

Structural Collapse Specialist 2

(NFPA 1006: Structural Collapse Rescue Technician)

Instructor Task Book (2021)



California Department of Forestry and Fire Protection
Office of the State Fire Marshal
State Fire Training

Overview

Authority

This instructor task book includes the training standards set forth in:

- NFPA 1006: Standard for Technical Rescue Personnel Professional Qualifications (2021)

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Cover photo courtesy of the 9/11 Memorial & Museum collection.

2001 - 2021

This curriculum is dedicated to all first responders.

Purpose

The State Fire Training instructor task book is a performance-based document. It lists the minimum requirements a candidate must meet to teach a specific State Fire Training course or course series.

Assumptions

Except for Fire Fighter and Emergency Vehicle Technician (EVT) certifications, a candidate may begin the task book initiation process upon completion of all required education components (courses).

Each job performance requirement (JPR) shall be evaluated after the candidate initiates the task book.

State Fire Training task books do not count towards the NWCG task book limit. There is no limit to the number of State Fire Training task books a candidate may pursue at one time if the candidate meets the initiation requirements for each.

It is the candidate's responsibility to routinely check the State Fire Training website for updates to an initiated task book. All State Fire Training issued updates to an initiated task book are required for task book completion.

A candidate must consistently work to complete all requirements documented in this instructor task book since its initiation date. Significant gaps between JPR sign-offs may result in

disqualification from teaching Structural Collapse Specialist 2: Technician as a registered instructor or a candidate must initiate a new task book using State Fire Training's current published version.

Roles and Responsibilities

Candidate

The candidate is the individual pursuing instructor registration.

Initiation

The candidate shall:

1. Complete the Initiation Requirements section.
 - Please print.
2. Complete a block on the Signature Verification page with a handwritten signature.

Completion

The candidate shall:

1. Complete all Job Performance Requirements.
 - Ensure that an evaluator initials, signs, and dates each task to verify completion.
2. Complete the Completion Requirements section.
3. Sign and date the Candidate verification section on the Review and Approval page with a handwritten signature.
4. Obtain their fire chief's handwritten (not stamped) signature on the Fire Chief verification section on the Review and Approval page.
5. Create and retain a physical or high-resolution digital copy of the completed task book.

Submission

The candidate shall:

1. Submit a copy (physical or digital) of the completed task book and any supporting documentation to State Fire Training.
 - See Submission and Review below.

A candidate should not submit a task book until they have completed all requirements and obtained all signatures. State Fire Training will reject and return an incomplete task book.

Evaluator

An evaluator is any individual who verifies that the candidate can satisfactorily execute a job performance requirement (JPR).

A qualified evaluator is a Registered Instructor of SCS1 or SCS2, designated by the candidate's fire chief (or authorized designee), and shall possess the equivalent or higher-level certification. If no such evaluator is present within the organization, the fire chief (or authorized designee) shall designate an individual with more experience than the candidate and a demonstrated ability to execute the job performance requirements. For instructor task books that do not require fire chief initiation, academy instructors serve as or designate evaluators.

An instructor task book may have more than one evaluator.

All evaluators shall:

1. Complete a block on the Signature Verification page with a handwritten signature.
2. Review and understand the candidate's instructor task book requirements and responsibilities.
3. Verify the candidate's successful completion of one or more job performance requirements through observation.
 - Do not evaluate any job performance requirement (JPR) until after the candidate initiates the task book.
 - Sign all appropriate lines in the instructor task book with a handwritten signature or approved digital signature (e.g., DocuSign or Adobe Sign; a scanned copy of a signature is not acceptable) to record demonstrated performance of tasks.

Fire Chief

The fire chief is the individual who initiates (when applicable) and then reviews and confirms the completion of a candidate's instructor task book.

A fire chief may identify an authorized designee already on file with State Fire Training to fulfill any task book responsibilities assigned to the fire chief. (See *State Fire Training Procedures Manual*, 4.2.2: Authorized Signatories)

Initiation

The fire chief shall:

1. Review and understand the candidate's instructor task book requirements and responsibilities.
2. Complete a block on the Signature Verification page with a handwritten signature.
3. Designate qualified evaluators.

