

State of Oregon
Department of Public Safety Standards and Training

NFPA Machinery Rescue
Task Book

Task Book Assigned To:	
Name	DPSST Fire Service #
Agency Name	Date Initiated
Signature of Agency Head or Training Officer	Date Completed

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Additional copies of this document may be downloaded from the DPSST web site:
<http://www.oregon.gov/DPSST/FC/FireCertFormFree.shtml>

Revised January 2018

NFPA Machinery Rescue Signature Page

A copy of the applicant's training must be included with the DPSST NFPA Technical Rescuer application when applying for **NFPA Machinery Rescue** certification. Only a certified NFPA Technical Rescuer in that specialty area may sign off the Task Book.

Attest: The information contained in this Task Book is true and correct to the best of my knowledge. I understand that falsification of information on this document is subject to penalty under ORS 162.055, et al, and ORS 162.305 and is cause to deny or revoke DPSST fire service professional certification(s).

<u>NFPA Machinery Rescue Task Book Assigned To:</u>		
_____	_____	_____
Signature	Printed Name	DPSST Fire Service #
_____		_____
Agency Name		Date Initiated
_____	_____	_____
Signature of Certified Technician	Printed Name of Certified Technician	Date Completed

Technical Rescuer Evaluators: Each Evaluator must document the following information:

<u>Evaluator: Level of Technical Rescuer certification:</u>			<input type="checkbox"/> Tower	<input type="checkbox"/> Rope - Operations	<input type="checkbox"/> Rope – Technician				
<input type="checkbox"/> Structural Collapse	<input type="checkbox"/> Confined Space	<input type="checkbox"/> Vehicle	<input type="checkbox"/> Trench	<input type="checkbox"/> Machinery					
<input type="checkbox"/> Surface Water	<input type="checkbox"/> Swiftwater	<input type="checkbox"/> Dive	<input type="checkbox"/> Surf	<input type="checkbox"/> Watercraft					
<u>Sections of chapter signed off by Evaluator:</u>									
___5	___6	___7	___8	___11	___12	___16	___17	___18	___20
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Signature of Evaluator		Printed Name of Evaluator		DPSST Fire Number		Date			

<u>Evaluator: Level of Technical Rescuer certification:</u>			<input type="checkbox"/> Tower	<input type="checkbox"/> Rope - Operations	<input type="checkbox"/> Rope – Technician				
<input type="checkbox"/> Structural Collapse	<input type="checkbox"/> Confined Space	<input type="checkbox"/> Vehicle	<input type="checkbox"/> Trench	<input type="checkbox"/> Machinery					
<input type="checkbox"/> Surface Water	<input type="checkbox"/> Swiftwater	<input type="checkbox"/> Dive	<input type="checkbox"/> Surf	<input type="checkbox"/> Watercraft					
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_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
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_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Signature of Evaluator		Printed Name of Evaluator		DPSST Fire Number		Date			

Task Book Qualification Record Books (Task Book) have been developed for various certification levels within the Oregon Department of Public Safety Standards and Training (DPSST) system. Each Task Book lists the job performance requirements (JPRs) for the specific certification level in a format that allows a candidate to be trained and evaluated during three (3) sequential sessions. Successful performance of all tasks, as observed and recorded by a qualified and approved evaluator will result in the candidate's eligibility for DPSST certification.

To become certified at a specific level, the applicant must successfully complete the job performance requirements in sequence. Before a job performance evaluation can be taken, all requisite knowledge and skills must be satisfied. In addition, all relative task book evaluations must be checked off by the evaluator. When all prescribed requirements have been met, an application for Certification will be forwarded to DPSST. All certificates are mailed to the Training Officer at his/her Fire Service Agency.

TASK BOOK SPECIFICATIONS:

To successfully complete this task book, only an evaluator certified as an NFPA Machinery Rescue may sign off on the JPR's. 'Requisite Knowledge' sections may be completed during class and signed by the instructor. 'Requisite Skills' sections may be conducted and signed at the candidate's fire agency.

