

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.** Which is TRUE when operating the air supply system in a covered lifeboat?

- (A) All hatches, doors, and oar ports should be closed
- (B) The air cylinder shut-off valve should be closed
- (C) The fuel supply valve should be closed
- (D) The engine should be shut off

*If choice A is selected set score to 1.*

**2.** Your voyage planning indicates you will arrive at a waypoint in longitude 49°16.3'E at 0947 ZT on 3 March 1988. How should this date be entered into an AMVER report?

- (A) 03094703
- (B) 030947C MAR
- (C) 030647Z MAR
- (D) 06470303Z

*If choice C is selected set score to 1.*

**3.** What is one of the FIRST actions you should take after abandoning and clearing away from a vessel?

- (A) Prepare for arrival of rescue units.
- (B) Identify the person in charge.
- (C) Gather up useful floating objects.
- (D) Arrange watches and duties.

*If choice B is selected set score to 1.*

**4.** Which is the best action to take when plugging holes below the waterline for the safety of the vessel?

- (A) Reduce the entry of water as much as possible
- (B) Eliminate all water entering the hole
- (C) Only plug holes in machinery or other vital spaces
- (D) Plug the largest holes first

*If choice A is selected set score to 1.*

**5.** Which is the normal tendency for a loaded tanker?

- (A) Sag
- (B) Have a permanent list
- (C) To be very tender
- (D) Hog

*If choice A is selected set score to 1.*

6. You are using an oxygen indicator. How long should you wait after the sample is drawn into the instrument before reading the meter?
- (A) At least 5 seconds
  - (B) At least 20 seconds
  - (C) At least 10 seconds
  - (D) No wait is necessary, the reading occurs immediately.

*If choice C is selected set score to 1.*

7. When communicating on the radiotelephone using plain English, what procedure word indicates the end of my transmission and that a response is necessary?
- (A) Wilco
  - (B) Out
  - (C) Roger
  - (D) Over

*If choice D is selected set score to 1.*

8. Which term represents the weight (measured in tons) required to cause a change in mean draft of one inch?
- (A) MH1 inch
  - (B) TPI
  - (C) MT1 inch
  - (D) ML1 inch

*If choice B is selected set score to 1.*

9. Ventilation systems connected to a compartment in which a fire is burning are normally closed to prevent the rapid spread of the fire by which method?
- (A) Conduction
  - (B) Spontaneous combustion
  - (C) Convection
  - (D) Radiation

*If choice C is selected set score to 1.*

10. The operating cord on an inflatable liferaft should be renewed by \_\_\_\_\_.
- (A) an approved servicing facility ashore
  - (B) cutting the line where it enters the case and replacing that portion
  - (C) leaving the original line and tying another one to it so the two lines will take the strain
  - (D) removing the top half of the shell, cutting the line at its source, and renewing completely

*If choice A is selected set score to 1.*

**11.** 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"

*If choice C is selected set score to 1.*

**12.** A message by flashing light consists of four elements, including the call, the identity, the text, and what fourth element?

- (A) The destination
- (B) The answer
- (C) The time
- (D) The ending

*If choice D is selected set score to 1.*

**13.** Which satellite system promulgated Maritime Safety Information?

- (A) SafetyNET
- (B) NAVTEX
- (C) AMVER
- (D) INMARSAT-M SES

*If choice A is selected set score to 1.*

**14.** You are testing the external flotation bladder of an immersion suit and find it has a very slow leak. Which action should be taken?

- (A) Replace the inflation bladder.
- (B) Contact the manufacturer for repair instructions.
- (C) Some leakage should be expected and a topping off tube is provided; no other action is necessary.
- (D) Replace the suit.

*If choice B is selected set score to 1.*

**15.** All personnel on board a vessel should be familiar with the rescue boat's \_\_\_\_\_.

- (A) maintenance schedules
- (B) boarding and operating procedure
- (C) fuel consumption rates
- (D) navigational systems

*If choice B is selected set score to 1.*

**16.** 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

*If choice C is selected set score to 1.*

**17.** Inflatable liferafts on vessels on an international voyage must be able to carry a minimum capacity of how many persons?

