

U.S.C.G. Merchant Marine Exam  
Second/Third Mate of Unlimited Tonnage  
Q112 Deck Safety  
(Sample Examination)

**Choose the best answer to the following Multiple-Choice Questions.**

1. In illustration D039SA below, what is the fire control plan symbol represented by number (67)?
- A. Emergency switchboard
  - B. Gas detector
  - C. Inert gas installation
  - D. Emergency generator

Correct answer: D

2. Great Lakes vessels, using liferafts, must have sufficient liferaft capacity on each side of the vessel to accommodate how many persons onboard?
- A. 50% of the persons on board
  - B. 100% of the persons on board
  - C. 150% of the crew
  - D. 100% of the persons normally assigned to those spaces

Correct answer: B

3. According to the Lifesaving regulations in Subchapter W, fire and abandon ship drills must be held within 24 hours of leaving port if the percentage of the crew that has not participated in drills aboard that particular vessel in the prior month exceeds which percentage?
- A. 5%
  - B. 10%
  - C. 25%
  - D. 40%

Correct answer: C

4. What should you do if you have transmitted a distress call a number of times on channel 16 and have received no reply?
- A. Turn up the volume on the receiver before transmitting again.
  - B. Repeat the message using any other channel on which you might attract attention.
  - C. Key the microphone several times before transmitting again.
  - D. Report the problem to the head electrician.

Correct answer: B

5. You are calling another vessel by radiotelephone using the International Code of Signals. He responds with the words "Alpha Sierra". What does this indicate?
- A. You should send your message in plain language
  - B. You should proceed with your message
  - C. He cannot accept traffic immediately
  - D. You should send your message in International Code

Correct answer: C

6. What could be a result of insufficient lubrication of lifeboat winches and davits?

- A. Moisture accumulation in winch motor damaging the electrical wiring
- B. Freezing of gears in cold weather
- C. Corroding of sheaves on the davits so they will not rotate
- D. All of the above

Correct answer: D

7. A vessel's bottom will be subjected to tension when weight is concentrated in which location(s)?

- A. Amidships
- B. Aft
- C. At both ends of the vessel
- D. Forward

Correct answer: A

8. The vessel shown in illustration D025DG has broken down and you are going to take her in tow. The wind is coming from her starboard beam. You are making more leeway than she. Where should you position your vessel when you start running lines?

- A. A
- B. B
- C. C
- D. D

Correct answer: A

9. A situation has occurred where it becomes necessary for you to be towed. What action should be taken to prevent your vessel from yawing?

- A. Throw excess weight overboard
- B. Shift weight to the stern
- C. Shift weight to the center of the boat
- D. Shift weight to the bow

Correct answer: B

10. There is a fire in the crew's quarters of your vessel. Which action should you take FIRST?

- A. Ventilate the quarters as much as possible
- B. Close all ventilation to the quarters if possible
- C. Prepare to abandon ship
- D. Attempt to put the fire out yourself before sounding the alarm

Correct answer: B

11. In plugging submerged holes, why are rags, wedges, and other materials used in conjunction with plugs?

- A. To reduce the possibility of stress fractures
- B. To reduce the water pressure on the hull
- C. To prevent progressive flooding
- D. To reduce the water leaking around the plugs

Correct answer: D

**12.** With the sprinkler system and air system on and all hatches shut, what will the survival craft provide protection from?

- A. Hurricanes
- B. A nuclear fallout environment
- C. A fire and toxic environment
- D. A drop greater than 10 feet

Correct answer: C

**13.** Which signal should be used to send the group "Distance 750 nautical miles"?

- A. D750N
- B. R750
- C. D750
- D. R750N

Correct answer: B

**14.** Your vessel has a displacement of 19,800 tons. It is 464 feet long, and has a beam of 64 feet. You have timed its rolling period to be 21.0 seconds in still water. What is your vessel's approximate GM?

- A. 1.1 ft
- B. 1.3 ft
- C. 1.6 ft
- D. 1.8 ft

Correct answer: D

**15.** What is the weight of the liquid displaced by a vessel floating in sea water equal to?

- A. The weight required to sink the vessel
- B. The displaced volume
- C. The reserve buoyancy
- D. The total weight of the vessel

Correct answer: D

**16.** How can you indicate that your vessel is in distress?

- A. Displaying a large red flag
- B. Displaying three black balls in a vertical line
- C. Continuously sounding the fog whistle
- D. Sounding five or more short and rapid blasts on the whistle

Correct answer: C

**17.** To ensure receipt of all relevant MSI, a NAVTEX receiver should be turned on at least how many hours prior to departure from port?

