

CERTIFICATION CURRICULUM MANUAL

CHAPTER THREE

BASIC MARINE FIRE SUPPRESSION

1996 Edition

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Texas Commission on Fire Protection
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**CHAPTER THREE
BASIC MARINE FIRE PROTECTION
CURRICULUM OUTLINE**

SECTION	SUBJECT	RECOMMENDED HOURS
301	Fire Commission Rules and Regulations	2
302	Marine Terms & Definitions	6
303	Marlinspike Seamanship	4
304	Merchant Vessel Orientation	18
305	Operating Procedures & Tactics	12
306	Fireboats	10
307	Marine Rescue Operations	10
308	Marine Blueprint & Manifest Reading	4
309	Water Survival	8
310	Shipboard Fire Protection, Emergency Equip. & Systems	8
311	Support of Land Base Operations	8
	TOTAL HOURS RECOMMENDED	90

RECOMMENDED REFERENCE LIST FOR THE BASIC MARINE FIRE SUPPRESSION CURRICULUM

This Recommended Reference List is provided as a general guide for both instructors and students to locate information pertaining to the specific objectives in the TCFP Curriculum. This list is **not** all-inclusive and does not in any way limit TCFP development and use of questions to test the objectives of the curriculum.

Community Water Safety, (September 1988 ed.). Houston TX: American Red Cross.

Code of Federal Regulations, 29 CFR Part 1910.146. U.S. Department of Labor, Occupational Safety & Health Administration, <http://www.osha.gov>

Essentials of Fire Fighting (4th ed.). (1998). Stillwater OK: Fire Protection Publications. International Fire Service Training Association.

NFPA 1405: Land Based Fire Fighters Who Respond to Marine Vessel Fires (2001 ed.). Quincy MA: NFPA Publications. National Fire Protection Association.

NFPA 1983: Life Safety Rope and Equipment for Emergency Services (2006 ed.). Quincy MA: NFPA Publications. National Fire Protection Association.

Marine Fire Prevention, Firefighting and Fire Safety (1990). Washington, DC: U.S. Department of Commerce, Maritime Administration.

SUPPLEMENT TO THE BASIC MARINE SUPPRESSION CURRICULUM

This supplement is provided as a general guide for both instructors and students to locate information pertaining to the specific objectives in the TCFP Curriculum. This supplement is **not** an all-inclusive list and does not in any way limit TCFP development and use of questions to test the objectives of the curriculum.

Objective	Reference	Page Number
301-1.01	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires TCFP Standards Manual for Fire Protection Personnel	7 423-C-1
301-1.02	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fire	7
301-1.02	TCFP Certification Curriculum Manual	I
301-2.02	TCFP Standards Manual for Paid Fire Protection Personnel	423(C-1)-(C-4)
302-1.01-1.16	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	7
302-1.17-1.53	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	8
302-1.54-1.86	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	9
302-2.01-2.53	AUTHORITY HAVING JURISDICTION	-
303-1.01	NFPA 1983 Essentials of Fire Fighting	Ch 1 147
303-1.02	Essentials of Fire Fighting	147
303-2.01	Essentials of Fire Fighting	154-155
303-2.02	Essentials of Fire Fighting	154-155
303-2.03	Essentials of Fire Fighting	154-155
303-2.04	Essentials of Fire Fighting	154-155
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303-3.01	Essentials of Fire Fighting	156, 169
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303-3.08	Essentials of Fire Fighting	156, 167
303-4.01	Essentials of Fire Fighting	154-158
304-1.01	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	15
304-1.02	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	15
304-1.03	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	9
304-1.04	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	15

304-1.05	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	15
304-1.06	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	15
304-1.07	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	7
304-1.08	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	9
304-1.09	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	15
304-1.10	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	15
304-2.01	AUTHORITY HAVING JURISDICTION	-
304-2.02	AUTHORITY HAVING JURISDICTION	-
304-2.03	AUTHORITY HAVING JURISDICTION	-
304-3.01	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	16-19
304-3.02	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	16-19
304-3.03	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	16-19
304-4.01	Marine Fire Prevention, Fighting and Fire Safety	238
304-4.02	Marine Fire Prevention, Fighting and Fire Safety	238
304-4.03	Marine Fire Prevention, Fighting and Fire Safety	238
304-5	AUTHORITY HAVING JURISDICTION	-
304-6.01	Marine Fire Prevention, Fighting and Fire Safety	(162)(164)(170)
304-6.02	Marine Fire Prevention, Fighting and Fire Safety	(162)(164)(170)
304-6.03	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	8
304-6.04	Marine Fire Prevention, Fighting and Fire Safety	(162)(164)(170)
304-6.05	Marine Fire Prevention, Fighting and Fire Safety	(162)(164)(170)
304-7.01	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	21
304-7.02	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	21
304-7.03	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	21
304-7.04	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	21
304-7.05	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	25-26
304-7.06	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	26

