

Trench Rescue Technician

(NFPA 1006: Trench Rescue
Awareness/Operations/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)

Published: November 2022

Published by: State Fire Training, PO Box 944246, Sacramento, CA 94244-2460

Cover photo courtesy of Chris Johns, Firefighter, Orange County Fire Authority.

Purpose

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

Assumptions

With the exception of 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 as long as 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 complete their task book within three years of its initiation date. Otherwise, a candidate must initiate a new task book using the curriculum'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 Trench Rescue Technician Instructor designated by the candidate's fire chief (or authorized designee). 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 Trench Rescue Technician.

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. OSFM Instructor 1, Training Instructor I, **or** Fire Instructor I certification or an SFT Registered Instructor

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

Education

The candidate has completed the following courses.

1. Trench Rescue Technician (2021) **or** (2014)
2. Confined Space Rescue: Operations/Technician (2021) **or** Confined Space Rescue Technician (2008)

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: _____

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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 Programs (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
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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.

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	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

Trench Rescue Technician Instructor

Course Administration and Orientation

1. Complete course administration activities.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Confirm prop set up and safety						
b. Confirm excavation equipment availability						
c. Contact Underground Service Alert						
d. Confirm facilities set up and safety						
e. Complete and submit course scheduling request						
f. Order student textbooks (if applicable)						
g. Confirm equipment (based on number of students)						
h. Order lumber and other supplies						
i. Complete instructor assignments						
j. Complete Training Action Plan						
k. Organize scenarios (location, equipment, timing, complexity)						
l. Complete Trench Daily Inspection Worksheet						
m. Complete class rosters						
n. Confirm facilities for off-site instruction						
o. Confirm travel to off-site facilities						

p. Secure trench site at end of day/class						
q. Review OSHA, Cal/OSHA, ASTM, ANSI, NIOSH, NFPA (1670, 1006, 1951, 1500)						
2. Identify facility and classroom requirements and course objectives, events, requirements, assignments, activities, skills exercises, resources, evaluation methods, and participation requirements.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Identify facility requirements						
b. Identify classroom requirements						
c. Review course syllabus						

Background

3. Apply historical knowledge to trench rescue operations.	1 st Evaluation			2 nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Understand fatality and injury statistics from case histories and recent trench rescue incidents						
4. Carry out trench rescue operations in accordance with federal, state, and local standards, regulations, policies, and procedures.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Identify federal standard for trenching and excavations						
b. Describe California standards for trenching and excavation						
c. Identify other regulations that may impact trenching operations						
d. Identify consequences related to regulatory non-compliance						

Soil and Trench Considerations

5. Describe soil characteristics.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe soil types, characteristics, and concerns						
b. Describe how to conduct soil testing to determine soil type						
c. Describe forces associated with soil						
d. Describe soil strength						
6. Recognize types of trenches and excavations.	1 st Evaluation			2 nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Define “trench”						
b. Define “excavation”						
c. Describe trench types						
d. Describe trench terminology						
7. Describe trench collapse patterns and failure factors.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Identify trench collapse points						
b. Describe collapse patterns						
c. Describe factors that lead to trench failure						
d. Describe signs of impending collapse						

Emergency Response

8. Prepare a team for trench rescue operations.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe the importance of trench rescue training						
b. Describe how to assemble an effective rescue team						
c. Describe the importance of scene safety, discipline, and accountability						
d. Describe how to select and use personal protective equipment						
e. Describe how to select and use tools and equipment						
f. Select and use personal protective equipment						
g. Select and use tools and equipment						
9. Outline trench rescue considerations when responding to a given trench rescue incident.	1 st Evaluation			2 nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe factors to consider when responding to a trench rescue incident						
10. Interview a witness or “competent person”.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe the need to secure “competent person” or witness						
b. Identify questions to ask in an initial interview						
c. Identify effective interview techniques						

d. Understand how to identify the “competent person”						
e. Identify visual evidence of victim involvement, number, and location						
f. Use interview techniques						
11. Size up a trench rescue incident.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe the importance of size up at a trench rescue incident						
b. Identify components to evaluate during size up						
c. Describe basic search criteria for trench rescue incidents						
d. Identify elements of a trench rescue incident action plan and related information						
e. Describe the relationship of size-up to the incident management system						
f. Identify information gathering techniques and how that information is used in the size-up process						
g. Identify types of reference materials and their uses						
h. Gather information						
i. Relay information						
12. Recognize the need for technical rescue resources.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe trench rescue operational protocols						
b. Identify components of a Trench Rescue Tactical Worksheet						

c. Apply operational protocols						
d. Select and use a tactical worksheet						
e. Request support and resources						
13. Identify incident hazards and implement a hazard control plan.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe how to secure a scene and control access						
b. Describe tactics for approaching the trench while minimizing the likelihood of collapse						
c. Describe types and nature of surface and below grade trench hazards						
d. Describe conditions with implications for secondary collapse and victim survivability						
e. Describe hazard isolation/control methods, equipment, and implementation						
f. Describe criteria for a safe zone within the trench						
g. Establish safe zones (surface and below grade)						
h. Place scene control barriers						
i. Identify incident hazards						
j. Communicate high-risk areas to other responders						
k. Employ hazard control plan to protect personnel inside and outside of trench						
l. Select and deploy tools or materials						
m. Operate control and mitigation equipment						

