

**PROPOSED DRAFT**

**OF**

**NFPA 1005**

**Standard for Professional Qualifications  
for Marine Fire Fighting for Land-Based  
Fire Fighters**

**2007 Edition**

The attached draft is a Committee working document. It is being circulated to solicit input from the public prior to publication as a Report on Proposals (ROP) (formerly TCR).

To submit a proposal, please use the proposal form that is attached to this draft. Proposals must be received by the Secretary, Standards Council, at NFPA, by **5:00 PM EDST on Friday, May 27, 2005**.

Please contact the Standards Administration Department or the Staff Liaison for this document, Frank Florence, if you have any questions on the document.

# NFPA Technical Committee Document Proposal Form

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3. Proposal. (Include proposed new or revised wording, or identification of wording to be deleted.) Note: Proposed text should be in legislative format, that is, use underscore to denote wording to be inserted (inserted wording) and strike-through to denote wording to be deleted (~~deleted wording~~).

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4. Statement of Problem and Substantiation for Proposal. Note: State the problem that will be resolved by your recommendation. Give the specific reason for your proposal including copies of tests, research papers, fire experience, etc. If more than 200 words, it may be abstracted for publication.

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Contact NFPA Codes and Standards Administration for final date for receipt of proposals on a specific document.  
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1. Type or print legibly in black ink.
2. Indicate the number, edition year, and title of the document. Also indicate the specific section or paragraph that the proposed amendment applies to.
3. Check the appropriate box to indicate whether this proposal recommends adding new text, revising existing text, or deleting text.
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If supplementary material (*photographs, diagrams, reports, etc.*) is included, you may be required to submit sufficient copies for all members and alternates of the technical committee. The technical committee is authorized to abstract the "Statement of Problem and Substantiation for Proposal" if it exceeds 200 words for publication in the Report on Proposals.

NOTE: The NFPA Regulations Governing Committee Projects in Paragraph 4-3.3 states: Each proposal shall be submitted to the Council Secretary and shall include the following:

- (a) Identification of the submitter and his or her affiliation (*i.e. technical committee, organization, company*), where appropriate
- (b) Identification of the document, edition of the document, and paragraph of the document to which the proposal is directed
- (c) Proposed text of the proposal, including the wording to be added, revised (and how revised), or deleted
- (d) Statement of the problem and substantiation for proposal
- (e) Signature of the submitter
- (f) Two copies of any document(s) (other than an NFPA document) being proposed as a reference standard or publication (see 3-3.7)

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**DRAFT**

**Standard for Professional Qualifications for Marine  
Fire Fighting for Land-Based Fire Fighters**

**Chapter 1 Administration**

**1.1 Scope.** This standard identifies the minimum job performance requirements for marine fire fighters responsible for firefighting operations aboard commercial/military vessels over 50 feet involved in fire that call at North American ports or that are signatory to the International Safety of Life at Sea (SOLAS) agreement.

**1.2 Purpose.** The purpose of this standard shall be to insure that land-based fire fighters meeting the requirements of this standard who are responsible for firefighting operations aboard commercial/military vessels over 50 feet involved in fire that call at North American ports or that are signatory to the International Safety of Life at Sea (SOLAS) agreement are qualified.

**1.3 General**

**1.3.1** The job performance requirements shall be accomplished in accordance with the requirements of the authority having jurisdiction and NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*.

**1.3.2\*** It is not required for the job performance requirements to be mastered in the order they appear. The authority having jurisdiction shall establish instructional priority and the training program content to prepare individuals to meet the job performance requirements of this standard.

*A.1.3.2 See Annex B for additional information regarding the use of job performance requirements for training and evaluation.*

**1.3.3** Performance of each requirement of this standard shall be evaluated by individuals approved by the authority having jurisdiction.

*A.1.3.3 It is recommended, where practical, that evaluators be individuals who were not directly involved as instructors for the requirement being evaluated.*

**1.3.4** In order to meet the requirements for Marine Fire Fighter I , the Fire Fighter II shall meet the general knowledge and skill requirements and the job performance requirements of Chapter 4 of this standard.

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*A.1.3.4 Many jurisdictions choose to deliver training in modules that allow personnel to be trained in certain fire fighter tasks and to perform limited duties under direction supervision prior to meeting the complete requirements for Marine Fire Fighter I certification.*

**1.3.5** In order to meet the requirements for Marine Fire Fighter Level II, the Marine Fire Fighter Level I shall meet the general knowledge and skill requirements and the job performance requirements of Chapter 5 of this standard.

**1.3.6** In order to meet the requirements for Marine Fire Fighter Level III, the Marine Fire Fighter II shall meet the general knowledge and skill requirements and the job performance requirements of Chapter 6 of this standard.

**1.3.8** Wherever in this standard the terms *rules, regulations, procedures, supplies, apparatus, or equipment* are referred to, it is implied that they are those of the authority having jurisdiction.

**1.4 Units.** In this standard, values for measurement are followed by an equivalent in SI units, but only the first stated value shall be regarded as the requirement. Equivalent values in SI units shall not be considered as the requirement, as these values can be approximate. (See Table 1.4)

**Table 1.4 goes here**

## **Chapter 2 Referenced Publications**

**2.1 General.** The documents or portions thereof listed in this chapter are referenced within this standard and shall be considered part of the requirements of this document.

**2.2 NFPA Publications.** National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101

NFPA 1001, *Standard for Fire Fighter Professional Qualifications*, 2002 edition.

NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*, 2002 edition.

**2.3 Other Publications. (Reserved)**

## **Chapter 3 Definitions**

**3.1\* General.** The definitions contained in this chapter shall apply to the terms used in this standard. Where terms are not included, common usage of the terms shall apply.

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*A.3.1 Definitions of action verbs used in job performance requirements in this document are based on the first definition of the word found in Webster's Third New International Dictionary of the English Language.*

## **3.2 NFPA Official Definitions**

**3.2.1\* Approved.** Acceptable to the authority having jurisdiction.

*A.3.2.1 Approved. The National Fire Protection Association does not approve, inspect, or certify any installations, procedures, equipment, or materials; nor does it approve or evaluate testing laboratories. In determining the acceptability of installations, procedures, equipment, or materials, the authority having jurisdiction may base an acceptance on compliance with NFPA or other appropriate standards. In the absence of such standards the authority may require evidence of proper installation, procedure or use. The authority having jurisdiction may also refer to the listing or labeling practices of an organization that is concerned with product evaluations and is thus in a position to determine compliance with appropriate standards for the current production of listed items.*

**3.2.2 Authority Having Jurisdiction (AHJ).** The organization, office, or individual responsible for approving equipment, materials, an installation, or a procedure.