Completion

The fire chief shall:

1. Confirm that the candidate has obtained the appropriate signatures to verify successful completion of each job performance requirement.

- Ensure that all job performance requirements were evaluated after the initiation date.
- 2. Confirm that the candidate meets the Completion Requirements.
- 3. Sign and date the Fire Chief verification statement under Review and Approval with a handwritten signature.
 - If signing as an authorized designee, verify that your signature is on file with State Fire Training.

Submission and Review

A candidate should not submit a task book until they have completed all requirements and obtained all signatures. State Fire Training will reject and return an incomplete task book.

To submit a completed task book, please send the following items to the address below:

1. A copy of the completed task book (candidate may retain the original)
2. All supporting documentation
3. Payment

State Fire Training

Attn: Instructor Registration

PO Box 944246

Sacramento, CA 94244-2460

State Fire Training reviews all submitted task books.

- If the task book is complete, State Fire Training will authorize the task book and retain a digital copy of the authorized task book in the candidate's career file.
- If the task book is incomplete, State Fire Training will return the task book with a notification indicating what needs to be completed prior to resubmission.

Completion of this instructor task book is one step in the instructor registration process. Please refer to the *State Fire Training Procedures Manual* for the complete list of qualifications required to teach Structural Collapse Specialist 2.

Initiation Requirements

The following requirements must be completed prior to initiating this task book.

Candidate Information

Name: _____

SFT ID Number: _____

Fire Agency: _____

Initiation Date: _____

Prerequisites

The candidate meets the following prerequisites.

1. SFT Primary Instructor qualifications (See *State Fire Training Procedures Manual* 6.2.1: Qualifications)

Include documentation to verify prerequisite requirements when you submit your instructor task book unless verification is already documented in your SFT User Portal.

Education

That candidate has completed the following courses.

1. Structural Collapse Specialist 1: Operations
2. Structural Collapse Specialist 2: Technician

Include documentation to verify education requirements when you submit your instructor task book unless verification is already documented in your SFT User Portal.

Fire Chief Approval

State Fire Training confirms that a fire chief's approval is not required to initiate this task book.

Signature Verification

The following individuals have the authority to verify portions of this instructor task book using the signature recorded below.

Please print except for the Signature line where a handwritten signature is required.
Add additional signature pages as needed.

Name: _____
Job Title: _____
Organization: _____
Signature: _____

Name: _____
Job Title: _____
Organization: _____
Signature: _____

Name: _____
Job Title: _____
Organization: _____
Signature: _____

Name: _____
Job Title: _____
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Job Title: _____
Organization: _____
Signature: _____

Name: _____
Job Title: _____
Organization: _____
Signature: _____

Name: _____
Job Title: _____
Organization: _____
Signature: _____

Job Performance Requirements

Job Performance Requirements

The candidate must complete each job performance requirement (JPR) in accordance with the standards of the authority having jurisdiction (AHJ) or the National Fire Protection Association (NFPA), whichever is more restrictive.

When California requirements exceed or require revision to the NFPA standard, the corresponding Office of the State Fire Marshal approved (OSFM) additions or revisions appear in italics.

All JPRs must be completed within a California fire agency or State Fire Training Accredited Regional Training Program (ARTP).

Each JPR shall be evaluated after the candidate initiates the task book.

Each task must be performed twice.

- The two instances must occur during two different courses.
- The same evaluator cannot sign off on the same task twice.

Examples of correct and incorrect evaluation:

Correct: Task completed during two separate courses and evaluated by two separate individuals.