- A. 8
- B. 6
- C. 4
- D. 2

Correct answer: C

- 18.** The water in which a vessel floats provides vertical upward support. Which term is regarded as the point through which this support is assumed to act?
- A. The center of buoyancy
  - B. The center of gravity
  - C. The center of effort
  - D. The center of flotation

Correct answer: A

- 19.** The all-purpose nozzle will produce a fog spray when you take which action?
- A. Pull the nozzle handle all the way back toward the operator
  - B. Insert a fog applicator between the fire hose and nozzle
  - C. Pull the nozzle handle back to a position where the handle is perpendicular to the plane of the nozzle
  - D. Push the nozzle handle forward as far as it will go

Correct answer: C

- 20.** What is the SAFEST action to take with an accumulation of oily rags?
- A. The rags should be kept in nonmetal containers
  - B. The rags should be cleaned thoroughly for reuse
  - C. The rags should be stored in a locker out of direct sunlight
  - D. The rags should be discarded as soon as possible

Correct answer: D

- 21.** You are testing a tank that contained gasoline by using a combustible gas indicator. Under testing, the tank sample caused the needle to move rapidly to 100 on the dial then fall to zero. What is the concentration of flammable gas?
- A. The explosimeter is defective and giving a false reading.
  - B. Over the flammable range
  - C. Within the flammable range
  - D. Less than the flammable range

Correct answer: B

- 22.** The cook has reported a fire in the deep fat fryer. What class of fire would this be?
- A. Class A
  - B. Class B
  - C. Class D
  - D. Class K

Correct answer: D

- 23.** Where should the sea painter of a lifeboat be secured?
- A. Anywhere along the inboard side of the boat
  - B. Secured to the bow of the lifeboat
  - C. As close as possible to amidships of the lifeboat
  - D. To the forward thwart on the inboard side

Correct answer: D

**24.** Which is the term given to the joint formed when two steel plates are placed end-to-end?

- A. Butt
- B. Bond
- C. Bevel
- D. Seam

Correct answer: A

**25.** Which item is a safety feature provided on all inflatable liferafts?

- A. Overhead safety straps
- B. Built in seats
- C. Water stabilizing pockets
- D. Internal releasing hooks

Correct answer: C

**26.** If you have to abandon ship, and enter a liferaft, what should be your main course of action?

- A. Head for the closest land
- B. Head for the closest sea lanes
- C. Get a majority opinion
- D. Remain in the vicinity of the sinking vessel

Correct answer: D

**27.** You are proceeding to a distress site. The survivors are in liferafts. What will make your ship more visible to the survivors?

- A. Steering a sinuous course
- B. Turning on all available deck lights at night
- C. Dumping debris over the side to make a trail to your vessel
- D. Steering a zig-zag course

Correct answer: B

**28.** What does subtracting GM from KM yield?

- A. BL
- B. KG
- C. GM
- D. FS

Correct answer: B

**29.** After having activated the emergency position indicating radio beacon, which is the appropriate action to take?

- A. Leave it on continuously
- B. Turn it off for 5-minutes every half-hour
- C. Turn it off during daylight hours
- D. Turn it off and on at 5-minute intervals

Correct answer: A

**30.** Which statement about AMVER reports is TRUE?

- A. In the body of the sailing plan report, the letter G is used to indicate a great circle course.
- B. Distress messages should be sent to the AMVER center.
- C. There are four different message reports in the AMVER system.
- D. The sailing plan may be sent in any reasonable time before departure, but not later than 12 hours after departure.

Correct answer: C

**31.** You are at sea and have received a General Emergency message announcing the outbreak of war in Europe. You are directed to comply with the instructions in NGA (NIMA) PUB 117, Chapter Eight. Which statement is TRUE?

- A. You should only enter a port in the danger zone during hours of darkness
- B. You should attempt to coordinate with the Shipping Control Team
- C. When over 200 miles from a port in the danger zone, you should not darken ship
- D. If on a coastwise voyage along the east coast of the U.S., you should put into the nearest port

Correct answer: B

**32.** You are reading the draft marks as shown in illustration D032DG. The water level forward leaves about 4 inches of the 11 visible, and the water level aft is at the top of the 10. What is the mean draft?