*A.3.2.2 Authority Having Jurisdiction. The phrase "authority having jurisdiction," or its acronym AHJ, is used in NFPA documents in a broad manner, since jurisdictions and approval agencies vary, as do their responsibilities. Where public safety is primary, the authority having jurisdiction may be a federal, state, local, or other regional department or individual such as a fire chief; fire marshal; chief of a fire prevention bureau, labor department, or health department; building official; electrical inspector; or others having statutory authority. For insurance purposes, and insurance inspection department, rating bureau, or other insurance company representative may be the authority having jurisdiction. In many circumstances, the property owner or his or her designated agent assumes the role of the authority having jurisdiction; at government installations, the commanding officer or department official may be the authority having jurisdiction.*

**3.2.3 Listed.** Equipment, materials, or services included in a list published by an organization that is acceptable to the authority having jurisdiction and concerned with evaluation of products or services, that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services and whose listing states that either the equipment, materials, or service meets appropriate designated standards or has been tested and found suitable for a specified purpose.

*A.3.2.3 Listed. The means for identifying listed equipment may vary for each organization concerned with product evaluation; some organizations do not recognize equipment as listed unless it is also labeled. The authority having*

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*jurisdiction should utilize the system employed by the listing organization to identify a listed product.*

### **3.3 General Definitions**

**3.3.1 Bow.** The front end of a boat or vessel.

**3.3.2 Control Zones.** The areas at an incident that are designated based upon safety and the degree of hazard to the fire fighter.

**3.3.2.1 Cold Zone.\*** The control zone of an incident that contains the command post and other support functions deemed necessary to control the incident.

*A.3.3.2.1 Personnel operating in the cold zone are not exposed to the products of combustion, hazardous materials, or other inherent hazards created by the incident.*

**3.3.2.2 Hot Zone.** The control zone of an incident that includes the fire area or the area immediately surrounding hazardous materials and that extends far enough to prevent adverse effects from fire, products of combustion and/or hazardous materials releases to personnel outside the zone.

**3.3.2.3 Warm Zone.** The control zone at an incident that surrounds the hot zone and in which the fire fighter may be exposed to low levels of the products of combustion requiring standard fire fighter personal protective equipment for protection.

**3.3.3 Draft.** (1) The vertical distance between the water surface and the lowest point of a vessel. (2) The depth of water a vessel needs in order to float.

**3.3.4 Fire Department.** An organization providing rescue, fire suppression, and related activities. The term “fire department” shall include any public, government, private, industrial, or military organization engaging in this type of activity.

**3.3.5 Fire Fighter II.** A person who has met the requirements of Chapters 1 through 6 of NFPA 1001, *Standard for Fire Fighter Professional Qualifications*.

**3.3.6 Hull.** The main structural frame or body of a vessel below the weather deck.

**3.3.7 Immediately Dangerous to Life and Health (IDLH).** Any atmosphere that poses an immediate hazard to life or produces immediate irreversible, debilitating effects on health. A companion measurement to the PEL, IDLH concentrations represent concentrations above which respiratory protection should be required. IDLH is expressed in ppm or mg/m<sup>3</sup>.

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**3.3.8 Initial Action Plan.** A verbal or written management plan developed by the initial Incident Commander to an incident and upon which initial incident control actions are based.

**3.3.9 Incident Action Plan.** A written management plan developed or approved by the Incident Commander that establishes the overall strategic decisions and assigns tactical objectives for the incident.

**3.3.10 Job Performance Requirement (JPR).** A statement that describes a specific job task, lists the items necessary to complete the task, and defines measurable or observable outcomes and evaluation areas for the specific task.

**3.3.11 List.** The continuous lean or tilt of a vessel to one side due to an imbalance of weight within the vessel.

**3.3.12 Marine Facility.** Any land-based facility that incorporates buildings, personnel, equipment, docks, moorings, and other features to support the docking, loading, unloading, maintenance, and servicing of marine vessels.

**3.3.13 Marine Fire Fighter I.** A land-based Fire Fighter II at the first level of progression as defined in Chapter 4, who has demonstrated the knowledge and skills to respond to an incident and operate in the proximity of a vessel or dock area or to provide support functions in the cold and warm zone on board a vessel.

**3.3.14 Marine Fire Fighter II.** A land-based Fire Fighter II at the second level of progression as defined in Chapter 5, who has demonstrated the knowledge and skills to respond to an incident and operate on a vessel while performing defensive and offensive functions inside the warm and hot zone on board a vessel.

**3.3.15 Marine Incident.** Any fire, explosion, hazardous material, utility, or other type of emergency incident on or in the vicinity of a marine vessel and/or facility to which a fire department may be expected to respond.

**3.3.16 Master.** The captain of a merchant ship.

**3.3.17 Mate.** A deck officer on a merchant ship ranking below the master.

**3.3.18 Mooring.** (1) Permanent anchor equipment (attached by a chain to a buoy) to which a vessel may connect a line, wire, or chain, eliminating the need to use the vessel's anchor. (2) The act of securing a vessel. (3) The location where a vessel is berthed.

**3.3.19 Personal Protective Clothing.** The full compliment of garments fire fighters are normally required to wear while on an emergency scene including turnout coat, protective trousers, fire-fighting boots, fire-fighting gloves, a protective hood, and a helmet with eye protection.

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**3.3.20 Personal Protective Equipment.** Consists of full personal protective clothing, plus a self-contained breathing apparatus (SCBA) and a personal alert safety system (PASS) device.

**3.3.21 Port.** General area of a shore establishment having facilities for the landing, loading/unloading, and maintenance of vessels; harbor with piers.

**3.3.22 Port Side.** The left-hand side of a ship when facing forward.

**3.3.23 Port State Control.** The government authority having ultimate legal jurisdiction over a port or jurisdictional waterways.

**3.3.24 Procedure.** The series of actions, conducted in an approved manner and sequence, designed to achieve an intended outcome.

**3.3.25 Requisite Knowledge.** Fundamental knowledge one must have in order to perform a specific task.

**3.3.26 Requisite Skills.** The essential skills one must have in order to perform a specific task.

**3.3.27 Secondary Line.** A back-up hose line and crew that accompanies the primary attack line and crew into the Hot Zone at an incident.

**3.3.28 Ship's Agent.** A person or firm who transacts all business in a port on behalf of ship-owners or charterers.

**3.3.29 Ship's Engineer.** Officer on a mechanically propelled vessel charged with maintenance and efficient operation of main engines and, usually, all powered machinery on board.