305-1.	AUTHORITY HAVING JURISDICTION	-
305-2.01	AUTHORITY HAVING JURISDICTION	-
305-2.02	AUTHORITY HAVING JURISDICTION	-
305-2.03	AUTHORITY HAVING JURISDICTION	-
305-3	AUTHORITY HAVING JURISDICTION	-
305-5	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	45-47
305-6.01	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	22

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305-6.03	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	22
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305-6.05	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	23
305-6.06	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	23
305-6.07	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	23
305-6.08	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	23
305-6.09	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	23-24
305-6.10	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	24
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305-6.15	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	27

306-1.01-1.04	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	30
306-2.01-2.03	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	30
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306-11	AUTHORITY HAVING JURISDICTION	-

307-1.01	Fire Service Rescue Practices	71
307-2.01	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	41
307-2.02	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	40

308-1.01	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	31
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308-3.01	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	32

308-4.01	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	67-68
308-4.02	NFPA 1405: Land-Based Fire Fighters Who Respond to Marine Vessel Fires	67-68
308-8.5	AUTHORITY HAVING JURISDICTION	-
308-1.6	AUTHORITY HAVING JURISDICTION	-
309-1.01	COMMUNITY WATER SAFETY	40
309-1.02	COMMUNITY WATER SAFETY	16
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309-1.06	COMMUNITY WATER SAFETY	7
310-1.01	Marine Fire Prevention, Fighting and Fire Safety	171-197
310-1.02	Marine Fire Prevention, Fighting and Fire Safety	171-197
310-1.03	Marine Fire Prevention, Fighting and Fire Safety	101-112
310-1.04	Marine Fire Prevention, Fighting and Fire Safety	358-359
310-1.05	Marine Fire Prevention, Fighting and Fire Safety	133-136
310-1.06	Marine Fire Prevention, Fighting and Fire Safety	196
311-1.01	AUTHORITY HAVING JURISDICTION	-
311-1.02	AUTHORITY HAVING JURISDICTION	-
311-1.03	AUTHORITY HAVING JURISDICTION	-
311-2	AUTHORITY HAVING JURISDICTION	-
311-3	AUTHORITY HAVING JURISDICTION	-
311-4	AUTHORITY HAVING JURISDICTION	-

SECTION 301

COMMISSION ON FIRE PROTECTION

RULES AND REGULATIONS

301-1.00 **The marine firefighter trainee shall identify the NFPA standard applicable to land based firefighters who respond to marine vessel fires.**

301-1.01 Given a list of titles, the marine firefighter trainee shall select the correct title of NFPA 1405.

301-1.02 Given a list of numbers, the marine firefighter trainee shall select the correct number of the NFPA standard pertaining to land based firefighters who respond to marine vessel fires.

301-2.00 **The marine firefighter trainee shall identify the correct laws and rules applicable to Basic Marine Firefighter certification by the Commission on Fire Protection.**

301-2.01 The marine firefighter trainee shall identify the required subject areas to be included in a curriculum for Basic Marine Firefighter certification.

301-2.02 The marine firefighter trainee shall identify the various levels of firefighter certification as established by the Commission on Fire Protection:

301-2.02a. Basic

301-2.02b. Intermediate

301-2.02c. Advanced

301-2.02d. Master

REFERENCE MATERIAL:

1. Current issue of the Texas Commission on Fire Protection Manual for Fire Protection Personnel
2. Current issue of Basic Marine Fire Protection Curriculum

SECTION 302

MARINE TERMS AND DEFINITIONS

302-1.00 **The marine firefighter trainee shall demonstrate knowledge of the following terms and definitions used by the marine industry, as listed in the definition section of NFPA 1405.**