1. Assemble a comprehensive burn plan ("burn book") that contains all documentation necessary to conduct a live fire training evolution in accordance with NFPA standards and the policies and procedures of State Fire Training (SFT) and the authority having jurisdiction (AHJ).	1 st Evaluation			2 nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe purpose of a live fire burn plan	AAA123	2/8/18	JAS	BBB123	5/15/18	CWJ
b. Identify components of a live fire burn plan ("burn book")	AAA123	2/8/18	JAS	BBB123	5/15/18	CWJ
c. Identify records-retention requirements for burn plans	AAA123	2/8/18	JAS	BBB123	5/15/18	CWJ

Incorrect: Task completed twice during one course but evaluated by two separate individuals.

1. Assemble a comprehensive burn plan (“burn book”) that contains all documentation necessary to conduct a live fire training evolution in accordance with NFPA standards and the policies and procedures of State Fire Training (SFT) and the authority having jurisdiction (AHJ).	1 st Evaluation			2 nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe purpose of a live fire burn plan	AAA123	2/8/18	JAS	AAA123	2/8/18	CWJ
b. Identify components of a live fire burn plan (“burn book”)	AAA123	2/8/18	JAS	AAA123	2/8/18	CWJ
c. Identify records-retention requirements for burn plans	AAA123	2/8/18	JAS	AAA123	2/8/18	CWJ

Incorrect: Task completed during two separate courses but evaluated by the same individual.

1. Assemble a comprehensive burn plan (“burn book”) that contains all documentation necessary to conduct a live fire training evolution in accordance with NFPA standards and the policies and procedures of State Fire Training (SFT) and the authority having jurisdiction (AHJ).	1 st Evaluation			2 nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe purpose of a live fire burn plan	AAA123	2/8/18	JAS	BBB123	5/15/18	JAS
b. Identify components of a live fire burn plan (“burn book”)	AAA123	2/8/18	JAS	BBB123	5/15/18	JAS
c. Identify records-retention requirements for burn plans	AAA123	2/8/18	JAS	BBB123	5/15/18	JAS

Structural Collapse Specialist 2 Instructor

Technician

1. Maintain hazard-specific PPE.	1 st Evaluation			2 nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Identify damage, defects, and wear						
b. Report or repair identify damage, defects, and wear						
c. Ensure equipment functions as designed						
d. Perform and document preventive maintenance consistent with manufacturer’s recommendations						
2. Maintain rescue equipment.	1 st Evaluation			2 nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Verify and document operational status of equipment						
b. Check all components for operation						
c. Repair or report deficiencies as indicated by standard operating procedure						
d. Correctly dispose of change out items subject to replacement						
3. Conduct a size-up of a collapsed heavy construction-type structure.	1 st Evaluation			2 nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials

a. Evaluate existing and potential conditions within structure and immediate periphery						
b. Define needed resources						
c. Identify hazards						
d. Determine construction and occupancy types						
e. Identify collapse type if possible						
f. Assess the need for rescue						
g. Establish a scene security perimeter						
h. Conduct size-up within scope of the incident management system						
4. Develop a collapse rescue incident action plan.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Utilize initial size-up information						
b. Incorporate an incident management system						
c. Include existing and potential conditions within structure and t immediate periphery						
d. Identify specialized resource needs						
e. Determine work perimeters						
f. Identify collapse type/category and associated hazards						
g. Determine construction and occupancy types						
h. Establish incident objectives						
i. Address scene security measures						

5. Implement a collapse rescue incident action plan.	1 st Evaluation			2 nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Use pertinent information						
b. Establish and implement an incident management system						
c. Establish monitoring of dynamic conditions internally and externally						
d. Request specialized resources						
e. Mitigate hazards						
f. Ensure victim rescue and extraction techniques are consistent with collapse and construction type						
g. Establish perimeter security measures						
6. Determine potential victim locations.	1 st Evaluation			2 nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Establish search areas						
b. Locate victims						
7. Search a collapsed structure.	1 st Evaluation			2 nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Identify, mark, and report all victim locations and potential hazards						
b. Follow protocols						