**3.3.30 Starboard Side.** The right-hand side of a ship as one faces forward

**3.3.31 Stern.** The after end of boat or vessel.**3.3.32 Structural Fire Fighting.** The activities of rescue, fire suppression, and property conservation in buildings, enclosed structures, aircraft interiors, vehicles, vessels, aircraft or like properties that are involved in a fire or emergency situation.

**3.3.33 Task.** A specific job behavior or activity.

**3.3.34 Team.** Two or more individuals who have been assigned a common task and are in proximity to and in direct communications with each other, coordinate their activities as a work group, and support the safety of one another.

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**3.3.35 Trim.** (1) The longitudinal angle of a vessel. (2) The relation of the vessel's floating attitude to the water considered from front to back. (3) The difference between fore and aft draft readings. (4) To cause a vessel to assume a desirable position in the water by arrangement of ballast, cargo, or passengers.

**3.3.36 Vessel.** The general term for all craft capable of floating on water and larger than a rowboat.

## **Chapter 4 Marine Fire Fighter I**

### **4.1 General.**

**4.1.1** In order to meet the requirements for Marine Fire Fighter I level, the Fire Fighter II shall meet the general knowledge requirements in 4.1.1.1, the general skill requirements in 4.1.1.2, and the job performance requirements defined in Sections 4.2 through 4.5 of this standard and the requirements defined in Chapter 6, Fire Fighter II of NFPA 1001, *Standard for Fire Fighter Professional Qualifications*.

#### **4.1.1.1 General Knowledge Requirements.**

Marine vessel types and potential products to be carried on those vessels; marine facility types and potential vessels and products that may be present in those facilities.

#### **4.1.1.2 General Skill Requirements.**

This duty involves no requirements for the Marine Fire Fighter I.

**4.2 Access.** This duty involves making safe access to the scene of an incident and evaluating and securing the scene on or around an involved vessel so that it may be safely boarded, if necessary, according to the following job performance requirements.

**4.2.1\*** Locate and access the scene of an incident, given an incident, preincident plans, a facility map, navigational charts, a specified response vehicle, and/or other aids used by the authority having jurisdiction, so that the scene of the incident is identified and potential delays and/or hazards to the response are identified and avoided.

*A.4.2.1 The Marine Fire Fighter I does not necessarily have to be the person actually driving the apparatus to achieve this objective. The Marine Fire Fighter I may simply provide direction to the apparatus driver/operator that leads to the placement of the apparatus at the desired location.*

**(A) Requisite Knowledge.** Hazards associated with marine facilities and vessels; vehicle operation regulations within the marine facility; appropriate access points for marine facilities; marine facility layout.

**(B) Requisite Skills.** Reading and interpreting maps, plans, and navigational charts.

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**4.2.2** Board a vessel, given a vessel, personal protective equipment, a ladder, gangway, or other access device, and an assignment, so that hazards are assessed, the access device is positioned and secured according to procedures, and the personnel and equipment necessary to perform the assignment are transferred to the vessel without falling or equipment being dropped.

**(A) Requisite Knowledge.** The effect of tide, wakes, currents, and/or vessel movement on laddering or accessing a vessel; what constitutes a safe foundation for ladder placement on a marine vessel; reliable structural components on the vessel for top placement of a ground ladder; positioning of ladders and gangways; effects of water depth and draft.

**(B) Requisite Skills.** Climbing techniques for gangways; the ability to carry, raise, and climb ground ladders in a marine environment.

**4.2.3** Access a specified location on a vessel, given a vessel, a plan of the vessel, and an assignment, so that hazards are assessed, the location is identified and accessed, and the personnel and equipment necessary to perform the assignment are transferred from the vessel boarding location to the designated location without falling or equipment being dropped.

**(A) Requisite Knowledge.** Vessel construction terminology; marine terminology (bow, stern, port, starboard, etc.); hazards associated with various locations on a vessel.

**(B) Requisite Skills.** Negotiating vessel ladders, decks, and corridors; operating vessel doors and hatches.

**4.3 Response.** This duty involves the placement of apparatus and equipment at an incident, establishing water supply for fire fighting operations, rescuing personnel onboard the vessel, establishing effective incident communications, protecting exposures and cargo, controlling utilities, and assessing and controlling vessel stability and movement, according to the following job performance requirements.

**4.3.1\*** Determine the position for apparatus placement at an incident, given an incident in a specified location, an assignment, an apparatus, preincident plans, a facility map, standard operating procedures, or other resources used by the authority having jurisdiction, so that hazards are avoided, the apparatus is spotted for the given assignment according to procedures, and access for later arriving vehicles is not unnecessarily blocked.

**(A) Requisite Knowledge.** Water supply sources for marine incidents; hazards within the port or facility; designated vehicle access routes within the port or facility; vehicle length, height, and weight limits; safe vehicle placement relative to the vessel and mooring lines; ability to read preincident plans and maps of marine facilities; strategic and tactical positioning for various types of fire apparatus.

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**(B) Requisite Skills.** Reading and interpreting maps and plans on marine facilities; recognizing hazards that are present in a marine environment.

*A.4.3.1 The Marine Fire Fighter I does not necessarily have to be the person driving the apparatus to achieve this objective. The Marine Fire Fighter I may simply provide direction to the apparatus driver/operator that leads to the placement of the apparatus at the desired location.*

**4.3.2** Establish water supply at an incident, given a static or pressurized water supply source, a pumping-type fire apparatus, appropriate hose, adaptors, international shore connections, and other fittings, and an assignment, so that an uninterrupted supply of water is established and all hoses are connected and positioned according to procedures.

**(A) Requisite Knowledge.** The location and capacity of hydrants at marine facilities; the availability and capabilities of alternative water supply sources such as tanker/tenders, fire boats, and fire pumps; safe drafting locations relative to the location of the involved vessel; the effects of tidal movements on drafting operations.

**(B) Requisite Skills.** Connecting hoses to fire boats and vessel inlets; placing hard intake hoses over dock edges or other drafting locations; stretching supply hoses to the vessel.

**4.3.3** Remove a victim from a vessel as a member of a team, given a vessel, a team, an assignment, a victim, a ladder or gangway, a litter, or other devices specified by the authority having jurisdiction, so that the equipment is used in its intended manner and the victim is removed without further injury.

**(A) Requisite Knowledge.** The likely location of crewmembers, passengers, shipyard workers, and contractors on a vessel or in a marine facility; the positioning for ladders and gangways to be used for rescue operations; the effects of vessel movements on ladder, aerial device, and gangway placement.

**(B) Requisite Skills.** Moving conscious and unconscious victims within and off vessels; moving victims on ladders, and gangways; ability to move and position ladders and gangways for rescue within and off vessels.