302-1.01 Accommodation Spaces

302-1.02 Admiralty Law - Maritime Law

302-1.03 Aft

302-1.04 Anchorage

302-1.05 Athwartship

302-1.06 Ballast

302-1.07 Ballast Tank

302-1.08 Barge

302-1.09 Beam

302-1.10 Berth

302-1.11 Berthing Area

302-1.12 Bilge

302-1.13 Bitts

302-1.14 Boom

302-1.15 Bow

302-1.16 Break Bulk Terminal

302-1.17 Bulk Terminal

302-1.18 Bulkhead

302-1.19 Buoyancy

302-1.20	Car Terminal
302-1.21	Centerline
302-1.22	Chief Mate
302-1.23	Coaming
302-1.24	Cofferdam
302-1.25	Companionway
302-1.26	Container Terminal
302-1.27	COTP
302-1.28	Damage Control Locker/Emergency Gear Locker
302-1.29	Deck
302-1.30	Dewatering
302-1.31	Double Bottom
302-1.32	Draft
302-1.33	Drafting
302-1.34	Dry Bulk Terminal
302-1.35	Dunnage
302-1.36	Escape Trunk
302-1.37	Fantail
302-1.38	Fire Control Plan
302-1.39	Fire Station
302-1.40	Fire Warp
302-1.41	Force Majeure

302-1.42	Forecastle
302-1.43	Forward
302-1.44	Frame
302-1.45	Freeboard
302-1.46	Gangway
302-1.47	Gunwale
302-1.48	Heeling
302-1.49	Hogging
302-1.50	House
302-1.51	International Shore Connection
302-1.52	Jacob's Ladder
302-1.53	Keel
302-1.54	Ladder
302-1.55	List
302-1.56	Main Deck
302-1.57	Master
302-1.58	Mooring
302-1.59	Overhead
302-1.60	Passageway
302-1.61	Platforms
302-1.62	Port Side
302-1.63	Riser
302-1.64	Roll-On/Roll-Off (ro/ro)

302-1.65	Sagging
302-1.66	Sail Area
302-1.67	Scupper
302-1.68	Shaft Alley
302-1.69	Shaftway
302-1.70	SOLAS
302-1.71	Starboard Side
302-1.72	Stern
302-1.73	Stevedore
302-1.74	Superstructure
302-1.75	Tank Top
302-1.76	Tides
302-1.77	Towboat
302-1.78	Tug
302-1.79	Tween Decks
302-1.80	Ullage Hole
302-1.81	USCG
302-1.82	Vertical Zone
302-1.83	Watertight Bulkhead
302-1.84	Watertight Door
302-1.85	Watertight Traverse Bulk Head
302-1.86	Winch

302-2.00 ***The marine firefighter trainee shall demonstrate knowledge of the following terms and definitions used by the marine industry, as required by the authority having jurisdiction.***

- 302-2.01 American Bureau of Shipping
- 302-2.02 Bollard Pull
- 302-2.03 Boxed End
- 302-2.04 Bridle
- 302-2.05 Capstan
- 302-2.06 Certification
- 302-2.07 Channel
- 302-2.08 Chock
- 302-2.09 Cleat
- 302-2.10 Coils
- 302-2.11 Compartment
- 302-2.12 Compartmentation
- 302-2.13 Day Mark
- 302-2.14 Deadman
- 302-2.15 Deadrise
- 302-2.16 Docking Tug
- 302-2.17 Documentation
- 302-2.18 Dolphin
- 302-2.19 Doubler
- 302-2.20 Draft Marks

302-2.21	Drip Pan
302-2.22	Dry docking
302-2.23	Dumb Vessel
302-2.24	Expansion Trunk
302-2.25	Fender
302-2.26	Flame Screen
302-2.27	Flange
302-2.28	Fleet Boat
302-2.29	Gas Free
302-2.30	Gasket
302-2.31	Gauge
302-2.32	Harbor Boat
302-2.33	Hatch
302-2.34	Hawser
302-2.35	Head Log
302-2.36	Hull
302-2.37	Knot
302-2.38	Landing
302-2.39	Load Line Marks
302-2.40	Log Book
302-2.41	Manhole Cover
302-2.42	Nautical Mile
302-2.43	Padeye

302-2.44	Plimsoll Mark
302-2.45	Propeller
302-2.46	Pushboat
302-2.47	Rubrail
302-2.48	Rules of the Road
302-2.49	Running Lights
302-2.50	Shackle
302-2.51	Stem
302-2.52	Turnbuckle
302-2.53	Wheel

REFERENCE MATERIAL:

1. *NFPA 1405: Land Based Fire Fighters Who Respond to Marine Vessel Fires* (2001 ed.). Quincy MA: NFPA Publications. National Fire Protection Association.

SECTION 303

MARLINSPIKE SEAMANSHIP

303-1.00 ***The marine firefighter trainee shall identify the NFPA standard applicable to ropes, knots, and hitches.***

303-1.01 Given a list of titles, the marine firefighter trainee shall select the correct title of NFPA 1983.