- (A) 2 persons
- (B) 4 persons
- (C) 6 persons
- (D) 8 persons

*If choice C is selected set score to 1.*

**18.** Which term describes the horizontal fore or aft motion of a vessel?

- (A) Surge
- (B) Roll
- (C) Sway
- (D) Pitch

*If choice A is selected set score to 1.*

**19.** Before counterflooding to correct a list, you must be sure the list is due to which of the following choices?

- (A) Flooding
- (B) Off-center weight
- (C) Reserve buoyancy
- (D) A negative GM

*If choice B is selected set score to 1.*

**20.** When will the float-free emergency position indicating radio beacon be activated after abandoning ship?

- (A) Immediately after floating free
- (B) After about one hour when the salt water activates the battery
- (C) Only when keyed by the radar of another vessel
- (D) Only when daylight activates the photovoltaic cell

*If choice A is selected set score to 1.*

**21.** Which term is given to the upward slope of a vessels bottom from the keel to the bilge?

- (A) Camber
- (B) Rise of floor
- (C) Sheer
- (D) Rake

*If choice B is selected set score to 1.*

**22.** Your vessel rolls slowly and sluggishly. What does this indicate about the vessel?

- (A) It is taking on water
- (B) It has off-center weights
- (C) It has a greater draft forward than aft
- (D) It has poor stability

*If choice D is selected set score to 1.*

**23.** 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. Both vessels are making the same amount of leeway. Where should you position your vessel when you start running lines?

- (A) A
- (B) B
- (C) C
- (D) D

*If choice C is selected set score to 1.*

**24.** In illustration D039SA below, which Fire Control Plan symbol represents an emergency generator?

- (A) 20
- (B) 32
- (C) 67
- (D) 68

*If choice C is selected set score to 1.*

**25.** Which type of hull damage should be repaired FIRST?

- (A) Damage to interior watertight boundaries
- (B) Damage below the waterline
- (C) Damage at or just above the waterline
- (D) Damage in way of machinery rooms

*If choice C is selected set score to 1.*

**26.** You have called another vessel by flashing light and he has answered your call properly. You now send your call sign "DE KLIS". What should he respond with?

- (A) TTTT
- (B) his own call letters
- (C) KLIS, DE, his own call letters
- (D) R

*If choice C is selected set score to 1.*

**27.** Your 600 GT vessel must carry a line-throwing appliance if it is certificated for what type of service?

- (A) coastwise service
- (B) Great Lakes service
- (C) river service
- (D) None of the above

*If choice A is selected set score to 1.*

**28.** When a vessel signals her distress by means of a gun or other explosive signal, the firing should be at approximately which time intervals?

- (A) 10 minutes
- (B) 1 hour
- (C) 1 minute
- (D) 3 minutes

*If choice C is selected set score to 1.*

**29.** What power source actuates a solenoid valve?

- (A) Hydraulic pressure
- (B) Air pressure
- (C) Electric current
- (D) Mechanical force

*If choice C is selected set score to 1.*

**30.** "Thermal protective aids" are required for what percentage of the persons a survival craft is equipped to carry?

- (A) 10%
- (B) 50%
- (C) 75%
- (D) 100%

*If choice A is selected set score to 1.*

**31.** Which step should normally be taken FIRST by those who have boarded a liferaft in an emergency?

- (A) Ration food and water supplies.
- (B) Determine position and closest point of land.
- (C) Check pyrotechnic supplies.
- (D) Take anti-seasickness pills, if available.

*If choice D is selected set score to 1.*

**32.** The flash point of a liquid means the temperature \_\_\_\_\_.

- (A) at which a liquid will burn steadily
- (B) at which a liquid will explode
- (C) at which a liquid will give off flammable vapors
- (D) that a liquid must reach before it will flow readily

*If choice C is selected set score to 1.*

**33.** Utilizing illustration D038SA below of the fire control plan of the lower engine room, what does the arrow between frames 135 and 140 represent?

- (A) Secondary means of escape
- (B) Missing person search pattern
- (C) Direction of fire main
- (D) Primary means of escape

*If choice D is selected set score to 1.*

**34.** Pitching is angular motion of the vessel about what axis?

- (A) Centerline
- (B) Transverse
- (C) Vertical
- (D) Longitudinal

*If choice B is selected set score to 1.*

**35.** Your vessel displaces 497 tons. The existing deck cargo has a center of gravity of 2.5 feet above the deck and weighs 24 tons. If you load 18 tons of ground tackle with an estimated center of gravity of 18 inches above the deck, what is the final height of the CG of the deck cargo?

- (A) 1.86 feet
- (B) 2.07 feet
- (C) 2.35 feet
- (D) 2.76 feet

*If choice B is selected set score to 1.*



**36.** When dry chemical extinguishers are used to put out class B fires, why is there a danger of reflash?

- (A) Dry Chemical is not an effective agent on Class B fires
- (B) Dry chemical dissipates quickly
- (C) Dry chemical agents do little or no cooling
- (D) It is rapidly absorbed by the liquid

*If choice C is selected set score to 1.*

**37.** When should a fire be ventilated?

- (A) When attacking the fire directly
- (B) When using a steam smothering system
- (C) When using the fixed CO2 system
- (D) All of the above

*If choice A is selected set score to 1.*

**38.** You are having a Coast Guard inspection. All carbon dioxide fire extinguishers aboard will be \_\_\_\_\_.

- (A) weighed
- (B) checked for pressure loss
- (C) discharged and recharged
- (D) sent ashore to an approved service facility

*If choice A is selected set score to 1.*

**39.** You should conduct a sector search under which of the following circumstances?

- (A) The search object is a target that will be readily detected by radar.
- (B) Multiple aircraft are available to assist a surface vessel.
- (C) The search target is sighted and then lost.
- (D) More than one vessel is available for a search.