**4.3.4** Protect an exposure at a marine fire incident as a member of a team, given an incident, a team, an assignment, an exposure, a water supply source, fire apparatus, fire hose, nozzles, and equipment, and an assignment, so that the apparatus and equipment are positioned and deployed according to procedures and the exposure is protected.

**(A) Requisite Knowledge.** The effects of conducted, convected, and radiated heat on marine facility and vessel exposures; the effects of weather on fire behavior and marine exposure protection; the exposure hazards presented by various structures and equipment at marine facilities and on vessels; positioning around marine facilities and vessels.

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**(B) Requisite Skills.** Connecting hoses and apparatus to marine facility water supply sources; deploying hoses and nozzles for exposure protection within a marine facility or vessel.

**4.3.5** Collect and report vessel stability information, given a vessel, an incident, measuring devices, standard operating procedures, and an assignment, so that any current or potential hazards to stability are recognized and reported according to procedures.

**(A) Requisite Knowledge.** The effect of tide, wakes/waves, currents, fire fighting agents and/or vessel movement on vessel stability; procedures for reporting the information; vessel draft marking systems.

**(B) Requisite Skills.** Visualizing the position of a vessel and estimating any deviation from the normal position; using measuring devices and communications equipment.

**4.3.6\*** Control vessel movement, given a vessel, mooring equipment, and an assignment, so that the vessel is prevented from moving from the desired location.

**(A) Requisite Knowledge.** The effect of tide, wakes/waves, currents, movement of nearby vessels, and/or weather on vessel movement; the methods for securing a vessel to a land-based moor or another vessel; roles and responsibilities for personnel who secure the vessel.

**(B) Requisite Skills.** Operating mooring lines and equipment.

*A.4.3.6 Local standard operating procedures on who may operate mooring equipment and lines should be established and followed. The standard operating procedures may choose to differentiate these responsibilities based on the size of the vessel being moored. Firefighters may be allowed to operate mooring lines and equipment for small vessels, while the mooring of large vessels may be left up to qualified dockworkers and vessel crewmembers.*

**4.4 Communications.** The duty involves using marine facility and vessel communications equipment to receive and relay verbal information at an incident, according to the following job performance requirements.

**4.4.1** Transmit and receive messages via marine facility and vessel communications equipment, given marine facility and vessel communications equipment and standard operating procedures, so that the information is accurate, complete, clear, and relayed within the time established by the AHJ.

**(A) Requisite Knowledge.** Marine communications terminology and procedures; proper marine radio frequencies to be used; types and capabilities of vessel communications systems; methods for overcoming language barriers.

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**(B) Requisite Skills.** Operating marine facility and vessel communication systems; operating marine radios.

**4.4.2** Locate a marine facility or vessel representative, given a marine facility or vessel and an assignment, so that a line of communications is established between the fire department and facility or vessel representatives.

**(A) Requisite Knowledge.** Locations on a vessel where the ship's master, mate, engineer, or ship's agent may be located; marine frequencies that the vessel master should be monitoring; locations where facility representatives are normally located; methods for contacting representatives after normal working hours.

**(B) Requisite Skills.** Operating marine facility and vessel communications equipment; boarding the vessel; negotiating through the facility or vessel.

**4.4.3** Retrieve a vessel fire control plan and other specified documents from a cold zone on the vessel, given a vessel, an assignment, a fire control plan and other documents, and any necessary equipment, so that the fire control plan and documents are located and brought to the Incident Commander within the time specified by the AHJ.

**(A) Requisite Knowledge.** Location where the fire control plan and other documents such as dangerous cargo manifests, trim and stability booklets, cargo loading manuals, crew and passenger lists are located on a vessel; primary and alternate ways to reach the location(s) where the fire control plan and other documents are stored; how response personnel utilize the fire control plan; the location of the command post.

**(B) Requisite Skills.** Boarding and negotiating through the vessel; recognizing the fire control plan and other types of documents.

**4.4.4** Transmit and receive messages to vessel personnel and other agencies responding to an incident, given an incident, a list of the other agencies responding to the incident, communications equipment and standard operating procedures, so that the information is accurate, complete, clear, and relayed within the time established by the AHJ.

**(A) Requisite Knowledge.** Marine communications terminology and procedures; marine radio frequencies to be used; land-based frequencies used in mutual aid situations; the other agencies who may respond to marine incidents.

**(B) Requisite Skills.** Operating vessel and mobile communication systems, marine radios, and fire department communications equipment.

**4.5 Command.** This duty involves the establishment of an incident management structure at an incident, as well as establishing site control and information exchange procedures, according to the following job performance requirements.

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**4.5.1\*** Establish command at an incident, given an incident and an incident management system, so that all major parties involved in the incident and their responsibilities are identified and an initial command post is established.

**(A) Requisite Knowledge.** A working knowledge of the incident management system used by the AHJ; parties who should be included in the unified command structure at an incident; unified command procedures; the roles and responsibilities of the fire department, ship's master, U.S. Coast Guard or other marine agency for that jurisdiction (port state control) and facility representatives.

**(B) Requisite Skills.** Locating facility and vessel representatives,

*A.4.5.1 Any one of a number of incident management systems may be used for this purpose. Effective October 1, 2004 Federal Policy require that all incidents that include the participation that include Federal Agencies or for which State and Local agencies seek Federal reimbursement shall use NIMS.*

**4.5.2** Develop and monitor an initial action plan for an incident, given an incident, standard operating procedures, and fire department communications equipment, so that an accurate size-up of the incident is performed, the nature and location of the incident are accurately reported, hazards are identified, required resources are identified and ordered, assignments to other responders are made, progress is monitored, and the information is accurately transferred to the next Incident Commander.

**(A) Requisite Knowledge.** Radio procedures used by the AHJ; resource requirements for various types of incidents; basic marine fire fighting and emergency incident strategies and tactics; hazards associated with marine incidents; the incident management system used by the AHJ; size up procedures; transfer-of-command procedures.

**(B) Requisite Skills.** Operating marine radio and other communications equipment; using a tactical command worksheet; formulating and transmitting a size up report.

**4.5.3** Control access to a vessel, given a vessel, an incident, an accountability system, an incident management system, and response personnel, so that all emergency responders boarding the vessel are noted and accounted for, unauthorized personnel are prevented from boarding the vessel, and emergency personnel accountability reports (PARs) may be completed.

**(A) Requisite Knowledge.** A working knowledge of the incident management and accountability systems used by the AHJ; personnel who are authorized to operate at a marine incident.