303-1.02 Given a list of numbers, the marine firefighter trainee shall select the correct number of the NFPA standard pertaining to Life Safety Rope.

303-2.00 ***The marine firefighter trainee shall identify and/or demonstrate the following terms used when tying a knot or hitch.***

303-2.01 Standing end

303-2.02 Running part

303-2.03 Bight

303-2.04 Loop

303-2.05 Round turn

302-2.06 Working end

303-3.00 ***The marine firefighter trainee, when given the proper size and length of rope, shall demonstrate tying various knots.***

303-3.01 Becket (sheet) bend

303-3.02 Bowline

303-3.03 Clove hitch

303-3.04 Square knot

303-3.05 Half hitch

- 303-3.06 Figure eight
- 303-3.07 Figure eight on a bight
- 303-3.08 Figure eight follow through

303-4.00 ***The marine firefighter trainee, when given a rescue task, shall demonstrate using ropes for rescue.***

- 303-4.01 The marine firefighter trainee shall select the appropriate size, strength, and length of a rope for a given rescue task. The marine firefighter trainee shall tie a double loop figure eight and place it on a victim's legs. Place a half hitch around the victim's chest with the working end and secure it with an overhand safety to form a loop.

REFERENCE MATERIAL:

1. *Essentials of Fire Fighting* (4th ed.). (1998). Stillwater OK: Fire Protection Publications. International Fire Service Training Association.
2. *NFPA 1983: Life Safety Rope and Equipment for Emergency Services* (2006 ed.). Quincy MA: NFPA Publications. National Fire Protection Association.

SECTION 304

MERCHANT VESSEL ORIENTATION

304-1.00 **The marine firefighter trainee shall identify the following types of merchant vessels.**

- 304-1.01 Dry Bulk Carriers
- 304-1.02 Break Bulk Carriers
- 304-1.03 Ro/Ro (roll-on/roll-off) ships
- 304-1.04 Container ships
- 304-1.05 Liquid Bulk Carriers (Tankers)
- 304-1.05 Passenger Vessels
- 304-1.06 Ferries
- 304-1.07 Barges
- 304-1.08 Tugs and Tow Boats
- 304-1.09 Multi-Purpose ship
- 304-1.10 Lighter-on-Board

304-2.00 **The marine firefighter trainee shall conduct actual onboard familiarization with the different vessels.**

- 304-2.01 Ships
- 304-2.02 Tugs
- 304-2.03 Barges

304-3.00 ***The marine firefighter shall identify the basic ship organization members.***

- 304-3.01 Captain
- 304-3.02 Deck Department
- 304-3.03 Engineering Department
- 304-3.04 Steward Department

304-4.00 ***The marine firefighter trainee shall list the three types of tank barges.***

- 304-4.01 Single-skin tank barge
- 304-4.02 Double-skin tank barge
- 304-4.03 Independent cylindrical tanks

304-5.00 ***The marine firefighter trainee shall identify and locate the international shore connection on the merchant vessels.***

304-6.00 ***The marine firefighter trainee shall identify the shipboard fixed systems.***

- 304-6.01 Firemain
- 304-6.02 Branch Lines
- 304-6.03 Fire Stations
- 304-6.04 Fire Pumps
- 304-6.05 Water Sprinkler Systems

304-7.00 ***The marine firefighter trainee shall identify the ship's operating systems.***

- 304-7.01 Generators

- 304-7.02 Ventilation System
- 304-7.03 Fuel Systems
- 304-7.04 Communications Systems
- 304-7.05 Dewatering Capacity
 - 304-7.05a. Water Weight
 - 304-7.05b. Water Flow (Hose Lines)
 - 304-7.05c. Vessel Fixed Pumps (Bilge Pump)
 - 304-7.05d. Fixed Pump Suctions
 - 304-7.05e. Fixed Pump Power
 - 304-7.05f. Vessel Portable Pumps
 - 304-7.05g. Vessel Drainage System
 - 304-7.05h. Swimming Pools
 - 304-7.05i. Toilet
 - 304-7.05j. Portable Pumps Brought on Board
 - 304-7.05k. Portable Pump Types
 - 304-7.05l. Cutting of Holes
- 304-7.06 Inert Gas Systems

REFERENCE MATERIAL:

1. *Marine Fire Prevention, Firefighting and Fire Safety* (1990). Washington, DC: U.S. Department of Commerce, Maritime Administration.
2. *NFPA 1405: Land Based Fire Fighters Who Respond to Marine Vessel Fires* (2001 ed.). Quincy MA: NFPA Publications. National Fire Protection Association.