- A. 10'-06"
- B. 10'-08"
- C. 10'-10"
- D. 11'-02"

Correct answer: C

**33.** When a vessel is stationary and in a hogging condition, the main deck is under which stress?

- A. Compression stress
- B. Racking stress
- C. Shear stress
- D. Tension stress

Correct answer: D

**34.** The most detrimental effect on initial stability is a result of liquids \_\_\_\_\_.

- A. flowing in and out of a holed wing tank
- B. flowing from fore to aft within a vessel
- C. pocketing in a slack tank as a vessel heels
- D. flowing from side to side within the vessel

Correct answer: A

- 35.** You hear the general alarm and ship's whistle sound for over 10 seconds. What does this signal mean?
- A. Abandon ship
  - B. Fire and emergency
  - C. Man overboard
  - D. Dismissal from fire and emergency stations

Correct answer: B

- 36.** The SS AMERICAN MARINER is ready to bunker with drafts of FWD 18'-06", AFT 20'-06". After all bunkers are on board, soundings indicate the tonnages shown in table ST-0099 below. Use the white pages of The Stability Data Reference Book to determine the free surface correction.

**ST-0099**

DB 1 CL	48.2	DB 5 CL	180.0
DB 1A CL	81.9	DB 5 P	178.0
DB 2 P	71.2	DB 5 S	180.0
DB 2 S	71.2	DB 6 CL	242.3
DB 3 CL	227.6	DB 7 P	94.6
DB 3 P	55.6	DB 7 S	94.6
DB 3 S	55.6	DT 6 P	201.2
DB 4 CL	200.0	DT 6 S	201.2
DB 4 P	128.1	DT 7 P	128.8
DB 4 S	128.1	DT 7 S	128.8

- A. 0.72 foot
- B. 0.68 foot
- C. 0.91 foot
- D. 1.10 feet

Correct answer: C

- 37.** Shell plating is \_\_\_\_\_.

- A. synonymous with decking
- B. a hatch cover
- C. the galvanizing on steel
- D. the outer plating of a vessel

Correct answer: D

- 38.** A ship station license for your radiotelephone is valid for which of the following terms?

- A. One year
- B. Two years
- C. Ten years
- D. The life of the vessel

Correct answer: C

**39.** Utilizing illustration D035SA below, the Master has ordered you to pull the remote ventilation shut down, where is it found?

- A. Starboard side exterior, frame 132
- B. Port side of the wheelhouse, frame 122
- C. Port side fan room, frame 138
- D. Starboard side of the wheelhouse, frame 122

Correct answer: D

**40.** If you wear extra clothing when entering the water after abandoning ship it will accomplish which of the following?

- A. Make it more difficult to breathe
- B. Make you more buoyant
- C. Help preserve body heat
- D. Reduce your body heat

Correct answer: C

**41.** What is the purpose of a striking plate?

- A. It provides a surface for applying force on machinery
- B. It prevents valve stem over-travel
- C. It provides a landing surface for the sounding bob
- D. It absorbs machinery vibration

Correct answer: C

**42.** What is the minimum number of people required to safely handle a 1-1/2 inch fire hose?

- A. 1
- B. 2
- C. 3
- D. 4

Correct answer: B

**43.** Yawing is angular motion of the vessel about what axis?

- A. Centerline
- B. Longitudinal
- C. Vertical
- D. Transverse

Correct answer: C

**44.** The SS AMERICAN MARINER has drafts of: FWD 28'-00", AFT 30'-04". Use the white pages of the Stability Data Reference Book to determine the drafts if you ballast the forepeak with 110.8 tons of seawater.

- A. FWD 28'-09.8", AFT 29' 10.4"
- B. FWD 28'-08.2", AFT 29'-11.6"
- C. FWD 28'-10.6", AFT 29' 09.8"
- D. FWD 28'-09.0", AFT 29' 11.0"

Correct answer: A

**45.** Which statement about firefighting foam is TRUE?

- A. Foam can ONLY be used to extinguish class A fires.
- B. To be most effective, foam should be directed at the base of the fire.
- C. Foam conducts electricity.
- D. Foam is most effective on burning liquids which are flowing.

Correct answer: C

**46.** Aboard ship, which term is given to the vertical flat plates running transversely and connecting the vertical keel to the margin plates?