*If choice C is selected set score to 1.*

**40.** With regards to GMDSS, define the acronym MSI.

- (A) Maritime Safety Information
- (B) Maritime Satellite Indicator
- (C) Maritime Shipping Index
- (D) Mariner Safety Intelligence

*If choice A is selected set score to 1.*

**41.** What is the MOST important consideration when determining how to fight an electrical fire?

- (A) The amount of toxic fumes created by the extinguisher
- (B) Maintaining electrical power
- (C) Danger of shock to personnel
- (D) Whether the fire is in machinery or passenger spaces

*If choice C is selected set score to 1.*

**42.** What is the purpose of a striker plate?

- (A) Prevents valve stem over-travel
- (B) Absorbs machinery vibration
- (C) Provides surface for applying force on machinery
- (D) Provides landing surface for the sounding bob

*If choice D is selected set score to 1.*

**43.** Which types of portable fire extinguishers are designed for use on electrical fires?

- (A) Carbon dioxide and foam (stored pressure)
- (B) Foam (stored pressure) and soda-acid
- (C) Dry chemical and carbon dioxide
- (D) Dry chemical and soda-acid

*If choice C is selected set score to 1.*

**44.** You are on watch at sea on course 090°T. A man falls overboard on your starboard side. You immediately start a Williamson Turn. Which action is NOT a part of a Williamson Turn?

- (A) Shift the helm to left full rudder.
- (B) Come right full rudder until the vessel heads 150°T.
- (C) Continue with left rudder until on course 270°T.
- (D) Stop the engines until clear of the man.

*If choice D is selected set score to 1.*

**45.** Transverse frames are more widely spaced on a ship that is designed with the \_\_\_\_\_.

- (A) centerline system of framing
- (B) longitudinal system of framing
- (C) transverse system of framing
- (D) isometric system of framing

*If choice B is selected set score to 1.*

**46.** You are approaching a ship that is broken down and are preparing to take her in tow. BEFORE positioning your vessel to pass the towline, which action should you take?

- (A) Compare the rate of drift between the ships
- (B) Have traveling lizards rigged to guide the towline while it is paid-out
- (C) Install chafing gear on the towline
- (D) Secure the bitter end of the towing hawser to prevent loss if the tow is slipped

*If choice A is selected set score to 1.*

**47.** The CO2 flooding system is actuated by a sequence of steps which are \_\_\_\_\_.

- (A) open stop valve, open control valve, trip alarm
- (B) break glass, pull valve, break glass, pull cylinder control
- (C) open bypass valve, break glass, pull handle
- (D) sound evacuation alarm, pull handle

*If choice B is selected set score to 1.*

**48.** What term indicates the outward curvature of the hull above the waterline?

- (A) Flare
- (B) Deadrise
- (C) Tumble home
- (D) Sheer

*If choice A is selected set score to 1.*

**49.** You are reading the draft marks as shown in illustration D032DG. The water level is about 4 inches below the bottom of 10. What is the draft?

- (A) 9'-08"
- (B) 10'-02"
- (C) 10'-04"
- (D) 9'-04"

*If choice A is selected set score to 1.*

**50.** An inflatable liferaft is hand-launched by \_\_\_\_\_.

- (A) removing the rubber packing strip
- (B) pulling a cord
- (C) throwing the entire container overboard
- (D) cutting the wire restraining bands

*If choice C is selected set score to 1.*

- 51.** If a lifeboat is stowed 40 feet above the light water draft and 200 feet from the bow, how long must the sea painter be?
- (A) One third the length from the bow to where the lifeboat is stowed
  - (B) 80 feet
  - (C) 160 feet
  - (D) Sufficiently long enough to reach the water when the vessel has an adverse list of 15°

*If choice B is selected set score to 1.*

- 52.** 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 center of the boat
  - (C) Shift weight to the bow
  - (D) Shift weight to the stern

*If choice D is selected set score to 1.*

- 53.** 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) When over 200 miles from a port in the danger zone, you should not darken ship.
  - (B) If on a coastwise voyage along the east coast of the U.S., you should put into the nearest port.
  - (C) You should attempt to submit an AMVER report to NSA.
  - (D) You should only enter a port in the danger zone during hours of darkness.