SECTION 305

OPERATING PROCEDURES AND TACTICS

305-1.00 **The marine firefighter shall identify the Emergency Management Organizational Structure used on national, state and the port which operates within the jurisdiction having authority.**

305-2.00 **The marine firefighter trainee shall identify emergency service communication procedures.**

305-2.01 The marine firefighter trainee shall identify the procedure for a citizen to report a fire or other emergency, according to local procedures.

305-2.02 The marine firefighter trainee shall identify the procedures for receiving an emergency call and transmitting alarm to appropriate personnel, according to local procedures.

305-2.03 The marine firefighter trainee shall identify prescribed radio procedures, according to local procedures.

305-3.00 **The marine firefighter trainee shall describe procedures and policies concerning staffing, fireboats, and fire apparatus during alarms, according to local procedures.**

305-4.00 **The marine firefighter trainee shall identify and demonstrate the use of communication equipment.**

305-4.01 The marine firefighter trainee shall demonstrate radio procedures according to prescribed standards or local procedures.

305-5.00 **The marine firefighter trainee shall describe the elements of the Incident Management System to assure coordination of response activities at emergency incidents.**

305-6.00 **The marine firefighter trainee shall display knowledge of the following factors that effect vessel stability.**

- 305-6.01 Vessel Stability and Equilibrium
- 305-6.02 Initial Stability
- 305-6.03 Typical Vessel Conditions
- 305-6.04 Center of Gravity
 - 305-6.04a. Free Surface Effect
 - 305-6.04b. Free Surface Critical Factors
 - 305-6.04c. Free Surface Reduction
 - 305-6.04d. Combined Effects
- 305-6.05 Center of Buoyancy
- 305-6.06 Righting Arm
- 305-6.07 Metacentric Height
- 305-6.08 Stability Curves
 - 305-6.08a. Critical Angle of List
- 305-6.09 Vessel Stability Concerns
 - 305-6.09a. Fire Fighting Factors Affecting Stability
 - 305-6.09b. Stability Factors Affecting Fire Fighting
 - 305-6.09c. Vessel Factors Affecting Initial Stability
 - 305-6.09d. Internal Factors Affecting Overall Stability
 - 305-6.09e. Factors Affecting Underway Operations
 - 305-6.09f. External Factors Affecting Overall Stability
- 305-6.10 Stability Resources
 - 305-6.10a. Consulting Personnel

- 305-6.10b. Documents
- 305-6.11 Primary Stability Information
 - 305-6.11a. Vessel Drafts
 - 305-6.11b. Vessel List
 - 305-6.11c. Vessel Status
 - 305-6.11d. Available Depth of Water
 - 305-6.11e. Type of Bottom Material
 - 305-6.11f. Water Flow
- 305-6.12 Secondary Stability Information
 - 305-6.12a. Hull Openings
 - 305-6.12b. Dewatering Capacity (See section 304-7.05)
 - 305-6.12c. Watertight Potentials
 - 305-6.12d. Mooring Potentials
 - 305-6.12e. Vessel Aground
 - 305-6.12f. Dewatering
- 305-6.13 Stability Analysis and Monitoring
 - 305-6.13a. Critical Angle of List
 - 305-6.13b. Vessel Drafts
 - 305-6.13c. Tons per Inch Immersion
 - 305-6.13d. Vessel Listing at Pier
 - 305-6.13f. Increased Draft Due to List
- 305-6.14 Tactics for Stabilizing Vessel
 - 305-6.14a. Vessel List

305-6.14b. Causes of List

305-6.14c. List Correction

305-6.14c (1). Establish Flooding Boundaries

305-6.14c (2). Free Surface Reduction

305-6.14c (3). Weight Removal

305-6.14c (4). Weight Transfer

305-6.14c (5). Weight Addition

305-6.15 Scuttling or Breaching

REFERENCE MATERIAL:

NFPA 1405: Land Based Fire Fighters Who Respond to Marine Vessel Fires (2001 ed.). Quincy MA: NFPA Publications. National Fire Protection Association.

