

F103B U.S.C.G. BASIC FIREFIGHTING



2 Day Basic FF Course Schedule

Time	Day 1	Day 2	Time
8:00 AM	Orientation and Registration	Orientation	8:00 AM
		Team A and B	
8:30 AM	Shipboard Construction	PPE/Portable Extinguisher	8:15 AM
9:30 AM	Fire Prevention		
10:00 AM	Break	Break	9:45 AM
		Team A and B	
10:15 AM	Fire Science and Chemistry	SCBA/Deck Fire	10:00 AM
11:30	Fire Extinguishing Agents		
12:00 PM	Lunch	Lunch	12:00 PM
		Walkthrough of Manatee	1:00 PM
1:00 PM	Portable Fire Extinguisher		
1:30 PM	Fire Detection Systems	Team A- Inside Cabin Burn	2:00 Pm
2:00 PM	Fire Suppressing Systems	Team B – Search & Rescue	
2:30 PM	Break	Break	3:00 PM
2:45 PM	Shipboard Organization	Team B- Inside Cabin Burn	3:15 PM
		Team A – Search & Rescue	
3:15 PM	Fire Tactics		
3:45 PM	Personal Protective Equipment		
4:00 PM	Fire Fighting Equipment		
4:30 PM	Written Assessment	Wrap-Up & Critiques	4:30 PM
5:00 PM			5:00 PM

Section 1 - Shipboard Construction

Who sets the standards for the construction of a vessel?

Classification Societies

What are the two main flag state agencies?

United States Coast Guard (USCG) & United Kingdom Maritime Coastguard Agency (MCA)

What divides a ship into separated zones using thermal and structural boundaries that includes bulkheads, decks, fire doors, watertight doors, fire dampers and ventilation ducting?

Class A and B Divisions

What does the term **A-60** mean?

Class A rated doors or bulkheads rated to withstand heat and smoke for 60 minutes

Are Class C bulkheads considered fire-rated with regards to vessel construction?

No, Class C doors and partitions are not fire rated

What fire rating standard must an emergency escape route be protected to?

Escape routes must be protected to a Class A rating

What is the difference between a water-tight door and a weather-tight door?

Watertight doors are made to withstand both water and pressurization from both sides

Section 2 - Fire Prevention

What is the least expensive form of fire protection?

Fire prevention

From a fire prevention perspective, the term 'good housekeeping' means:

Keeping the areas clean and free of clutter, stowing and securing all gear properly.
General overall cleanliness of equipment.

List the (3) most common causes of shipboard fires:

1. Hot Work/Laundry/Engine Room
2. Smoking / Galley / Spontaneous Combustion
3. Electrical / Fuel Transfers

Hot work is defined as:

Any activity that produces a spark

How long after the completion of hot work should the fire watch remain on scene to ensure no fires start from sparks or embers?

30 Minutes

One type of combustion that occurs by self-heating and eventually auto-igniting is known as:

Spontaneous Combustion

What's one of the leading causes of most laundry room fires?

Improper cleaning of lint traps and discharge piping

What's one of the leading causes of most galley fires?

Poor house cleaning

In preparation for and during marine fuel transfer operations, which flag should be raised?

The (Red) Bravo Flag

What are some of the leading causes of lithium-Ion fires on small handheld devices (i.e., cell phones, laptops)?

After market charging cords and battery replacement

Section 3 - Fire Behavior

What are the three sides of the fire triangle?

Fire

The process of combining fuel, heat, and oxygen in sufficient amounts to support combustion is called:

Fuel, heat and oxygen

Flaming combustion cannot be supported below what oxygen concentrations?

16%

This poisonous gas is odorless, colorless and found in virtually every fire:

Carbon Monoxide (CO)

What are the three most common sources of heat energy?

1. Chemical
2. Mechanical
3. Electrical

Heat that transfers from a hot object to a cooler object until both are of the same temperature is known as:

The Law of heat flow

The transfer of heat from one body to another body by direct contact is known as:

Conduction

A hand that is held a few inches above a flame feels the heat by:

Convection

A hand that is held a few inches to the side of a flame feels the heat by:

Radiation

The minimum temperature to which a fuel in air must be heated to start self-sustained combustion without a separate ignition source is:

Ignition Temperature

The minimum temperature at which a liquid gives off enough vapors to momentarily flash when exposed to an ignition source is called:

Flash Point

The minimum temperature at which a liquid gives off enough vapors to support continuous combustion once ignited is called:

Fire Point

The minimum and maximum percentages of fire gases in air that burns once it is ignited is known as:

Flammable (Explosive) range

Which class of fire involves ordinary combustible materials?