NFPA TASK BOOK INFORMATION:

The JPRs covered in this Task Book meet or exceed all NFPA published standards for this certification level at the time of this publication. Mention of NFPA and its standards do not, and are not intended as adoption of—or reference to—NFPA standards. For more information on the complete job performance requirements and data, see the individual DPSST Task Book for that certification level.

NOTE TO FIRE SERVICE AGENCIES:

These JPRs serve as general guidelines. As such they are not intended to replace specific sequences of apparatus or equipment operation that may be outlined by manufacturer specifications. At all times, standard operating procedures of the Fire Service Agency in which the evaluation is being conducted will govern. Fire Service Agencies should have available for evaluators a copy of manufacturer specifications and the Fire Service Agencies standard operational guidelines.

***A vertical line (|) to the left of the document indicates a change from the previous standard.**

HOW TO EVALUATE PERFORMANCE:

Each JPR has one to three corresponding box to the right in which to confirm a candidate's success. The evaluator must indicate successful passing by the candidate of each JPR by initialing and dating (see example on the following page).

Example:

12.1.1 Recognize the need for technical rescue resources at a machinery incident, given AHJ guidelines, an operations- or technician-level machinery incident or simulation, 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/incident action plan.



TASK BOOK QUALIFICATION RECORD

FOR THE CERTIFICATION LEVEL OF

NFPA Machinery Rescue

Prior to becoming certified in this position, the sample candidate must successfully complete the following Job Performance Requirements (JPR). For each JPR there are requisite knowledge and skill requirements. The evaluator must initial and date in the box provided to indicate the meeting of those requirements before the firefighter may proceed.

12.1 Awareness Level. The job performance requirements defined in 12.1.1 through 12.1.4 shall be met prior to awareness-level qualification in machinery rescue.

12.1.1 Recognize the need for technical rescue resources at a machinery incident, given AHJ guidelines, an operations- or technician-level machinery incident or simulation, 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/incident action plan.

(A) Requisite Knowledge. Operational protocols, specific planning forms, types of machinery common to the AHJ boundaries, machinery hazards, incident support operations and resources, machinery anatomy, and fire suppression and safety measures.

(B) Requisite Skills. The ability to apply operational protocols, select specific planning forms based on the types of machinery, identify and evaluate various types of machinery within the AHJ boundaries, request support and resources, identify machinery anatomy, and determine the required fire suppression and safety measures.

12.1.2 Establish scene safety zones, given prearrival instructions from operations- or technician-level resources, scene security barriers, incident location, incident information, and personal protective equipment (PPE), so that action hot, warm, and cold safety zones are designated; zone perimeters are consistent with incident requirements; perimeter markings can be recognized and understood by others; zone boundaries are communicated to incident command; and only authorized personnel are allowed access to the rescue scene.

(A) **Requisite Knowledge.** Use and selection of PPE, barrier control flow and concepts, types of control devices and tools, types of existing and potential hazards, methods of hazard mitigation, organizational standard operating procedure, and types of zones and staffing requirements.

(B) **Requisite Skills.** The ability to select and use PPE, apply traffic control concepts, position traffic control devices, identify and mitigate existing or potential hazards, and apply zone identification and personal safety techniques.

12.1.3 Identify the needed support resources, given a specific type of rescue incident, so that a resource cache is managed, scene lighting is provided for the tasks to be undertaken, environmental concerns are managed, personnel rehabilitation is facilitated, and the support operation facilitates rescue operational objectives.

(A) **Requisite Knowledge.** Equipment organization and tracking methods, lighting resource type(s), shelter and thermal control options, and rehab criteria.

(B) **Requisite Skills.** The ability to track equipment inventory, identify lighting resources and structures for shelter and thermal protection, select rehab areas, and manage personnel rotations.

12.1.4 Size up an incident, given an incident, background information and applicable reference materials, so that the operational mode is defined; resource availability, response time, and types of rescues are determined; the number of victims are identified; the last reported location of all victims are established; witnesses and reporting parties are identified and interviewed; resource needs are assessed; search parameters are identified; and information required to develop an incident action plan is obtained.

(A) **Requisite Knowledge.** Types of reference materials and their uses, risk benefit assessment, availability and capability of the resources, elements of an action plan and related information, relationship of size-up to the incident management system (IMS), and information gathering techniques and how that information is used in the size-up process.