SECTION 306

FIREBOATS

306-1.00 **The marine firefighter trainee shall be able to identify four basic construction features of a fireboat.**

- 306-1.01 Fire fighting
- 306-1.02 Non-combustible
- 306-1.03 Spray protection
- 306-1.04 On-board air supply

306-2.00 **The marine firefighter trainee shall be able to identify the three basic functions of a fireboat.**

- 306-2.01 Rescue
- 306-2.02 Platforms
- 306-2.03 Water Supply

306-3.00 **The marine firefighter trainee shall quote the specific capabilities of the fireboat(s) operating within the jurisdiction having authority.**

- 306-3.01 Water delivery, in gallons per minute
- 306-3.02 Speed, in knots
- 306-3.03 Draft, in feet
- 306-3.04 Monitors
 - 306-3.04a. Number of monitors
 - 306-3.04b. Gallons per minute of each monitor
- 306-3.05 Foam Tank, capacity in gallons

306-4.00 ***The marine firefighter trainee shall identify fireboat preventive maintenance procedures within the jurisdiction having authority.***

306-4.01 Daily Maintenance Checklist

306-4.02 Signs that indicate equipment maintenance

306-5.00 ***The marine firefighter trainee shall identify the positions of the fireboat crew within the jurisdiction having authority.***

306-5.01 Captain

306-5.02 Pilot

306-5.03 Chief Engineer

306-5.04 Engineer

306-5.05 Hoseman

306-6.00 ***The marine firefighter trainee shall operate the various communication equipment located on a fireboat(s) operating within the jurisdiction having authority.***

306-6.01 Radios

306-6.02 United States Coast Guard

306-6.03 Bridge to Bridge

306-6.04 Channel 16 (Emergency Channel for distress)

306-7.00 ***The marine firefighter trainee shall identify the main engine's function.***

306-7.01 List the danger signs associated with the engine.

306-8.00 ***The marine firefighter trainee shall operate the monitors on the fireboat(s) operating within the jurisdiction having authority.***

- 306-8.01 Place the monitors in the correct positions.
- 306-8.02 Identify the capacity, in gallons per minute, of the monitors.
- 306-8.03 Identify the principles of the monitor system.
- 306-8.04 Direct water as instructed to a pre-determined location.

306-9.00 ***The marine firefighter trainee shall identify, select, and demonstrate the proper use of nozzles on the fireboats operating within the jurisdiction having authority.***

- 306-9.01 Solid stream nozzle
- 306-9.02 Fog nozzle
- 306-9.03 Applicator nozzle
- 306-9.04 Master stream devices

306-10.00 ***The marine firefighter trainee shall identify the proper emergency procedures of the fireboat(s) operating within the jurisdiction having authority.***

- 306-10.01 Fire on fireboat
- 306-10.02 "Man overboard"
- 306-10.03 Flooding on the fireboat
- 306-10.04 Collision of fireboat

306-11.00 ***The marine firefighter trainee shall demonstrate the operation of emergency generator and lights on the fireboat operating within the jurisdiction having authority.***

- 306-11.01 Proper check of the generator.
- 306-11.02 Start the generator.
- 306-11.03 Demonstrate putting generator on line under a load.

306-11.04 Take generator off line.

306-11.05 Place shore power on line.

306-11.06 Proper shut down.

REFERENCE MATERIAL:

1. *Marine Fire Prevention, Firefighting and Fire Safety* (1990). Washington, DC: U.S. Department of Commerce, Maritime Administration.
2. *NFPA 1405: Land Based Fire Fighters Who Respond to Marine Vessel Fires* (2001 ed.). Quincy MA: NFPA Publications. National Fire Protection Association.

SECTION 307

MARINE RESCUE OPERATIONS

307-1.00 **The marine firefighter trainee shall demonstrate the proper techniques of searching for victims on a ship.**

307-1.01 The marine firefighter trainee, given the proper information, shall list two objectives to be achieved while searching for victims in a ship.

307-1.02 The marine firefighter trainee, given a two or more floor structure filled with simulated smoke, shall demonstrate establishing a rescue pattern for multiple rooms on at least two floors.

307-2.00 **The marine firefighter trainee shall identify various hazards involving rescue aboard ships.**

307-2.01 The marine firefighter trainee shall identify hazards likely to be encountered while performing rescue operations involving electrical room fires.

307-2.01a. Electrical shock

307-2.01b. Rotating equipment

307-2.01c. Difficulty in access

307-2.02 The marine firefighter trainee shall identify hazards likely to be encountered while performing rescue operations involving engine room fires.