c. Determine mode of operation						
d. Maintain rescuer safety						
8. Construct cribbing systems.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Construct a stable two-piece layer cross tie that safely supports a load						
b. Construct a stable three-piece layer cross tie that safely supports a load						
c. Construct a stable platform cross tie that safely supports a load						
d. Construct a stable triangle cross tie that safely supports a load						
e. Construct a stable modified cross tie that safely supports a load						
9. Lift a heavy load as a team member.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Maintain control and stabilization before, during, and after the lift						
b. Gain access						
10. Move a heavy load as a team member.*	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Move load the required distance to gain access						
b. Maintain constant control						

c. Activity 5.1 – Lever Type 1-3, Rollers, and Bridging						
d. Activity 5.2 – Airbags and Cribbing						
e. Activity 5.3 - Rigging						
f. Activity 5.4 - Cranes						
g. Activity 5.5 – Anchors and Bolting						
h. Activity 5.6 – Mechanical Advantage (MA) Systems						
i. Activity 5.7 – Obstacle (O) Course (crane only here for load calculations)						
11. Stabilize a collapsed structure using timber shoring systems as a member of a team.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Identify and implement strategies to effectively minimize movement of structural components						
b. Establish hazard warning systems and ensure participating personnel understand them						
c. Identify, provide, and utilize hazard-specific PPE						
d. Identify physical hazards						
e. Discuss confinement, containment, and avoidance measures						
f. Establish and stage and a rapid intervention team						
g. Stabilize a collapsed structure using a double raker shoring system						
h. Stabilize a collapsed structure using a triple raker shoring system						
i. Stabilize a collapsed structure using a laced post shoring system						

j. Stabilize a collapsed structure using plywood laced post shoring system (PLP)						
k. Stabilize a collapsed structure using a Type 2 sloped floor shoring system						
l. Stabilize a collapsed structure using a Type 3 sloped floor shoring system						
12. Stabilize a collapsed structure using mechanical shoring systems as a member of a team.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Establish hazard warning systems and ensure participating personnel understand them						
b. Identify all unstable structural components that can impact the work and egress routes						
c. Establish alternative egress routes when possible						
d. Determine expert resource needs and communicate to command						
e. Calculate load estimates for support system requirements						
f. Ensure all shoring systems meet or exceed load-bearing demands						
g. Monitor shoring systems continuously for integrity						
h. Follow safety protocols						
i. Establish and stage a rapid intervention crew (RIC) to aid search and rescue personnel in the event of entrapment						
j. Establish an accountability system						
k. Ensure ongoing atmospheric monitoring						
l. Communicate progress as required						

m. Stabilize a collapsed structure using a single t shore (spot shore)						
n. Stabilize a collapsed structure using a double t shoring system						
o. Stabilize a collapsed structure using a two-post vertical shore						
p. Stabilize a collapsed structure using a multi-post vertical shoring system						
q. Stabilize a collapsed structure using a horizontal shoring system						
r. Stabilize a collapsed structure using a door and window shoring system						
s. Stabilize a collapsed structure using a flying raker shoring system						
t. Stabilize a collapsed structure using a split raker shoring system						
u. Stabilize a collapsed structure using a solid raker shoring system						
v. Stabilize a collapsed structure using a Type 2 slope floor shoring system						
w. Stabilize a collapsed structure using a Type 3 slope floor shoring system						
13. Breach heavy structural components.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Complete a vertical (clean) breach <ul style="list-style-type: none"> • Ensure opening supports rescue objectives • Select necessary tools • Maintain stability • Use safe and efficient methods 						

b. Complete a vertical (dirty) breach <ul style="list-style-type: none"> • Ensure opening supports rescue objectives • Select necessary tools • Maintain stability • Use safe and efficient methods 						
c. Complete a horizontal (clean) breach <ul style="list-style-type: none"> • Ensure opening supports rescue objectives • Select necessary tools • Maintain stability • Use safe and efficient methods 						
d. Complete a horizontal (dirty) breach <ul style="list-style-type: none"> • Ensure opening supports rescue objectives • Select necessary tools • Maintain stability • Use safe and efficient methods 						
e. Complete a confined space breach <ul style="list-style-type: none"> • Ensure opening supports rescue objectives • Select necessary tools • Maintain stability • Use safe and efficient methods 						
f. Complete a gallows breach <ul style="list-style-type: none"> • Ensure opening supports rescue objectives • Select necessary tools • Maintain stability • Use safe and efficient methods 						
14. Cut through structural steel.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Cut steel efficiently						