- A. Intercostals
- B. Floors
- C. Stringers
- D. Girders

Correct answer: B

**47.** If your vessel will list with equal readiness to either side, the list is most likely caused by which condition?

- A. Excessive freeboard
- B. Pocketing of free surface
- C. Negative GM
- D. Off center weight

Correct answer: C

**48.** Which vessel is NOT required to have a radiotelephone?

- A. A 34-foot vessel engaged in towing
- B. A dredge operating in a channel
- C. A 12-meter private yacht
- D. A vessel of 100 GT carrying 50 passengers for hire

Correct answer: C

**49.** Which signaling devices are required on inflatable liferafts?

- A. Lantern
- B. Very pistol
- C. Air horn
- D. Orange smoke signal

Correct answer: D

**50.** If heavy smoke is coming from the paint locker, what should be the FIRST firefighting response?

- A. Release the CO2 flooding system
- B. Enter and use a portable extinguisher
- C. Open the door to evaluate the extent of the fire
- D. Secure the ventilation

Correct answer: D

**51.** A drill must be conducted in the use of the line throwing appliance. How often is this drill required to be conducted?

- A. 2 months
- B. 3 months
- C. 4 months
- D. 5 months

Correct answer: B

**52.** How should latitude 54°18.9'N be written when preparing an AMVER report?

- A. 54°N
- B. 5419N
- C. 54.3N
- D. 0543N

Correct answer: B

**53.** Which is the primary method by which water spray puts out fires?

- A. By removing the oxygen
- B. Diluting combustible vapors
- C. Cooling the fire below the ignition temperature
- D. By removing combustible material

Correct answer: C

**54.** Which kind(s) of broadcasts are available through Safety NET?

- A. Hourly NOAA weather broadcasts from the NWS
- B. MSI and messages to pre-defined groups of subscribers
- C. Coastal weather broadcasts
- D. MSI and vessel traffic lists

Correct answer: B

**55.** Which defines the function of a spark arrestor?

- A. It keeps sparks from falling into an open tank
- B. Grounds static electricity reducing chance of explosion
- C. Utilized to secure covers on ullage openings
- D. Prevents sparks from getting out of an engine's exhaust system

Correct answer: D

**56.** Your vessel displaces 564 tons. The existing deck cargo has a center of gravity of 1.5 feet above the deck and weighs 41 tons. If you load 22 tons of ground tackle with an estimated center of gravity of 2.5 feet above the deck, what is the final height of the CG of the deck cargo?

- A. 1.62 feet
- B. 1.85 feet
- C. 2.10 feet
- D. 2.46 feet

Correct answer: B

**57.** Which statement is TRUE concerning the "flash point" of a substance?

- A. It is the temperature at which the released vapors will fall within the explosive range.
- B. It is lower than the ignition temperature.
- C. It is the temperature at which a substance will spontaneously ignite.
- D. It is the temperature at which a substance, when ignited, will continue to burn.

Correct answer: B

**58.** Which signal is used by a rescue unit to indicate, "Avast hauling"?

- A. Firing of a green star signal
- B. Firing of a red star signal
- C. Three white star rockets fired at one-minute intervals
- D. An orange smoke signal

Correct answer: B

**59.** The vessel shown in illustration D025DG has broken down and you are going to take her in tow. The wind is on her starboard beam. She is making more leeway than you. Where should you position your vessel when you start running lines?

- A. A
- B. B
- C. C
- D. D

Correct answer: D

**60.** Which is TRUE of a distress signal?

- A. It shall consist of 5 or more short blasts of the fog signal apparatus
- B. It may be used individually or in conjunction with other distress signals
- C. It shall consist of the raising and lowering of a large white flag
- D. It is used to indicate doubt about another vessel's intentions

Correct answer: B

**61.** Which statement is TRUE concerning a motor lifeboat?

- A. It is propelled by engine or hand-propelling gear.
- B. It must be able to maintain a loaded speed of 6 knots.
- C. It has a sufficient fuel capacity, if motorized, for 48 hours of operation.
- D. All of the above

Correct answer: B

**62.** When patching holes in the hull, how can pillows, bedding, and other soft materials be used?

- A. As strongbacks
- B. As gaskets
- C. As wedges
- D. As shores

Correct answer: B

**63.** Which term is used to describe the horizontal port or starboard movement of a vessel?

- A. Heave
- B. Yaw
- C. Sway
- D. Surge

Correct answer: C

**64.** Which type of portable fire extinguisher is NOT designed for use on flammable liquid fires?

- A. Foam
- B. Water (cartridge-operated)
- C. Carbon dioxide
- D. Dry chemical

Correct answer: B

**65.** Immediately after abandoning a vessel, lookouts should be posted aboard liferafts to look for \_\_\_\_\_.

- A. food and water
- B. land
- C. bad weather
- D. survivors in the water

Correct answer: D

**66.** Which meets the requirement of an independent backup system on an electric start survival craft?

- A. A second rechargeable spare battery
- B. A pneumatic system
- C. A hydraulic system
- D. A backup system is not required