(B) Requisite Skills. The ability to read specific rescue reference materials, interview and gather information, relay information, manage witnesses, and use information sources.

12.2 Operations Level. The job performance requirements defined in Section 5.2, Section 12.1, and 12.2.1 through 12.2.11 shall be met prior to operations-level qualification in machinery rescue.

12.2.1* Plan for a machinery incident, and conduct an initial and ongoing size-up, given agency guidelines, planning forms, and an operations-level machinery incident or simulation, so that a standard approach is used during training and operational scenarios; emergency situation hazards are identified; isolation methods and scene security measures are considered; fire suppression and safety measures are identified; machinery stabilization needs are evaluated; and resource needs are identified and documented for future use.

(A) Requisite Knowledge. Operational protocols, specific planning forms, types and machinery common to the AHJ boundaries, machinery hazards, incident support operations and resources, machinery anatomy, and fire suppression and safety measures.

(B) Requisite Skills. The ability to apply operational protocols, select specific planning forms based on the types of machinery, identify and evaluate various types of machinery within the AHJ boundaries, request support and resources, identify machinery anatomy, and determine the required fire suppression and safety measures.

12.2.2* Establish “scene” safety zones, given scene security barriers, incident location, incident information, and PPE, so that hot, warm, and cold safety zones are designated; zone perimeters are consistent with incident requirements; perimeter markings can be recognized and understood by others; zone boundaries are communicated to incident command; and only authorized personnel are allowed access to the rescue scene.

(A) **Requisite Knowledge.** Use and selection of PPE, traffic control flow and concepts, types of control devices and tools, types of existing and potential hazards, methods of hazard mitigation, organizational standard operating procedure, and types of zones and staffing requirements.

(B) **Requisite Skills.** The ability to select and use PPE, apply hazard control concepts, identify and mitigate existing or potential hazards, and apply zone identification and personal safety techniques.

12.2.3* Establish fire protection, given an extrication incident and fire control support, so that fire and explosion potential is managed and fire hazards and rescue objectives are communicated to the fire support team.

(A) **Requisite Knowledge.** Types of fire and explosion hazards, IMS, types of extinguishing devices, agency policies and procedures, types of flammable and combustible substances and types of ignition sources, and extinguishment or control options.

(B) **Requisite Skills.** The ability to identify fire and explosion hazards, operate within the IMS, use extinguishing devices, apply fire control strategies, and manage ignition potential.

12.2.4* Stabilize a small or simple machine, given a machinery tool kit and PPE, so that the machinery is prevented from moving during the rescue operations; entry, exit, and tool placement points are not compromised; anticipated rescue activities will not compromise machinery stability; selected stabilization points are structurally sound; stabilization equipment can be monitored; and the risk to rescuers is minimized.

(A) **Requisite Knowledge.** Types of stabilization devices, mechanism of small machinery movement, types of stabilization points, types of stabilization surfaces, AHJ policies and procedures, and types of machinery construction components as they apply to stabilization.

(B) **Requisite Skills.** The ability to apply and operate stabilization devices.

12.2.5* Isolate potentially harmful energy sources, given machinery tool kit and PPE, so that all hazards are identified; systems are managed; beneficial system use is evaluated; and hazards to rescue personnel and victims are minimized.

(A) Requisite Knowledge. Types and uses of PPE, types of energy sources, system isolation methods, specialized system features, tools for disabling hazards, and policies and procedures of the AHJ.

(B) Requisite Skills. The ability to select and use task- and incident-specific PPE, identify hazards, operate beneficial systems in support of tactical objectives, and operate tools and devices for securing and disabling hazards.

12.2.6 Determine small machinery access and egress points, given the structural and damage characteristics and potential victim location(s), so that victim location(s) is identified; entry and exit points for victims, rescuers, and equipment are designated; flows of personnel, victims(s), and equipment are identified; existing entry points are used; time constraints are factored; selected entry and egress points do not compromise stability; chosen points can be protected; equipment and victim stabilization are initiated; and AHJ safety and emergency procedures are enforced.