307-2.02a. High-pressure steam leaks

307-2.02b. Rotating equipment

307-2.02c. Electrical shock

307-3.00 **The marine firefighter trainee shall demonstrate his/her position on the fireboat(s) operating within the jurisdiction having authority for a "man overboard" rescue.**

307-2.01 Life jacket rescue

307-2.02 Stokes basket rescue

307-2.03 Visual contact with victim

307-2.04 Boat hook

307-2.05 Life ring rescue

307-3.00 ***The marine firefighter trainee shall identify procedures of confined space rescue.***

307-3.01 List three hazards of confined spaces

307-3.01a. Oxygen deficient atmosphere

307-3.01b. Flammable atmosphere

307-3.01c. Toxic atmosphere

307-3.02 Testing the atmosphere

307-3.03 Ventilation

307-3.04 Self Contained Breathing Apparatus

307-3.05 Stand-by/Rescue

307-3.06 Safe entry

REFERENCE MATERIAL:

1. *Code of Federal Regulations*, 29 CFR Part 1910.146. U.S. Department of Labor, Occupational Safety & Health Administration, <http://www.osha.gov>
2. *NFPA 1405: Land Based Fire Fighters Who Respond to Marine Vessel Fires* (2001 ed.). Quincy MA: NFPA Publications. National Fire Protection Association.

SECTION 308

MARINE BLUEPRINT AND MANIFEST READING

308-1.00 **The marine firefighter trainee shall locate and identify the fire control plan aboard a vessel.**

308-1.01 The marine firefighter trainee shall identify where the fire control plan should be located aboard a vessel as specified by the International Maritime Organization.

308-2.00 **The marine firefighter trainee shall identify the contents of the fire control plan as required by SOLAS.**

308-2.01 Fire control stations

308-2.02 Means of access or escape from various compartments

308-2.03 Ratings of fire resistant bulkheads

308-2.04 Location of hose stations

308-2.05 Location and type of portable fire extinguishers

308-2.06 Location of semi-portable fire extinguishers

308-2.07 Fixed carbon dioxide and halon systems and their controls

308-2.08 Location of automatic sprinkler systems and their controls

308-2.09 Location of foam system and location of controls, including monitors

308-2.10 Fire detection systems

308-2.10a. Location of indicator panels

308-2.10b. Location of spaces protected

308-2.11 Alarm systems

308-2.12 Ventilation systems

308-2.13 Fire doors and their ratings

308-2.14 Location of international shore connection

308-3.00 ***The marine firefighter trainee shall identify the agencies/document that require all ships, U.S. flagged or foreign flagged entering U.S. ports, to have a fire control plan.***

308-3.01 SOLAS (Chapter II-2, Regulation 20)

308-3.02 Code of Federal Regulations (46 CFR 78.45-1 (a)(1) and 97.36-1(a))

308-4.00 ***The marine firefighter trainee shall be able to utilize the information contained on a fire control plan to assist in fire fighting operations.***

308-4.01 The marine firefighter trainee shall identify the symbols, adopted by SOLAS, and their colors for use on fire control plans.

308-4.02 The marine firefighter trainee, when given a fire control plan, shall be able to draw the appropriate symbol, adopted by SOLAS, for:

308-4.02a. Fire Damper

308-4.02b. Remote control fuel/lube oil valves

308-4.02c. Remote ventilation shut-off

308-4.02d. Remote control fire pumps or emergency switches

308-4.02e. Portable CO2 Fire extinguisher

308-4.02f. Fire detector

308-4.02g. Smoke detector

308-4.02h. International shore connection

308-4.02i. Fire pump

308-4.02j. Locker with additional breathing apparatus

- 308-4.02k. Emergency fire pump
- 308-4.02l. Primary means of escape
- 308-4.02m. Secondary means of escape

308-4.03 The marine firefighter trainee, when given a fire control plan that uses symbols different that adopted by SOLAS, shall demonstrate using the legend to determine the meaning of the symbols used in preparation of the particular plan.

308-5.00 ***The marine firefighter trainee, while touring a ship, shall locate the following equipment.***

- 308-5.01 Stretcher
- 308-5.02 Medical equipment
- 308-5.03 Life boat
- 308-5.04 Firefighter's equipment
- 308-5.05 Fire extinguishers
- 308-5.06 Fire stations
- 308-5.07 Fire pump

308-6.00 ***The marine firefighter trainee shall identify the classes of Hazardous Materials from a dangerous cargo manifest.***

- 308-6.01 Gross weight
- 308-6.02 Number of packages
- 308-6.03 Proper shipping name
- 308-6.04 Location of the hazardous materials

REFERENCE MATERIAL:

1. U. S. Department of Commerce. Marine Fire Prevention Fire Fighting and Fire Safety. Washington, DC: U.S. Department of Commerce, Maritime Administration, 1990

SECTION 309

WATER SURVIVAL

309-1.00 **The marine firefighter trainee shall demonstrate the ability to perform a swimming rescue.**

309-1.01 The marine firefighter trainee shall tread water for 10 minutes.

309-1.02 The marine firefighter trainee shall demonstrate the corrective action for removing a cramp.