Correct answer: A

**67.** When a vessel's LCG is aft of her LCB, how will the vessel respond?

- A. The vessel will have a list
- B. The vessel will be trimmed by the head
- C. The vessel will be trimmed by the stern
- D. The vessel will be on an even keel

Correct answer: C

**68.** Where are the grab rails of a metal lifeboat normally located?

- A. Along the turn of the bilge
- B. Near the top of the gunwale
- C. At the bow and at the stern
- D. Along each side of the keel

Correct answer: A

**69.** What is the function of wearing rings found on some centrifugal pumps?

- A. Seal pump shaft against entry of air
- B. Isolate the outlet side from the inlet side
- C. Absorb erosion of high-velocity discharge stream
- D. Dampen the turbulent discharge flow

Correct answer: B

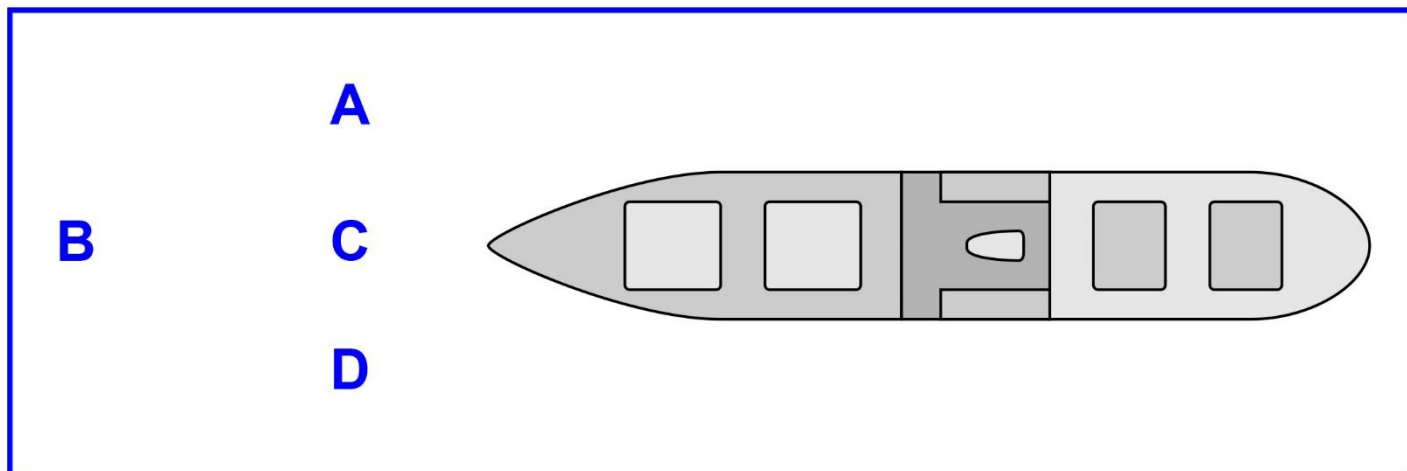
**70.** If a vessel takes a sudden, severe list or trim from an unknown cause, which action should you take FIRST?

- A. Assume the cause is environmental forces
- B. Counterflood
- C. Determine the cause before taking countermeasures
- D. Assume the shift is due to off-center loading