14. Coordinate the use of heavy equipment.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe types of heavy equipment						
b. Describe capabilities, application, and hazards of heavy equipment and rigging						
c. Describe how to confirm operator training						
d. Describe types and methods of communication						
e. Use communication methods						
f. Recognize hazards						
g. Assess operator for skill and calm demeanor						
h. Assess heavy equipment for precision of movement and maintenance						
i. Monitor rescuer and victim safety						
15. Support an operations or technician-level incident.	1 st Evaluation			2 nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe non-entry support activities						
b. Apply operational protocols						
c. Function within an incident management system						
d. Follow and implement an incident action plan						
e. Report the task progress status to a supervisor or incident command						

16. Safely perform in and around a given trench rescue incident.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe pre-entry operations essential to safely perform in and around a trench rescue incident						

Protective Systems

17. Identify types of protective systems used in trench rescue operations.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe when a protective system is required						
b. Identify protective techniques or systems used in trench rescue operations (sloping, benching, trench shields, trench boxes, timber shoring, mechanical shoring)						

18. Implement a trench shoring plan.	1 st Evaluation			2 nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe how to set up a cutting station						
b. Describe how to install a shoring system for a nonintersecting trench no more than 8 ft (2.4 m) deep						
c. Describe how to install a shoring system for an intersecting trench						
d. Describe how to install a shoring system for a trench more than 8 ft (2.4 m) deep						
e. Describe how to use backfill						

f. Describe how to use spot shoring techniques to support soil without incorporating uprights or panels as part of the shoring plan						
g. Describe emergency procedures						
h. Set-up a cutting station						
i. Build an upright shore						
j. Build a waler shore						
k. Build an end shore						
l. Install a shoring system for a nonintersecting trench no more than 8 ft (2.4 m) deep						
m. Install a shoring system for an intersecting trench						
n. Install a shoring system for a trench more than 8 ft (2.4 m) deep						
o. Use spot shoring techniques to support soil without incorporating uprights or panels as part of the shoring plan						
p. Establish safe zones						
q. Anticipate extrication logistics						
19. Support an intersecting trench as a member of a team.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe how to support an intersecting trench as a member of a team						
b. Support an intersecting trench operation						

Rescue, Recovery, and Termination

20. Facilitate a non-entry rescue or victim self-rescue.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe criteria for rapid, non-entry rescues						
b. Describe the need to brief rescuers						
c. Identify non-entry rescue and self-rescue tactics						
d. Implement non-entry rescue and self-rescue tactics						
e. Select and deploy tools used to facilitate non-entry and self-rescue						
f. Reduce imposed loads at or near the lip of the trench						
21. Remove a victim from a trench.	1 st Evaluation			2 nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe how to search for a victim in a trench						
b. Describe types of victim entrapment						
c. Describe how to construct load stabilization systems						
d. Describe how to lift a load						
e. Describe how to release a victim from entrapment						
f. Describe how to manage care for a compromised victim						
g. Describe how to package a victim for removal						
h. Describe how to remove a victim						

i. Release a victim from soil entrapment						
j. Complete risk/benefit assessments for selected methods of rescue and time constraints						
k. Provide basic medical care and immobilization techniques						
l. Package a victim						
m. Remove a packaged victim						
22. Terminate a trench rescue operation.	1st Evaluation			2nd Evaluation		
	Course Code	Date	Initials	Course Code	Date	Initials
a. Describe how to disassemble support systems						
b. Describe how to terminate trench operations						
c. Identify the techniques to keep the scene safe upon leaving the area						
d. Describe the overall goals of a critical incident stress debriefing						
e. Remove equipment and protective systems						
f. Use trench safety protocols						
g. Use site control equipment and methods						
h. Clean and service equipment						
i. Complete notification and documentation						
j. Perform an incident debriefing						

Completion Requirements

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

Experience

The candidate meets the following experience requirement.

- Have a minimum of three years' full-time or six years' part-time/volunteer experience as a fire fighter performing rescue duties within a recognized fire agency in California

Agency	Experience	Start Date	End Date

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 completed this task book within three years of its initiation date. Otherwise, a candidate must initiate a new task book using the curriculum'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 Trench Rescue 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 Trench Rescue 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: _____