b. Protect victim and rescuer						
c. Put fire control measures in place						
d. Shackle, plunge, and create line cuts on steel plate						
e. Shackle and cut I-beams						
f. Straight cut rebar						
g. Heat tension cable until it fails						
h. Cut steel while suspended from a crane cart						
15. Coordinate the use of heavy equipment.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Use rigging <ul style="list-style-type: none"> • Establish common communications • Ensure equipment usage supports operational objective • Avoid hazards • Follow rescuer and operator safety protocols 						
b. Use a crane or rotator <ul style="list-style-type: none"> • Establish common communications • Ensure equipment usage supports operational objective • Avoid hazards • Follow rescuer and operator safety protocols 						
c. Use anchors and bolting <ul style="list-style-type: none"> • Establish common communications • Ensure equipment usage supports operational objective • Avoid hazards 						

<ul style="list-style-type: none"> Follow rescuer and operator safety protocols 						
16. Release a victim from entrapment by components of a heavy construction-type collapsed structure.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Minimize hazards to rescue personnel and victims						
b. Consider compartment syndrome due to crush injuries						
c. Utilize techniques that promote patient survivability						
d. Accomplish tasks within projected time frames						
e. Ensure techniques do not compromise integrity of existing structure or structural support systems						
17. Remove a victim from a heavy construction-type collapse incident.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Support basic life functions as required						
b. Evaluate victim for signs of compartment syndrome						
c. Call advanced life support if needed						
d. Ensure methods and packaging devices selected are compatible with intended routes of transfer						
e. Employ universal precautions to protect personnel from bloodborne pathogens						
f. Ensure extraction times meet time constraints for medical management						

* See FEMA’s *Structural Collapse Specialist Instructor-Led Training (ILT)*

Completion Requirements

The following requirements must be completed prior to submitting this task book.

Experience

The candidate meets the following experience requirements.

1. OSFM certified Fire Fighter 2
2. Held the rank of Fire Fighter within a recognized fire agency in California performing suppression/rescue duties for a minimum of two years; **or** held the rank of Fire Fighter within a recognized fire agency in California performing suppression/rescue duties for a minimum of four years of volunteer or part-time paid experience time

Include documentation to verify prerequisite requirements when you submit your instructor task book unless verification is already documented in your SFT User Portal.

Position

State Fire Training confirms that there are no position requirements for instructor registration.

Updates

The candidate has completed and enclosed all updates to this instructor task book released by State Fire Training since its initial publication.

Number of enclosed updates: _____

Completion Timeframe

The candidate has consistently worked to complete all requirements documented in this instructor task book since its initiation date. The candidate acknowledges that significant gaps between JPR sign offs may result in disqualification from teaching Structural Collapse Specialist 2: Technician as a registered instructor or the candidate must initiate a new task book using State Fire Training's current published version.

Initiation Date (see Initiation Date under Initiation Requirements): _____

Review and Approval

Candidate

Candidate (please print): _____

I, the undersigned, am the person applying to teach Structural Collapse Specialist 2: Technician. I hereby certify under penalty of perjury under the laws of the State of California, that the completion of all requirements documented herein is true in every respect. I understand that misstatements, omissions of material facts, or falsification of information or documents may be cause for rejection or revocation.

Signature: _____ Date: _____

Fire Chief

Candidate's Fire Chief (please print): _____

I, the undersigned, am the person authorized to verify the candidate's qualifications to teach Structural Collapse Specialist 2: Technician. I hereby certify under penalty of perjury under the laws of the State of California, that the completion of all requirements documented herein are true in every respect. I understand that misstatements, omissions of material facts, or falsification of information or documents may be cause for rejection.

Signature: _____ Date: _____