(A) Requisite Knowledge. Small machinery construction/features, entry and exit points, routes and hazards operating systems, AHJ standard operating procedure, and emergency evacuation and safety signals.

(B) Requisite Skills. The ability to identify entry and exit points and probable victim locations, and to assess and evaluate impact of machine stability on the victim.

12.2.7 Create access and egress openings for rescue from a small or simple machine, given a machinery tool kit, specialized tools and equipment, PPE, and an assignment, so that the movement of rescuers and equipment complements victim care and removal; an emergency escape route is provided; the technique chosen is expedient; victim and rescuer protection is afforded; and stability is maintained.

(A) **Requisite Knowledge.** Small machinery construction and features; electrical, mechanical, hydraulic, pneumatic, and alternative entry and exit equipment; points and routes of ingress and egress; techniques and hazards; agency policies and procedures; and emergency evacuation and safety signals.

(B) **Requisite Skills.** The ability to identify common small machinery construction features, select and operate tools and equipment, apply tactics and strategy based on assignment, apply victim care and stabilization devices, perform hazard control based on techniques selected, and demonstrate safety procedures and emergency evacuation signals.

12.2.8 Disentangle victim(s), given an extrication involving a small or simple machine, a machinery tool kit, PPE, and specialized equipment, so that undue victim injury is prevented; victim protection is provided; and stabilization is maintained.

(A) **Requisite Knowledge.** Tool selection and application, stabilization systems, protection methods, disentanglement points and techniques, and dynamics of disentanglement.

(B) **Requisite Skills.** The ability to operate disentanglement tools, initiate protective measures, identify and eliminate points of entrapment, and maintain incident stability and scene safety.

12.2.9 Identify potential emergency events in buildings where mechanical equipment exists, such as elevators. Determine entry and egress points, given the structural and damage characteristics and potential victim location(s), so that victim location(s) is identified; designate entry and exit points for victim(s) and rescuer(s); chosen points can be protected; determine the need for a specialized elevator technician; stabilize and isolate all machinery involved, given an elevator tool kit and PPE; control the hazards presented by the release of fluids or mechanical release devices; determine elevator position to optimize the removal of victim(s); secure all elevators and weight systems in common hoistways so that chosen points do not compromise the removal of a victim or rescuer; equipment and victim stabilization are initiated; package and remove victim(s) so that undue injury is prevented; and AHJ safety points are enforced.

(A) **Requisite Knowledge.** Types of stabilization devices, mechanism of elevator movement and travel, types of stabilization points, types of energy sources, system isolation and release methods, entry and exit points, specialized system features, tool selection and application, and special features of elevator systems.

(B) **Requisite Skills.** The ability to identify entry and exit points and probable victim locations, the ability to identify common elevator control devices, construction and energy sources, perform hazard control based on techniques selected, apply tactics and strategy based on assignment, select and operate tools and equipment specific to elevator rescue, apply victim care and stabilization devices, and demonstrate safety procedures.

12.2.10 Remove a packaged victim to a designated safe area, as a member of a team, given a victim transfer device, a designated egress route, and PPE, so that the team effort is coordinated; the designated egress route is used; the victim is removed without compromising victim packaging; undue injury is prevented; and stabilization is maintained.

(A) **Requisite Knowledge.** Patient handling techniques; operation of IMS; types of immobilization, packaging, and transfer devices; types of immobilization techniques; and uses of immobilization devices.

(B) **Requisite Skills.** Use of immobilization, packaging, and transfer devices for specific situations; immobilization techniques; application of medical protocols and safety features to immobilize, package, and transfer; and use of all techniques for lifting the patient.

12.2.11* **Terminate an incident, given PPE specific to the incident, isolation barriers, and tool kit, 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 postincident analysis and critique are considered, and command is terminated.**

(A) **Requisite Knowledge.** PPE characteristics, hazard and risk identification, isolation techniques, statutory requirements identifying responsible parties, accountability system use, reporting methods, postincident analysis techniques.

(B) **Requisite Skills.** Selection and use of task and hazard specific PPE, decontamination, use of barrier protection techniques, data collection and recordkeeping/reporting protocols, postincident analysis activities.