Class A

Which class of fire involves flammable, combustible liquids and gases?

Class B

Which class of fire involves energized electrical equipment?

Class C

Which class of fire involves combustible metals?

Class D

What is the term used for a small fire in the beginning stage?

Incipient Phase

The tendency of gases rising to form layers according to their temperature is also known as:

Thermal Layering

A condition that occurs when flames move across unburned gases accumulated overhead during a fire's progression is known as a:

Rollover

During what stage of a fire does the amount of heat energy released begin to decline and become fuel controlled?

Decay

What is the oxygen content during the decay stage?

15% down to 3%

An explosive ignition of gases that results when air mixes with hot, unburned gases is known as a:

Backdraft

Section 4 - Fire Extinguishing Agents

What are four common types of fire extinguishing agents that may be found aboard a vessel?

Water, Dry Chemical, CO2, and Foam

When water is converted to steam at 212F, it expands approximately how many times?

1,700:1 (Expansion Ratio)

Water is the most used fire extinguishing agent on (a) what class of fire, and (b) extinguishes the fire how?

- a. **Class A**
- b. **Temperature reduction**

Carbon Dioxide (CO2) extinguishes a fire by _____ oxygen.

Displacing the oxygen

True or False: CO2 conducts electricity.

False

How does a dry chemical fire extinguisher put out a fire?

Inhibiting the chemical chain reaction

What class fires does Dry Powder extinguish?

Class D

What's three things that foam does to extinguish a flammable liquid fire?

1. **Cooling**
2. **Smothering**
3. **Separating**

Why is foam the best extinguishing agent for flammable liquid fires?

Vapor Suppression

The process of mixing foam concentrate and water together is called:

Proportioning

What are the three (3) methods of applying a foam stream?

1. Roll-on
2. Rain Down
3. Bank Down

Section 5 - Portable and Semi-portable Fire Extinguishers

Portable stored pressure water fire extinguishers are useful for extinguishing which class of fires?

Class A fires only

Dry chemical fire extinguishers are effective in extinguishing which class of fires?

A, B and C

What is the effective range of a portable dry chemical fire extinguisher?

The range is 5 to 20 feet

Carbon dioxide fire extinguishers are effective in extinguishing which classes of fire?

B & C

What is the effective range of a portable carbon dioxide fire extinguisher?

3 to 5 feet

Dry power fire extinguishers are effective in extinguishing which class fires?

Class D

Wet chemical fire extinguishers are effective in extinguishing which class fires?

Class K, can also be used on Class B

Aqueous film-forming foam wheeled semi-portable fire extinguishing units are commonly found in:

Machinery spaces / Helicopter decks

When referring to portable fire extinguishers, what does P.A.S.S. stand for?

P-Pull the pin / A-Aim the nozzle / S-Squeeze the handle / S-Sweep the nozzle at the base of the fire

The first action of the person discovering a fire is to:

Sound the Alarm

Performing this initial action can make all the difference in the containment of a fire and prevent further injury:

Closing the door to the fire area

Section 6 - Fire Detection Systems / Fixed Fire Suppression Systems

The main fire alarm panel is normally located where?

On the Bridge

The secondary power system must make the detection and signaling system fully operational within ___ seconds after the failure of the main power supply.

30 seconds

Who is responsible for investigating the cause of an alarm and/or sounding the general alarm?

Watch Officer

Why is a smoke detector one of the most reliable warning devices available?

Virtually all fires produce smoke

What is the purpose of a flashing strobe light emanating from a device marked "Fire"?

It is a visual indicator and notification for loud spaces

Once a CO2 system is activated, the mechanism for driving the systems components is what?

The actual CO2 agent sets the system in motion

The minimum percentage of carbon dioxide needed to extinguish fires in a confined space with flammable liquids is:

34%

What is the minimum time delay on a fixed CO2 system?