309-1.03 The marine firefighter trainee shall swim 1/4 mile without resting.

309-1.04 The marine firefighter trainee shall swim on back, using legs alone for 20 yards.

309-1.05 The marine firefighter trainee shall enter the water while wearing firefighting clothing, disrobe and make a float device from the fire fighting clothing.

309-1.06 The marine firefighting trainee shall demonstrate the safety rules of swimming.

REFERENCE MATERIAL:

1. *Community Water Safety*, (September 1988 ed.). Houston TX: American Red Cross.

SECTION 310

**SHIPBOARD FIRE PROTECTION, EMERGENCY EQUIPMENT,
AND SYSTEMS**

310-1.00 **The marine firefighter trainee shall identify the uses of the equipment used during fire fighting operations.**

310-1.01 The marine firefighter trainee shall identify the nine types of extinguishing systems used on ships.

310-1.01a. Fire main System

310-1.01b. Sprinkler System

310-1.01b (1). Automatic

310-1.01b (2). Manual

310-1.01c. Water Spray systems

310-1.01d. Foam Systems

310-1.01e. Carbon dioxide system (CO₂)

310-1.01f. Dry Chemical Deck Systems

310-1.01g. Marine Halon 1301 Systems

310-1.01h. Inert Gas Systems for Tank Vessels

310-1.01i. Steam Smothering Systems

310-1.02 The marine firefighter trainee shall identify the operating components of the following types of extinguish systems used on ships.

310-1.02a. Fire main system

310-1.02b. Sprinkler system

310-1.02b (1). Automatic

310-1.02b (2). Manual

- 310-1.02c. Water spray systems
- 310-1.02d. Foam systems
- 310-1.02e. Carbon dioxide system (CO₂)
- 310-1.02f. Dry chemical deck systems
- 310-1.02g. Marine Halon 1301 systems
- 310-1.02h. Inert gas systems for tank vessels
- 310-1.02i. Steam smothering systems
- 310-1.03 The marine firefighter trainee shall identify the five types of detection systems used aboard a ship.
 - 310-1.03a. Automatic fire detection systems
 - 310-1.03b. Manual fire alarm systems
 - 310-1.03c. Smoke detection systems
 - 310-1.03d. Watchman's supervisory system
 - 310-1.03e. Combinations of the above
- 310-1.04 The marine firefighter trainee shall identify the three classes of watertight doors.
 - 310-1.04a. Class I
 - 310-1.04b. Class II
 - 310-1.04c. Class III
- 310-1.05 The marine firefighter trainee shall identify the characteristics and operation of the foam systems.
 - 310-1.05a. High expansion
 - 310-1.05b. Low expansion

- 310-1.06 The marine firefighter trainee shall identify the inert gas system for tank vessel.
- 310-1.06a. Gas generator
 - 310-1.06b. Scrubber
 - 310-1.06c. Blowers
 - 310-1.06d. Distribution lines
 - 310-1.06e. Valves
 - 310-1.06f. Instrumentation
 - 310-1.06g. Alarms and controls

REFERENCE MATERIAL:

1. *Marine Fire Prevention, Firefighting and Fire Safety* (1990). Washington, DC: U.S. Department of Commerce, Maritime Administration.
2. *NFPA 1405: Land Based Fire Fighters Who Respond to Marine Vessel Fires* (2001 ed.). Quincy MA: NFPA Publications. National Fire Protection Association.

SECTION 311

SUPPORT OF LAND BASE OPERATION

311-1.00 ***The marine firefighter trainee shall set up and perform pumping operations to the land base apparatus from a fireboat(s) operating within the jurisdiction having authority.***

311-1.01 The trainee shall list conditions that may result in pump damage.

311-1.02 The trainee shall identify all gauges and valves and demonstrate their usage.

311-1.03 The trainee shall demonstrate the proper technique of hooking up or connecting intake hoses to the pumps.

311-2.00 ***The marine firefighter trainee shall set up and perform pump operations to the waterside manifolds from a fireboat(s) operating within the jurisdiction having authority.***

311-3.00 ***The marine firefighter trainee shall set up and demonstrate pump operations to the International Shore Connection from a fireboat(s) operating within the jurisdiction having authority.***

311-4.00 ***The marine firefighter trainee shall set up and demonstrate pump operations to the International Shore Connection from a land based apparatus.***

REFERENCE MATERIAL:

1. *NFPA 1405: Land Based Fire Fighters Who Respond to Marine Vessel Fires* (2001 ed.). Quincy MA: NFPA Publications. National Fire Protection Association.