12.3 Technician Level. The job performance requirements defined in Section 12.2 and 12.3.1 through 12.3.5 shall be met prior to technician-level qualification in machinery rescue.

12.3.1* Plan for a large machinery incident, and conduct initial and ongoing size-up, given agency guidelines, planning forms, and operations-level machinery incident or simulation, so that a standard approach is used during training and operational scenarios; emergency situation hazards are identified; isolation methods and scene security measures are considered; fire suppression and safety measures are identified; machinery stabilization needs are evaluated; and resource needs are identified and documented for future use.

(A) **Requisite Knowledge.** Operational protocols, specific planning forms, types of large, commercial/heavy machinery common to the AHJ boundaries, machinery hazards, incident support operations and resources, machinery anatomy, and fire suppression and safety measures.

(B) Requisite Skills. The ability to apply operational protocols, select specific planning forms based on the types of large machinery, identify and evaluate various types of large machinery within the AHJ boundaries, request support and resources, identify large machinery anatomy, and determine the required fire suppression and safety measures. Level I rescue skills are applicable to vehicle or machinery events that involve simple or small machinery, are limited to digital entrapment of the victim, and involve environments where rescuer intervention does not constitute a high level of risk to either the victim or rescuers based on the environment or other factors. Level II skills apply to those incidents that involve heavy machinery, complex extrication processes, multiple uncommon concurrent hazards, or more than digital entrapment of a victim.



12.3.2* Stabilize large machinery, given a machinery tool kit and PPE, so that the machinery is prevented from moving during the rescue operations; entry, exit, and tool placement points are not compromised; anticipated rescue activities will not compromise machinery stability; selected stabilization points are structurally sound; stabilization equipment can be monitored; and the risk to rescuers is minimized.



(A) Requisite Knowledge. Types of stabilization devices, mechanism of machinery movement, types of stabilization points, types of stabilization surfaces, AHJ policies and procedures, and types of machinery construction components as they apply to stabilization.



(B) Requisite Skills. The ability to apply and operate stabilization devices.



12.3.3 Determine large machinery access and egress points, given the structural and damage characteristics and potential victim location(s), so that victim location(s) is identified; entry and exit points for victims, rescuers, and equipment are designated; flows of personnel, victim(s), and equipment are identified; existing entry points are used; time constraints are factored; selected entry and egress points do not compromise machinery stability; chosen points can be protected; equipment and victim stabilization are initiated; and AHJ safety and emergency procedures are enforced.



(A) **Requisite Knowledge.** Large machinery construction/features, entry and exit points, routes and hazards, operating systems, AHJ standard operating procedure, and emergency evacuation and safety signals.

(B) **Requisite Skills.** The ability to identify entry and exit points and probable victim locations and to assess and evaluate impact of large machinery stability on the victim(s).

12.3.4 Create access and egress openings for rescue from large machinery, given a machinery tool kit, specialized tools and equipment, PPE, and an assignment, so that the movement of rescuers and equipment complements victim care and removal; an emergency escape route is provided; the technique chosen is expedient; victim and rescuer protection is afforded; and stability is maintained.

(A) **Requisite Knowledge.** Large machinery construction and features; electrical, mechanical, hydraulic, and pneumatic systems; alternative entry and exit equipment; points and routes of ingress and egress; techniques and hazards; agency policies and procedures; and emergency evacuation and safety signals.

(B) **Requisite Skills.** The ability to identify large machinery construction features, select and operate tools and equipment, apply tactics and strategy based on assignment, apply victim care and stabilization devices, perform hazard control based on techniques selected, and demonstrate safety procedures and emergency evacuation signals.

12.3.5 Disentangle victim(s), given an extrication incident, a machinery tool kit, PPE, and specialized equipment, so that undue victim injury is prevented; victim protection is provided; and stabilization is maintained.

(A) **Requisite Knowledge.** Tool selection and application, operation of stabilization systems, protection methods, disentanglement points and techniques, and dynamics of disentanglement.

(B) Requisite Skills. The ability to operate disentanglement tools, initiate protective measures, identify and eliminate points of entrapment, and maintain incident stability and scene safety.