Correct answer: C



**D025DG**





**D032DG**

**12**  
**11**  
**10**  
**9**  
**8**  
**7**

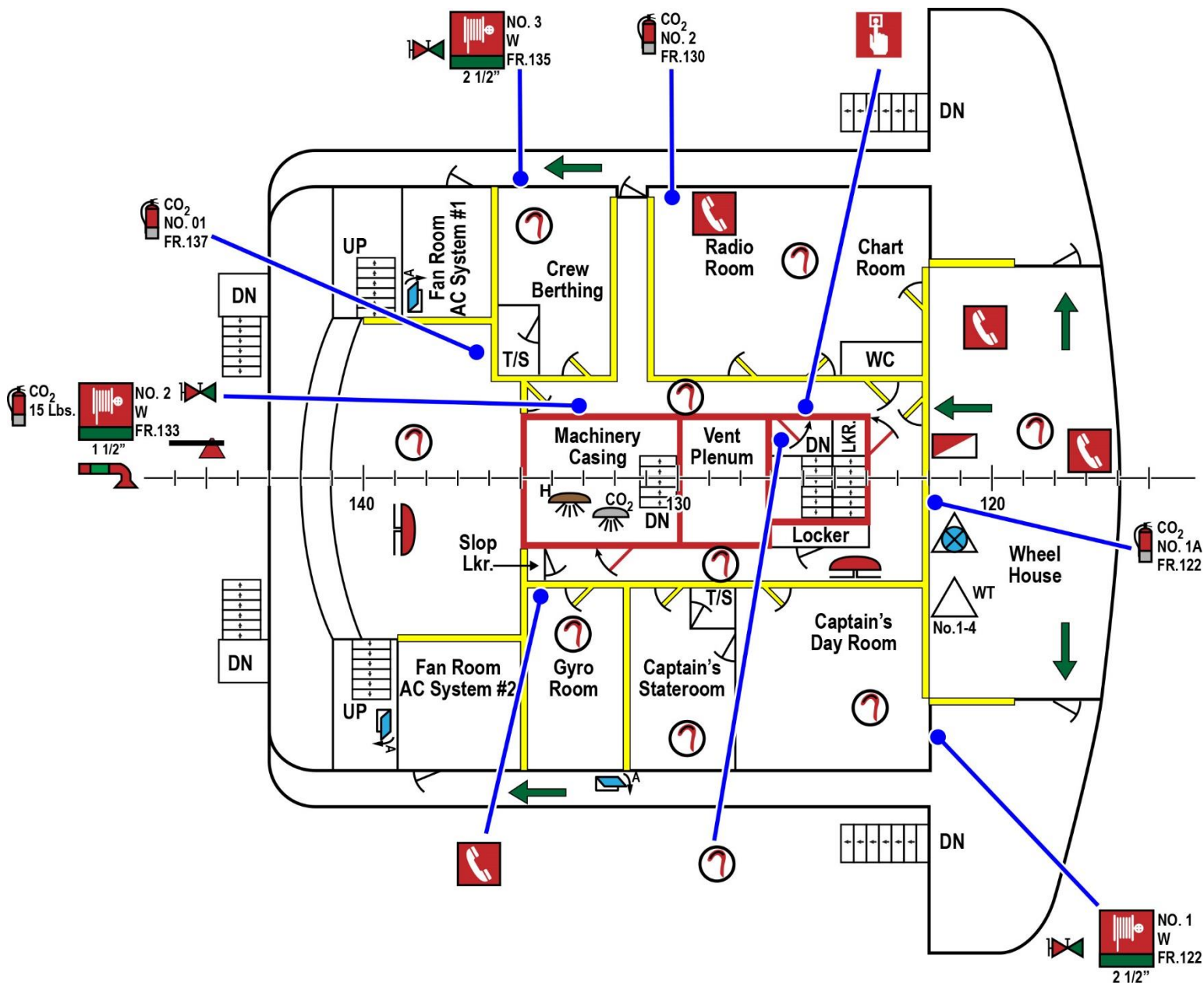
**AFT DRAFT  
MARKS**

**12**  
**11**  
**10**  
**9**  
**8**  
**7**

**FWD DRAFT  
MARKS**



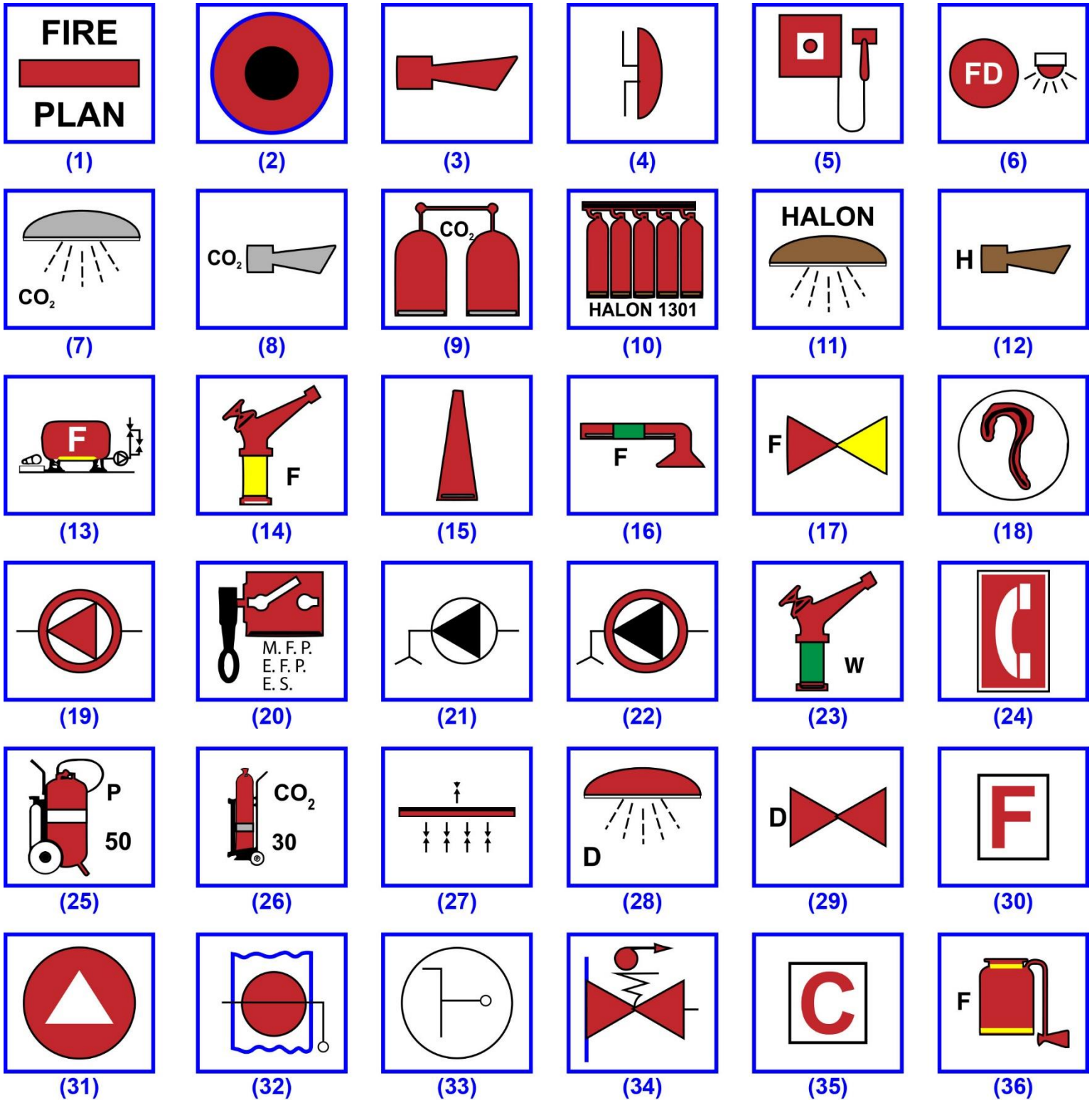
## D035SA



Adapted for testing purposes only from Graphical Symbols for Shipboard Fire Control Plans  
IMO Resolution A.952(23) Adopted 2003  
Further reproduction prohibited without permission



## D039SA Part 1 of 2

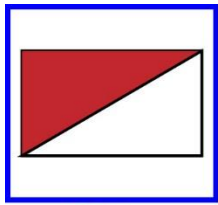


Adapted for testing purposes only from Graphical Symbols for Shipboard Fire Control Plans  
IMO Resolution A.952(23) Adopted 2003

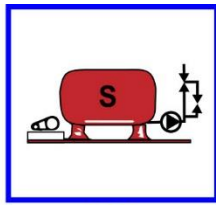
Further reproduction prohibited without permission



## D039SA Part 2 of 2



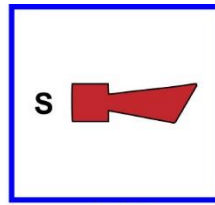
(37)



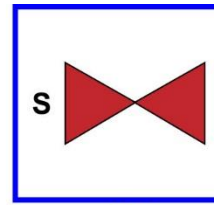
(38)



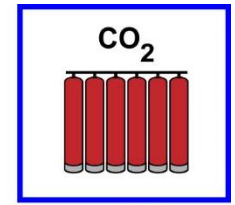
(39)



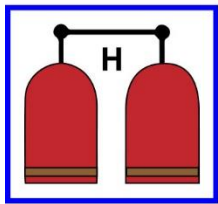
(40)



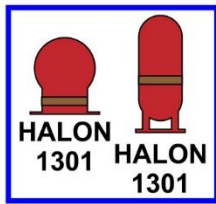
(41)



