

Report Date: 30 Apr 2012

**Summary Report for Individual Task
551-8ST-1023
Extinguish a Fire Aboard a Vessel
Status: Approved**

DISTRIBUTION RESTRICTION: Approved for public release; distribution is unlimited.

DESTRUCTION NOTICE: None

Condition: Aboard a vessel; at sea or pierside; day or night; under all sea and weather conditions; in an emergency or for a routine drill.

Standard: The Soldier identified the class of fire and selected the proper method to extinguish the fire IAW ABS Guidance Notes on Fire-Fighting Systems and Task 551-8ST-1044 (Operate Fire Extinguishing Appliances).

Special Condition: None

Special Standards: None

Special Equipment:

MOPP:

Task Statements

Cue: None

DANGER
None

WARNING
None

CAUTION
None

Remarks: None

Notes:

Performance Steps

1. Extinguish a Class A fire using one of these methods.

Note: Knowledge the Soldier must have

K-1: Class A fires involve three groups of materials commonly found onboard a vessel:

" Wood and wood-based materials

" Textiles and fibers

" Plastics and rubber

K-2: The Soldier must know how to operate fire extinguishing systems (Task 551-8ST-1044).

a. Use a straight stream from the fire main system (most effective method for cooling the fuel surface):

(1) Direct the stream into the seat of the fire surface with water provided by the fire main system.

(2) Bounce the stream off the bulkhead or overhead to get around an obstacle between the fire and the nozzle.

Note: Bouncing the stream off the bulkhead/overhead method can also be used to break a solid stream into a spray-type stream, which will absorb more heat. It is useful in cooling an extremely hot passageway that is keeping firefighters from advancing toward the fire.

b. Use a fog stream from the fire main system (to cool the flame and the surrounding environment).

c. Use a dry chemical (mono-ammonium phosphate) extinguisher (to inhibit the chemical reaction of the fire process).

d. Use aqueous film forming foam (AFFF).

Note: In addition, other types of extinguishing mediums, such as certain types of dry chemicals are also effective on Class A combustibles (Figure 551-8ST-1023_01).

2. Extinguish a Class B fire using one of these methods.

a. Use a fixed fire-fighting system (i.e., fixed gas or fixed water system).

b. Use dry chemicals (to interrupt the chain reaction of the combustion, or oxidation, process).

c. Use a portable CO₂ extinguisher:

(1) Aim the horn at the base of the fire nearest the operator.

(2) Move the discharge slowly back and forth across the fire while the operator simultaneously moves forward slowly. (The result should be a "sweeping" of the flames off the burning surface, with some carbon dioxide "snow" left on the surface.)

d. Use foam (as a smothering agent and to provide cooling as a secondary effect).

e. Use low velocity fog (in spaces where entry is difficult or impossible):

(1) Low velocity fog is obtained by attaching a special applicator to a Navy all purpose nozzle.

(2) Low velocity fog applicators are tubes or pipes that are angled at 60° or 90° at the water outlet end. The 4-foot applicator used aboard Army vessels has a 60° bend. The 10-foot applicator has a 90° bend at the end.

(a) Some heads are shaped somewhat like a pineapple, with tiny holes angled to cause minute streams to bounce off one another and create a mist.

(b) Some heads resemble a cage with a fluted arrow inside. The point of the arrow faces the opening in the applicator tubing. Water strikes the fluted arrow and then bounces in all directions, creating a fine mist.

3. Extinguish a Class C fire.

- a. De-energize the circuit (i.e., pull the plug), if possible, of the electrical equipment involved with the fire.
- b. Use a non-conducting agent, such as a CO2 portable extinguisher or dry chemical:

(1) To use a CO2 portable extinguisher, aim the discharge at the source of the fire that involves electrical equipment.

CAUTION

In considering the application of a fire extinguishing agent, an electrical circuit or panel should always be considered energized.

(2) De-energize the equipment as soon as possible to eliminate the chance of shock.