**(B) Requisite Skills.** Differentiating between authorized and unauthorized personnel attempting to board the vessel; using accountability tactical worksheets.

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**4.5.4** Evacuate a vessel or facility, given an occupied vessel or facility, an incident, an accountability system, an incident management system, and response personnel, so that all nonessential personnel are removed from the hazard area to an area of refuge in an expedient manner.

**(A) Requisite Knowledge.** Vessel and facility evacuation procedures; likely locations to find passengers and crewmembers on the vessel; incident management and accountability procedures used by the AHJ.

**(B) Requisite Skills.** Operating onboard communications equipment; identifying safe routes of egress and locations of safe refuge on a vessel.

## **Chapter 5 Marine Fire Fighter II**

### **5.1 General.**

**5.1.1** In order to meet the requirements for Marine Fire Fighter II, the Marine Fire Fighter I must shall the general knowledge requirements in 5.1.1.1, the general skill requirements in 5.1.1.2, and the job performance requirements defined in Sections 5.2 through 5.5 of this standard.

#### **5.1.1.1 General Knowledge Requirements.**

The stability characteristics of various types of vessels, the relationship of stability to trim, list, hull deflection, and draft

#### **5.1.1.2 General Skill Requirements.** (reserved)

**5.2 Access.** This duty involves making safe access to the scene of an incident and evaluating and securing the scene on or around an involved vessel so that it may be safely boarded, if necessary, according to the following job performance requirements.

**5.2.1** Access a fire compartment operating as a member of a team, given a team, a vessel, an assignment, an incident, personal protective equipment, forcible entry tools, a guide rope or hose line, so that team integrity is maintained, doors and hatches are opened , tools are used , barriers are removed, the opening is made ready for entry.

**(A) Requisite Knowledge.** Construction and normal operation of vessel doors and hatches; forcible entry techniques for vessel doors, hatches, and compartments; safety procedures for securing vessel doors and hatches to prevent them from closing behind fire fighters; desired entry methods for various tactical operations, including ventilation, observation, dewatering, and agent application.

**(B) Requisite Skills.** Transporting and operating forcible entry tools; operating, forcing, and securing vessel doors and hatches; breaching decks and walls.

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**5.3 Response.** This duty involves the defensive control and extinguishment of fires onboard vessels, including fire attack, ventilation, reconnaissance operations, dewatering operations, and rescue of vessel occupants, according to the following job performance requirements.

**5.3.1** Control marine facility utilities, given an incident, a vessel or marine facility, standard operating procedures, tools, and an assignment, so that the utilities are controlled and command is notified.

**(A) Requisite Knowledge.** Properties, principles, and safety concerns for electricity, gas, sanitary, and water systems at marine facilities; utility disconnect methods and safety precautions specific to marine facilities.

**(B) Requisite Skills.** Identify and operate utility controls found at marine facilities and on vessels; assessing the marine facility for utility hazards.

**5.3.2\*** Control cargo transfer to and from a vessel, given a vessel, cargo, equipment, and an assignment, so that the cargo transfer status is identified, hazards to fire fighting operations are recognized and mitigated, and the information is relayed to the Incident Commander.

**(A) Requisite Knowledge.** Hazards presented by various types of cargo, cargo handling equipment; procedures for securing and transferring various types of cargo; vessel and facility personnel roles and responsibilities.

**(B) Requisite Skills.** Using various cargo handling equipment.

*A.5.3.2 Local standard operating procedures on who may operate cargo handling equipment should be established and followed. The standard operating procedures may choose to differentiate these responsibilities based on the size of the vessel. Firefighters may be allowed to operate cargo handling equipment for small vessels, while cargo handling on large vessels may be left up to longshoremen and vessel crewmembers.*

**5.3.3** Advance hose lines for boundary protection and other defensive fire operations onboard a vessel operating as a member of a team, given an incident, a vessel, an assignment, personal protective equipment, sufficient hose and a nozzle, and other equipment necessary to access the intended deployment location, so that team integrity is maintained, the hose line is deployed for advancement and operation, effective agent application practices are used, the fire is approached, techniques are appropriate according to procedures for the type of fire being fought, hazards are recognized and avoided, and the fire is brought under control or the boundary is sufficiently cooled.

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**(A) Requisite Knowledge.** Principles of fire streams; types, design, operation, nozzle pressure effects, and flow capabilities of nozzles; precautions to be followed when advancing hose lines to a fire on a vessel; observable results that a fire stream has been applied; dangerous vessel conditions created by a fire; principles of exposure protection on a vessel; physical states of matter that fuels may be found on a vessel; the application and type of attack lines used on vessels; the effects of fire streams on various material/fuel configurations; safe locations for operating fire streams on a vessel; recognizing the need to control fire movement aboard a vessel; characteristics and operating vessel fixed water supply and fire protection systems.

**(B) Requisite Skills.** Preventing water hammers when shutting down nozzles and valves; opening, closing, and adjusting flow and stream pattern on spray nozzles; advancing charged and uncharged 1 ½-inch (38 mm) diameter or larger hose lines up and down vessel ladders and stairs down corridors, and across decks; applying the fire stream to the marine fire area; opening and securing watertight doors and hatches and other doors and hatches on board.

**5.3.4** Ventilate smoke from a vessel operating as part of a team, given a vessel, an incident, an assignment, personal protective equipment, ventilation tools, equipment, ladders, and onboard ventilation systems, so that all equipment is positioned for ventilation, team integrity is maintained, a specified ventilation opening is created and left unobstructed, tools and onboard ventilation equipment are used as designed, all possible ventilation barriers are removed, products of combustion are removed from the vessel, and the team retreats to a safe location once the ventilation opening is made.

**(A) Requisite Knowledge.** Construction principles of a vessel that affect ventilation operations; the principles, advantages, limitations, and effects of horizontal, vertical, natural, and forced ventilation; safety considerations when venting a vessel; the operation of onboard ventilation systems; the signs, causes, effects, and prevention of backdrafts; the products of combustion commonly found on vessel fires; methods of heat transfer and principles of thermal layering on vessels; effects of vessel construction on fire behavior and heat transfer.

**(B) Requisite Skills.** Transporting and deploying ventilation equipment on a vessel; opening marine doors and hatches; breaching vessel structural components, operating onboard ventilation systems.

**5.3.5\*** Operate onboard vessel fixed fire suppression systems as a member of a team, given a team, a vessel, an incident, a fixed fire suppression system, an assignment, personal protective equipment, and communications equipment, so that the system is activated or shutdown when directed by the Incident Commander.

**(A) Requisite Knowledge.** Types of fixed suppression systems found on vessels; appropriate times to activate fixed suppression systems on vessels; hazards associated with the operating fixed suppression systems and agents.