20 seconds

What is the purpose of the time delay in a fixed CO2 system?

Evacuation of personnel and shut down of ventilation

What is the most common heat-sensing devices installed in automatic sprinklers?

Glass Bulbs and Fusible Devices

High fog uses how much less water than traditional sprinkler extinguishing systems?

1/10th or 90% less water than traditional sprinkler systems

Section 8 - Shipboard Organization

The person that is overall in charge of the safe operation and navigation of the ship and its crew is:

The Captain or Master of the vessel

This is the process of evaluating on scene fire conditions and reporting them to the bridge:

Size up

Who initially sizes-up a fire and what info is needed for a size-up?

The On-Scene Leader role is to size-up the fire. The information needed is the size and type of fire, where it is located, and initial action to be taken any Search and Rescue needs

Who oversees the fire hose team?

Fire Team Leader

How many responders are recommended for a 1½" fire hose?

2 personnel

What is the General Alarm sound signal?

Seven short blasts followed by one long blast of the ship's whistle

The document that is created by the captain to identify roles and responsibilities in emergency is called:

Muster List

List two assignments that would be found on a muster list:

Fire / Medical / Man Overboard / Collisions / Lifesaving Appliances

During a fire emergency, all crewmembers not present and accounted for during a muster are assumed to be:

Trapped, injured, or otherwise threatened by the fire

Who is required to react to an emergency and perform up to the level of their ability?

All crewmembers

Fire Patrols are required on passenger vessels during what time periods?

22:00 to 07:00

What information would you find on a set of fire control plans?

Main Vertical zones / Class A & B Divisions / Fire Detection Systems Fire Alarm / Fix systems / Fire Extinguishing Appliances

Section 9 - Fire Tactics

This method of fire attack directs the stream of water directly at the seat of the fire:

Direct Attack

This method of fire attack directs the stream of water above the fire to generate steam that cools the space:

Indirect attack

Using both the direct and indirect attack during the extinguishment process is called:

Combination attack

What are three things that should be done prior to opening a door that is hot to the touch?

1. Cool the door with water
2. Stay out of the path of travel
3. Take up position opposite side of the hinges

The key indicator for choosing a method of fire attack is usually determined by:

Stage of fire development

When performing search and rescue, you should always maintain contact with:

Maintain contact with the bulkhead and your partner

Dewatering procedures should be considered when?

At the onset of any water application

This is the process of searching for and extinguishing remaining fire after the main body of fire has been extinguished:

Overhaul

Section 10 - Personal Protective Equipment (PPE)

How many layers of protection does bunker gear provide?

Three (3): Outer shell, Moisture barrier, and thermal layer with liner

What are the three main components of a Self-Contained Breathing Apparatus (S.C.B.A.)?

1. Backpack and Harness assembly
2. Air Bottle
3. Mask

What is an important safety check that must be done before donning the Self-Contained Breathing Apparatus (S.C.B.A.)?

Check the air pressure gauge on air bottle

Most 30-minute bottles allow the performance standard of at least how many minutes of heavy work?

15 minutes

What is one of the benefits of a positive-pressure S.C.B.A?

Protection against outside contaminants entering the face piece

S.C.B.A.s should be inspected how often?

Weekly and after every use

Section 11 - Fire Equipment

What size fire hose diameters are typically found on vessels?

1 1/2" and 2 1/2"

Fire hoses come in standard lengths of:

50 foot and 100 foot lengths

What are some various ways a fire hose can be damaged?

Thermal, Organic, Chemical and Mechanical

A hose coupling is used to:

To join two hoses of the same diameter together

What appliance is used to connect the vessel's fire main with an outside water source?

International Shore Connection

To stop the flow of water on the fire hose nozzle, the bail needs to be in what position?

Forward to close

To create a straight stream of water, which way must the fire fighter turn the nozzle?

Turn to the Right (Right to Fight)

What are the two most common types of nozzle patterns used in firefighting?

1. 30 degree power cone
2. Straight stream

What is a wide fog pattern used for?

Personnel Protection

What are some items you would find in a fire hose cabinet?

Water / Fire Hose / Fire nozzle / Spanner wrench

How does a fire blanket extinguish a fire?

Smotherers