learning Objectives**

1. Describe PPE care and maintenance requirements

### **Discussion Questions**

1. Determined by instructor

### **Application**

1. Given a disentangled victim and victim packaging resources, remove a victim from a light frame and/or URM construction collapse incident.

### **Instructor Notes**

1. ELO 1 is already covered in Topic 5-1. You do not need to repeat the material.
2. Application can be completed as part of Topic 5-12.
3. See corresponding CBT content in Topic 2-14.

**CTS Guide Reference:** CTS 2-8

## **Topic 5-15: Terminating an Incident**

### **Terminal Learning Objective**

At the end of this topic a student, given PPE specific to the incident, isolation barriers, and tool cache, will be able to terminate an incident, so that rescuers and bystanders are protected and accounted for during termination operations; the party responsible is notified of any modification or damage created during the operational period; documentation of loss or material use is accounted for, scene documentation is performed, scene control is transferred to a responsible party; potential or existing hazards are communicated to that responsible party; debriefing and post-incident analysis and critique are considered, and command is terminated.

### **Enabling Learning Objectives**

1. Describe isolation techniques
2. Recognize statutory requirements identifying responsible parties
3. Describe how to use an accountability system
4. Describe reporting methods
5. Describe post-incident analysis techniques
6. Identify and perform decontamination
7. Collect data
8. Follow record-keeping/reporting protocol
9. Complete post-incident analysis activities

### **Discussion Questions**

1. Determined by instructor

### **Application**

1. Determined by instructor

### **Instructor Notes**

1. See USACE Field Operations Guide (current edition) – Reassignment/Demobilization Operational Checklist.
2. Complete all ELOs in accordance with students' AHJ.
3. See corresponding CBT content in Topic 2-15.

**CTS Guide Reference:** CTS 2-15

## How to Read a Course Plan

A course plan identifies the details, logistics, resources, and training and education content for an individual course. Whenever possible, course content is directly tied to a national or state standard. SFT uses the course plan as the training and education standard for an individual course. Individuals at fire agencies, academies, and community colleges use course plans to obtain their institution's consent to offer course and provide credit for their completion. Instructors use course plans to develop syllabi and lesson plans for course delivery.

### Course Details

The Course Details segment identifies the logistical information required for planning, scheduling, and delivering a course.

### Required Resources

The Required Resources segment identifies the resources, equipment, facilities, and personnel required to deliver the course.

### Unit

Each Unit represents a collection of aligned topics. Unit 1 is the same for all SFT courses. An instructor is not required to repeat Unit 1 when teaching multiple courses within a single instructional period or academy.

### Topics

Each Topic documents a single Terminal Learning Objective and the instructional activities that support it.

### Terminal Learning Objective

A Terminal Learning Objective (TLO) states the instructor's expectations of student performance at the end of a specific lesson or unit. Each TLO includes a task (what the student must be able to do), a condition (the setting and supplies needed), and a standard (how well or to whose specifications the task must be performed). TLOs target the performance required when students are evaluated, not what they will do as part of the course.

### Enabling Learning Objectives

The Enabling Learning Objectives (ELO) specify a detailed sequence of student activities that make up the instructional content of a lesson plan. ELOs cover the cognitive, affective, and psychomotor skills students must master to complete the TLO.

### Discussion Questions

The Discussion Questions are designed to guide students into a topic or to enhance their understanding of a topic. Instructors may add to or adjust the questions to suit their students.

**Application**

The Application segment documents experiences that enable students to apply lecture content through cognitive and psychomotor activities, skills exercises, and formative testing. Application experiences included in the course plan are required. Instructors may add additional application experiences to suit their student population if time permits.

**Instructor Notes**

The Instructor Notes segment documents suggestions and resources to enhance an instructor's ability to teach a specific topic.

**CTS Guide Reference**

The CTS Guide Reference segment documents the standard(s) from the corresponding Certification Training Standard Guide upon which each topic within the course is based. This segment is eliminated if the course is not based on a standard.

**Skill Sheet**

The Skill Sheet segment documents the skill sheet that tests the content contained within the topic. This segment is eliminated if the course does not have skill sheets.