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**(B) Requisite Skills.** Operating fire suppression system controls; operating communications equipment located at the fire suppression system control room.

*A.5.3.5 If this activity requires the Marine Fire Fighter II to enter an IDLH atmosphere, this activity should be performed as a team. It is imperative that the operation of fixed fire suppressions systems be coordinated with the operation and advancement of crews for manual fire fighting operations. Otherwise, operating the system may pose additional challenges or hazards to the fire fighters in the area the system is operating.*

**5.3.6\*** Assess fire conditions onboard a vessel while operating as a member of a team, given an assignment and a team, a vessel, an incident, personal protective equipment, a hose or safety line, and communications equipment, so that team integrity is maintained, the current size, intensity, location, rate and direction of spread, and other pertinent fire information is relayed to the Incident Commander within the time frame and format established by the AHJ.

**(A) Requisite Knowledge.** Fire behavior onboard vessels; safety procedures for operating in or near fire compartments on vessels; vessel construction and arrangement.

**(B) Requisite Skills.** Negotiating vessel ladders, stairs, corridors, and decks; operating in high heat and vision-obscured areas; accurately estimating compartment and fire size and percent of involvement.

*A.5.3.6 The intent of this JPR is for the Marine Fire Fighter II to be able to perform reconnaissance of forward incident locations and accurately size-up and relay information back to superiors in the incident management system.*

**5.3.7** Confirm the location and identity of exposures, hazards, or hazardous materials from vessel documents or personnel as a member of a team given an assignment, a team, a vessel and crewmembers, an incident, a dangerous cargo manifest (DCM), shipping papers, stowage plan, and appropriate reference materials, so that the exposures, hazards, or hazardous materials are identified and the information is conveyed to the Incident Commander.

**(A) Requisite Knowledge.** Terminology and symbols used in fire control plans; use for and difference between ship arrangement diagrams and fire control plans; the purpose of watch station bills and crew/passenger lists and how they can be used by response personnel in an emergency; the location, use and limitations of a dangerous cargo manifest (DCM) and cargo stowage plan; where the documents are likely to be found and who will utilize them in an emergency; the implications of changes in vessel draft, trim, list and hull deflection; container numbering systems; placarding and labeling systems; ship layout and construction.

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**(B) Requisite Skills.** Reading ships documents, labels, and placards; identifying various types of containers.

**5.3.8** Interpret marine facility and vessel documents, given a vessel fire control plan, passenger and cargo manifests, crew information or other types of documents, communications equipment, and appropriate reference materials, so that the information is interpreted and conveyed to the Incident Commander.

**(A) Requisite Knowledge.** Terminology and symbols used in fire control plans; use for and difference between ship arrangement diagrams and fire control plans; the purpose of watch station bills and crew/passenger lists and how they can be used by response personnel in an emergency; the location, use and limitations of a dangerous cargo manifest (DCM) and cargo stowage plan; the use of a cargo loading manual and ship stability book; where they are likely to be found and who will utilize them in an emergency; the implications of changes in vessel draft trim, list and hull deflection.

**(B) Requisite Skills.** Locating specific items on fire control plans such as fire control lockers, agent storage rooms, fire main connections, etc.; using the fire control plan to develop the rescue plan; reading information on DCM, including hazardous material shipping name, package type, weight, location, hazard class and UN number.

**5.3.9** Remove water from, or transfer water within, a vessel while operating as a member of a team, given a team, a vessel containing water, an assignment, dewatering equipment, and personal protective equipment, so that hazards to the vessel and personnel are identified, equipment is used in its designed manner, and the water is moved or removed and vessel stability is maintained.

**(A) Requisite Knowledge.** Methods for removing or transferring water; safety precautions to be taken when working in water; hazards associated with water collecting in various portions of a vessel; hazards associated with water removal or transfer in a vessel,

**(B) Requisite Skills.** Deploying and operating dewatering equipment.

**5.3.10** Attack a fire within a vessel operating as a member of a team, given a team, a vessel, an incident, an attack line, a secondary line, personal protective equipment, ladders or other required equipment, and an assignment, so that team integrity is maintained, the attack line is deployed for advancement, ladders are placed when needed, access is gained to the fire compartment, effective water application practices are used, the fire is approached, attack techniques facilitate suppression given the level of the fire, hidden fires are located and extinguished, hazards are recognized and managed, and the fire is extinguished.

**(A) Requisite Knowledge.** Principles of fire streams; types, design, operation, nozzle pressure effects, and flow capabilities of nozzles; precautions to be followed when

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advancing hose lines to a fire on a vessel; observable results that a fire stream has been applied; dangerous vessel conditions created by a fire; principles of exposure protection on a vessel; physical states of matter that fuels may be found on a vessel; the application and type of attack lines used on vessels; the effects of fire streams on various material/fuel configurations; safe locations for operating fire streams on a vessel; recognizing the need to control fire movement aboard a vessel.

**(B) Requisite Skills.** Preventing water hammers when shutting down nozzles and valves; opening, closing, and adjusting flow and stream pattern on spray nozzles; advancing charged and uncharged 38 mm (1 ½-inch) diameter or larger hose lines up and down vessel ladders and stairs, down corridors, and across decks; applying the fire stream to the fire area in a marine environment; attacking fires on, above, and below the main deck level; advancing multiple hoselines for fire attack and/or secondary lines in coordination.

**5.3.11\*** Conduct a search and rescue operation for a missing or downed fire fighter on a vessel operating as a member of a team, given a team, an assignment, a vessel, an incident, standard operating procedures, a vessel fire plan or other documents, a downed or missing fire fighter, personal protective equipment, a flashlight, a portable radio, forcible entry tools, a hose or safety line and other equipment available to the AHJ, so that ladders are placed when needed, all equipment is used as designed, the areas that the fire fighter is suspected of being in are searched, the fire fighter is located, supported, and removed, team integrity is maintained, and the team members' respiratory protection is not compromised.

**(A) Requisite Knowledge.** Psychological effects of operating in obscured vision conditions; methods to determine if the area is tenable; rapid intervention search techniques and strategies for locating and removing for downed or missing fire fighters.

**(B) Requisite Skills.** Using forcible entry tools and ladders during search and rescue operations; using SCBA while negotiating restricted passages; setting up and using ladders for various rescue situations; rescuing a fire fighter with functioning respiratory protection, rescuing a fire fighter without functioning respiratory protection; accessing remote or enclosed compartments; advancing charged and uncharged 38 mm (1 ½-inch) diameter or larger hose lines up and down vessel ladders and stairs, down corridors, and across decks; removing fire fighters using carries and drags; operating, forcing, and securing vessel doors and hatches; breaching decks and walls.