WARNING

Do NOT use water to extinguish a Class D fire. Frequently, there is a violent reaction with water, which may result in the spreading of the fire and/or explosion.

4. Extinguish a Class D fire using a powder extinguishing agent, such as sand or graphite, or salts.

	Fire Main System	Fired Gas Extinguishing System (CO ₂)	Fired Water Extinguishing System	Foam Extinguishing System	Portable/Semi-portable Fire Extinguishers
Class A fire	Straight stream (most effective); high and low velocity fog stream	CO ₂ gas	Water spray/sprinkling/in list systems	AFFF and certain types of wetwater foam	Soda-ash; cartridge-operated; stored pressure water extinguisher; dry chemical (monoammonium phosphate)
Class B fire	Low velocity fog stream (suitable for difficult to reach spaces)	CO ₂ gas	Water spray/sprinkling/in list systems	Dry chemical foam; mechanical oily foam; protein foam; AFFF	Carbon dioxide extinguishers; dry chemical (monoammonium phosphate, potassium chloride, potassium bicarbonate, urea potassium bicarbonate)
Class C fire	Not Recommended	CO ₂ gas	Water spray/sprinkling/in list systems	Not Recommended. However, the supply of current to the electrical circuit can be interrupted or broken, then foam can be used.	Carbon dioxide extinguishers; dry chemical (monoammonium phosphate, potassium chloride, potassium bicarbonate, urea potassium bicarbonate)
Class D fire	Not recommended	NOT SUITABLE	Water spray/sprinkling/in list systems	Not recommended	NOT SUITABLE
Class D fire may also be extinguished using a powder extinguishing agent, such as sand or graphite, or salt.					
CAUTION: Fire-fighting foam is not recommended for use on materials that react with water, such as magnesium, titanium, potassium, lithium, calcium, zirconium, sodium and zinc.					

Figure 551-8ST-1023_01 (Common Extinguishing Agents for Various Classes of Fires)

(Asterisks indicates a leader performance step.)

Evaluation Preparation: Ensure that all information, references and equipment required to perform the task are available. Use the FM and the evaluation guide to score the soldier's performance. Brief the soldier. Tell the soldier what he is required to do IAW the task conditions and standards.

PERFORMANCE MEASURES	GO	NO-GO	N/A
1. Extinguish a Class A fire?			
2. Extinguish a Class B fire?			
3. Extinguish a Class C fire?			
4. Extinguish a Class D fire?			

Supporting Reference(s):

Step Number	Reference ID	Reference Name	Required	Primary
	062F6D10	Firefighting	Yes	No
	FM 55-502	Army Watercraft Safety (superseded by FM 4-01.502)	Yes	No

Environment: Environmental protection is not just the law but the right thing to do. It is a continual process and starts with deliberate planning. Always be alert to ways to protect our environment during training and missions. In doing so, you will contribute to the sustainment of our training resources while protecting people and the environment from harmful effects. Refer to FM 3-34.5 Environmental Considerations and GTA 05-08-002 ENVIRONMENTAL-RELATED RISK ASSESSMENT.

Safety: In a training environment, leaders must perform a risk assessment in accordance with FM 5-19, Composite Risk Management. Leaders will complete a DA Form 7566 COMPOSITE RISK MANAGEMENT WORKSHEET during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, NBC Protection, FM 3-11.5, CBRN Decontamination. In a training environment, leaders must perform a risk assessment in accordance with FM 5-19, Composite Risk Management. Leaders will complete a DA Form 7566 COMPOSITE RISK MANAGEMENT WORKSHEET during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, NBC Protection, FM 3-11.5, CBRN Decontamination.

Prerequisite Individual Tasks :

Task Number	Title	Proponent	Status
551-88H-1801	Perform Fire Fighting Techniques	551 - Transportation (Individual)	Approved

Supporting Individual Tasks :

Task Number	Title	Proponent	Status
551-88H-1801	Perform Fire Fighting Techniques	551 - Transportation (Individual)	Approved

Supported Individual Tasks : None

Supported Collective Tasks : None