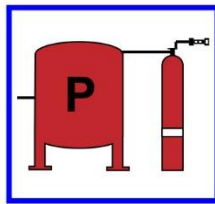
(42)



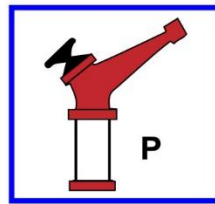
(43)



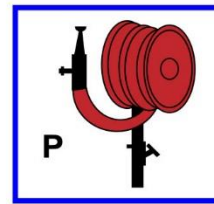
(44)



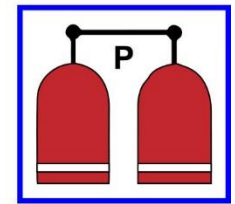
(45)



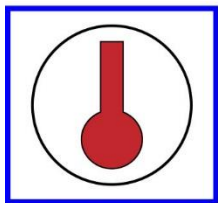
(46)



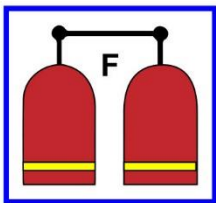
(47)



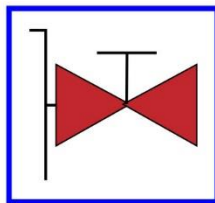
(48)



(49)



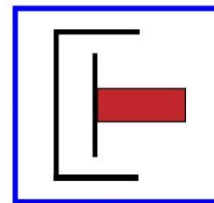
(50)



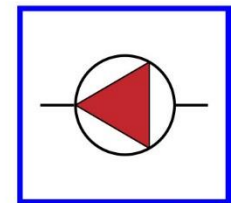
(51)



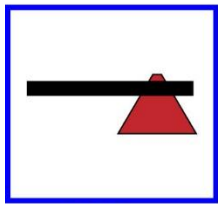
(52)



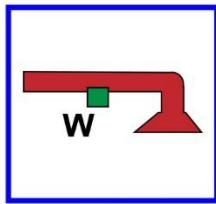
(53)



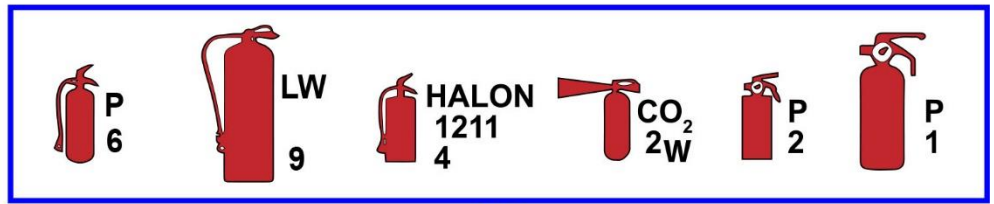
(54)



(55)



(56)



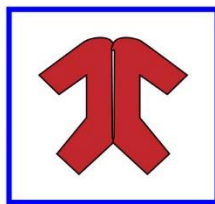
(57)



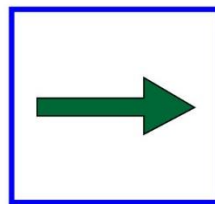
(58)



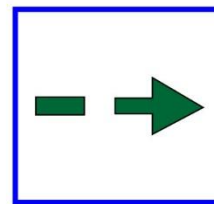
(59)



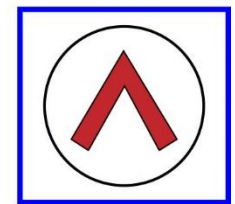
(60)



(61)



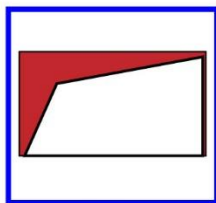
(62)



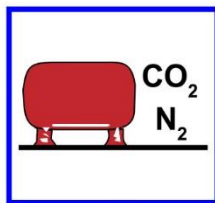
(63)



(64)



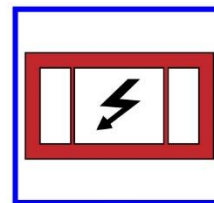
(65)



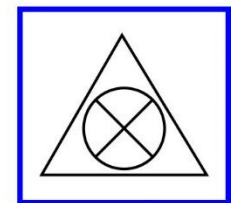
(66)



(67)



(68)



(69)

Adapted for testing purposes only from Graphical Symbols for Shipboard Fire Control Plans  
IMO Resolution A.952(23) Adopted 2003

Further reproduction prohibited without permission