*A.5.3.11 The intent of this JPR is to prepare the Marine Fire Fighter II to serve as a member of a rapid intervention team (RIT) for incidents that occur on a vessel.*

**5.3.12\*** Conduct a search and rescue operation for a missing victim on a vessel operating as a member of a team, given a team, an assignment, a vessel, an incident, a vessel fire plan or other documents, a missing victim, personal protective equipment, a flashlight, forcible entry tools, and other equipment available to the AHJ, so that ladders are placed when needed, all equipment is used as designed, the areas that the victim is suspected of

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being in are searched, the victim is located and removed, team integrity is maintained, and the team members' respiratory protection is not compromised.

**(A) Requisite Knowledge.** Psychological effects of operating in obscured vision conditions; methods to determine if the area is tenable; primary and secondary search techniques on vessels; victim removal methods (including various drags and carries); likely locations of passengers, crew members, shipyard workers, and contractors.

**(B) Requisite Skills.** Using forcible entry tools and ladders during search and rescue operations; using SCBA while negotiating restricted passages; setting up and using ladders for various rescue situations; rescuing victims without functioning respiratory protection; accessing remote or enclosed compartments; advancing charged and uncharged 38 mm (1 ½-inch) diameter or larger hose lines up and down vessel ladders and stairs, down corridors, and across decks; removing victims using carries and drags; operating, forcing, and securing vessel doors and hatches; breaching decks and walls.

*A.5.3.12 5.3.11 and 5.3.12 are very similar. The primary difference is that in 5.3.11 the Marine Fire Fighter II is rescuing another fire fighter who may be wearing SCBA. In 5.3.12 the Marine Fire Fighter II is locating and removing ship's occupants.*

**5.3.13** Determine the need for and deploy special extinguishing agents needed to attack a fire on a vessel, given an incident, an assignment, a selection of special extinguishing agents and their use instructions, special agent application equipment, agent quantity calculation devices, and other information allowed by the AHJ, so that the need is identified and communicated to the Incident Commander, the agent is selected for the fire being attacked, the equipment needed to apply the agent is requested assembled, and a sufficient quantity of agent is applied to extinguish the fire and prevent reignition..

**(A) Requisite Knowledge.** The classes of fire and the appropriate extinguishing agents for each class and fuel; the effects of various extinguishing agents on cargo and life safety; delivery methods for various special extinguishing agents, including on board systems; sources of bulk special extinguishing agents.

**(B) Requisite Skills.** Reading cargo manifests; reading technical information on extinguishing agents; calculating extinguishing rates and quantities for various special agents; deploying and operating special extinguishing agent equipment.

**5.3.14** Develop a preincident survey for a vessel or facility fire, given a vessel and/or facility, measuring and documentation equipment, and a policy for conducting preincident survey by the AHJ, so that a detailed preincident survey is develop in accordance with the standard operating procedures of the AHJ.

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**(A) Requisite Knowledge.** Hazards associated with marine fire incidents; important strategic and tactical elements of marine fire incidents; necessary elements of a preincident survey for a marine incident.

**(B) Requisite Skills.** Using measuring and photography equipment; drawing diagrams and plans of vessels and marine facilities; using preincident survey forms or software.

**5.4 Communications.** This duty involves no requirements for the Marine Fire Fighter II.

**5.5 Command.** This duty involves no requirements for the Marine Fire Fighter II.

## **Annex A Explanatory Material**

*Annex A is not part of the requirements of this NFPA document but is included for informational purposes only. This annex contains explanatory material numbered to correspond with the applicable text paragraphs.*

## **Annex B Explanation of the Standard and Concepts of JPR's**

*This annex is not a part of the requirements of this NFPA document but is included for informational purposes only.*

**B.1 Explanation of the Standards and Concepts of Job Performance Requirements (JPRs).** The primary benefit of establishing national professional qualification standards is to provide the public and private sectors with a framework of the job requirements for the fire service. Other benefits include enhancement of the profession, individual as well as organizational growth and development, and standardization of practices.

NFPA professional qualification standards identify the minimum JPRs for specific fire service positions. The standards can be used for implementing training design and evaluation; certifying, measuring and critiquing on-the-job performance; defining

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hiring practices; and setting organizational policies, procedures, and goals. (Other applications are encouraged.)

Professional qualification standards for a specific job are organized by major areas of responsibility defined as duties. For example, the fire fighter's duties might include fire suppression, rescue, and water supply; and the public fire educator's duties might include education, planning and development, and administration. Duties are major functional areas of responsibility within a job.

The professional qualification standards are written as JPRs. JPRs describe the performance required for a specific job. JPRs are grouped according to the duties of a job. The complete list of JPRs for each duty defines what an individual must be able to do in order to successfully perform that duty. Together, the duties and their JPRs define the job parameters; that is, the professional qualification standard as a whole is a job description.

**B.2 Breaking Down the Components of a JPR.** The JPR is the assembly of three critical components. (See Table B.2.) These components are as follows:

- (1) Task that is to be performed
- (2) Tools, equipment, or materials that must be provided to successfully complete the task
- (3) Evaluation parameters and/or performance outcomes

**Table B.2 Example of a JPR**

(1) Task	Ventilate a pitched roof
(2) Tools, equipment, or materials	Given an ax, a pike pole, an extension ladder, and a roof ladder
(3) Evaluation parameters and performance outcomes	So that a 4 ft □ 4 ft hole is created; all ventilation barriers are removed; ladders are properly positioned for ventilation; ventilation holes are correctly placed; and smoke, heat, and combustion by-products are released from the structure

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**B2.1 The Task to Be Performed.** The first component is a concise statement of what the person is supposed to do.

**B2.2 Tools, Equipment, or Materials that Must be Provided to Successfully Complete the Task.** This component ensures that all individuals completing the task are given the same minimal tools, equipment, or materials when being evaluated. By listing these items, the performer and evaluator know what must be provided in order to complete the task.

**B2.3 Evaluation Parameters and/or Performance Outcomes.** This component defines how well one must perform each task — for both the performer and evaluator. The JPR guides performance outcomes. This portion of the JPR promotes consistency in evaluation by reducing the variables used to gauge performance.

In addition to these three components, the JPR contains requisite knowledge and skills. Just as the term requisite suggests, they are the necessary knowledge and skills one must have prior to being able to perform the task. Requisite knowledge and skills are the foundation for task performance.

Once the components and requisites are put together, the JPR might read as follows.

**B2.3.1 Example 1.** The Fire Fighter I shall ventilate a pitched roof, given an ax, a pike pole, an extension ladder, and a roof ladder, so that a 4 ft × 4 ft hole is created, all ventilation barriers are removed, ladders are properly positioned for ventilation, and ventilation holes are correctly placed.

(a) **Requisite Knowledge:** Pitched roof construction, safety considerations with roof ventilation, dangers associated with incorrect ventilation, knowledge of ventilation tools, effects of ventilation on fire growth, smoke movement in structures, signs of backdraft, knowledge of vertical and forced ventilation.

(b) **Requisite Skills:** Remove roof covering; correctly initiate roof cuts; use the pike pole to clear ventilation barriers; use ax correctly for sounding, cutting, and stripping; position ladders; climb and position self on ladder.

**B2.3.2 Example 2.** The fire investigator shall interpret burn patterns, given standard equipment and tools and some structural/content remains, so that each individual pattern is evaluated with respect to the burning characteristics of the material involved.

(a) **Requisite Knowledge:** Knowledge of fire development and the interrelationship of heat release rate, form, and ignitibility of materials.

(b) **Requisite Skill:** Interpret the effects of burning characteristics on different types of materials.

### **B.3 Examples of Potential Uses.**

**B3.1 Certification.** JPRs can be used to establish the evaluation criteria for certification at a specific job level. When used for certification, evaluation must be based on the successful completion of JPRs.

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First, the evaluator would verify the attainment of requisite knowledge and skills prior to JPRs evaluation. Verification might be through documentation review or testing.

Next, the candidate would then be evaluated on completing the JPRs. The candidate would perform the task and be evaluated based on the evaluation parameters, the performance outcomes, or both. This performance-based evaluation can be either practical (for psychomotor skills such as “ventilate a roof”) or written (for cognitive skills such as “interpret burn patterns”).

Note that psychomotor skills are those physical skills that can be demonstrated or observed. Cognitive skills (or mental skills) cannot be observed but are evaluated on how one completes the task (process oriented) or on the task outcome (product oriented).

Using Example 1, a practical performance-based evaluation would measure the ability to “ventilate a pitched roof.” The candidate passes this particular evaluation if the standard was met, that is, if a 4 ft × 4 ft hole was created, all ventilation barriers were removed, ladders were correctly positioned for ventilation, ventilation holes were correctly placed, and smoke, heat, and combustion by-products were released from the structure.

For Example 2, when evaluating the task “interpret burn patterns,” the candidate might be given a written assessment in the form of a scenario, photographs, and drawings and then be asked to respond to specific written questions related to the JPR’s evaluation parameters.

Remember, when evaluating performance, candidates must be given the tools, equipment, or materials listed in the JPR before they can be correctly evaluated: for example, an ax, a pike pole, an extension ladder, and a roof ladder.

**B.3.2 Curriculum Development/Training Design and Evaluation.** The statements contained in this document that refer to job performance were designed and written as JPRs. Although a resemblance to instructional objectives might be present, these statements should not be used in a teaching situation until after they have been modified for instructional use.

JPRs state the behaviors required to perform a specific skill(s) on the job, as opposed to a learning situation. These statements should be converted into instructional objectives with behaviors, conditions, and standards that can be measured within the teaching/learning environment. A JPR that requires a fire fighter to “ventilate a pitched roof” should be converted into a measurable instructional objective for use when teaching the skill. [See Figure B.3.2(a).]

Using Example 1, a terminal instructional objective might read as follows:

The candidate will ventilate a pitched roof, given a simulated roof, an ax, a pike pole, an extension ladder, and a roof ladder, so that 100 percent accuracy is attained on a skills checklist. (At a minimum, the skills checklist should include each of the measurement criteria from the JPR.)

Figure B.3.2(b) is a sample checklist for use in evaluating this objective.

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While the differences between job performance requirements and instructional objectives are subtle in appearance, the purpose of each statement differs greatly. JPRs state what is necessary to perform the job in the “real world.” Instructional objectives, however, are used to identify what students must do at the end of a training session and are stated in behavioral terms that are measurable in the training environment.

By converting JPRs into instructional objectives, instructors will be able to clarify performance expectations and avoid confusion related to using statements designed for purposes other than teaching. Additionally, instructors will be able to add local/state/ regional elements of performance into the standards as intended by the developers.

\*\*\*\*INSERT FIGURE HERE\*\*\*\*

FIGURE B.3.2(a) Converting JPRs into instructional objectives.

\*\*\*\*INSERT FIGURE HERE\*\*\*\*

FIGURE B.3.2(b) Sample skills checklist.

Requisite skills and knowledge should be converted into enabling objectives. These objectives help to define the course content. The course content should include each of the requisite knowledge and skills. Using Figure C.4(b), the enabling objectives are pitched roof construction, safety considerations with roof ventilation, removal of roof covering, proper roof cuts, and so on. These objectives ensure that the course content supports the terminal objective.

Note that it is assumed that the reader is familiar with curriculum development or training design and evaluation.

**B.4 Other Uses.** While the professional qualifications standards are used principally to guide the development of training and certification programs, there are a number of other potential uses for these documents. Because they are written in JPR terms, they lend themselves well to any area of the profession where a level of performance or expertise must be determined. Such areas might include the following.

- (1) *Employee Evaluation/Performance Critiquing.* JPRs can be used as a guide by both the supervisor and the employee during an evaluation. The JPRs for a specific job define tasks that are essential to perform on the job, as well as the evaluation criteria to measure when those tasks are completed.
- (2) *Establishing Hiring Criteria.* Professional qualifications standards can be used in a number of ways to further the establishment of hiring criteria. The authority having jurisdiction could simply require certification at a specific job level, for example, Fire Fighter I. The JPRs could also be used as the basis for pre-employment screening by establishing essential minimal tasks and the related evaluation criteria.

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An added benefit is that individuals interested in employment can work toward the minimal hiring criteria at local colleges.

- (3) *Employee Development.* The professional qualifications standards can be useful to both the employee and the employer in developing a plan for the individual's growth within the organization. The JPRs and the associated requisite skills and knowledge can be used as a guide to determine additional training and education required for the employee to master the job or profession.
- (4) *Succession Planning.* Succession planning, or career pathing, addresses the efficient placement of people into jobs in response to current needs and anticipated future needs. A career development path can be established for targeted individuals to prepare them for growth within the organization. The JPRs and requisite knowledge and skills could then be used to develop an educational path to aid in the individual's advancement within the organization or profession.
- (5) *Establishing Organizational Policies, Procedures, and Goals.* The JPRs can be incorporated into organizational policies, procedures, and goals where employee performance is addressed.

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