*If choice C is selected set score to 1.*

- 54.** The SS AMERICAN MARINER is ready to bunker with drafts of FWD 11'-01", AFT 14'-07". After all bunkers are on board, soundings indicate the tonnages shown in table ST-0158 below. Use the white pages of The Stability Data Reference Book to determine the free surface correction.

DB 1 CL	48.2	DB 7 P	94.6
DB 1A CL	60.0	DB 7 S	94.6
DB 2 P	71.2	DT 1A CL	251.6
DB 2 S	71.2	DT 2 P	100.7
DB 4 CL	224.1	DT 2 S	100.7
DB 4 P	105.0	DT 3 P	86.1
DB 4 S	105.0	DT 3 S	86.1
DB 5 CL	196.2	DT 6 P	165.0
DB 6 CL	200.0	DT 6 S	165.0
DB 6 P	87.0	DT 7 P	128.8
DB 6 S	87.0	DT 7 S	128.8

- (A) 1.17 foot
- (B) 1.30 feet
- (C) 1.06 foot
- (D) 0.91 foot

*If choice B is selected set score to 1.*

- 55.** A fire starts on your vessel while refueling. Which action should you take FIRST?

- (A) Determine the source of the fire
- (B) Sound the general alarm
- (C) Attempt to extinguish the fire
- (D) Stop the ventilation

*If choice B is selected set score to 1.*

- 56.** A tank which carries liquid is dangerous to the stability of a vessel when it is in which condition?

- (A) Low in the vessel
- (B) Completely empty
- (C) Slack
- (D) Completely full

*If choice C is selected set score to 1.*

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

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

*If choice A is selected set score to 1.*

**58.** After abandoning ship which action should be taken IMMEDIATELY upon entering a liferaft?

- (A) Issue anti-seasickness medicine.
- (B) Dry the liferaft floor and inflate.
- (C) Open equipment pack.
- (D) Get clear of the ship.

*If choice D is selected set score to 1.*

**59.** If the meter needle of the oxygen indicator cannot be set to zero, what should be done?

- (A) Replace the platinum filament.
- (B) Replace the batteries.
- (C) Check the sampling tube for blockage.
- (D) Adjust the final reading by the amount the needle is displaced from zero.

*If choice B is selected set score to 1.*

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

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

*If choice B is selected set score to 1.*

**61.** What is the purpose of the liferaft hydrostatic release?

- (A) To test rafts hydrostatically
- (B) To inflate the raft automatically as the vessel's decks become awash
- (C) To release the liferaft from the cradle automatically as the ship sinks
- (D) None of the above

*If choice C is selected set score to 1.*

**62.** Which is a requirement for any person maintaining a listening watch on a bridge-to-bridge radiotelephone?

- (A) To speak a language the vessel's crew will understand
- (B) Be able to repair the unit
- (C) Be able to send Morse Code
- (D) Must speak English

*If choice D is selected set score to 1.*

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

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

*If choice C is selected set score to 1.*

**64.** The SS AMERICAN MARINER has drafts of: FWD 16'-10", AFT 19'-04". Use the white pages of the Stability Data Reference Book to determine the drafts if you ballast the forepeak with 73 tons of seawater.

- (A) FWD 17'-07.4", AFT 18'-09.2"
- (B) FWD 17'-06.8", AFT 18'-09.8"
- (C) FWD 17'-06.2", AFT 18'-10.4"
- (D) FWD 17'-05.8", AFT 18'-10.9"

*If choice D is selected set score to 1.*

**65.** Which extinguishing agent is most effective on a mattress fire?

- (A) Water
- (B) Dry Chemical
- (C) Halon
- (D) CO<sub>2</sub>

*If choice A is selected set score to 1.*

**66.** Your vessel has a metacentric height of 1.12 feet and a beam of 60 feet. What will your average rolling period be?

- (A) 20 seconds
- (B) 35 seconds
- (C) 23 seconds
- (D) 25 seconds

*If choice D is selected set score to 1.*

**67.** Which is one of the signals, other than a distress signal, that can be used by a rescue boat to attract attention?

- (A) A searchlight
- (B) A red star shell
- (C) Orange smoke signal
- (D) A burning barrel

*If choice A is selected set score to 1.*

**68.** Which is the MOST important consideration for a tank vessel?

- (A) GM
- (B) The vertical center of gravity
- (C) The longitudinal center of gravity
- (D) The stress on the hull

*If choice D is selected set score to 1.*

**69.** In illustration D016SA below, what number indicates the frapping line?

- (A) 1
- (B) 2
- (C) 3
- (D) 4

*If choice B is selected set score to 1.*

**70.** What is NOT a function of the steam drum of a marine water-tube boiler?

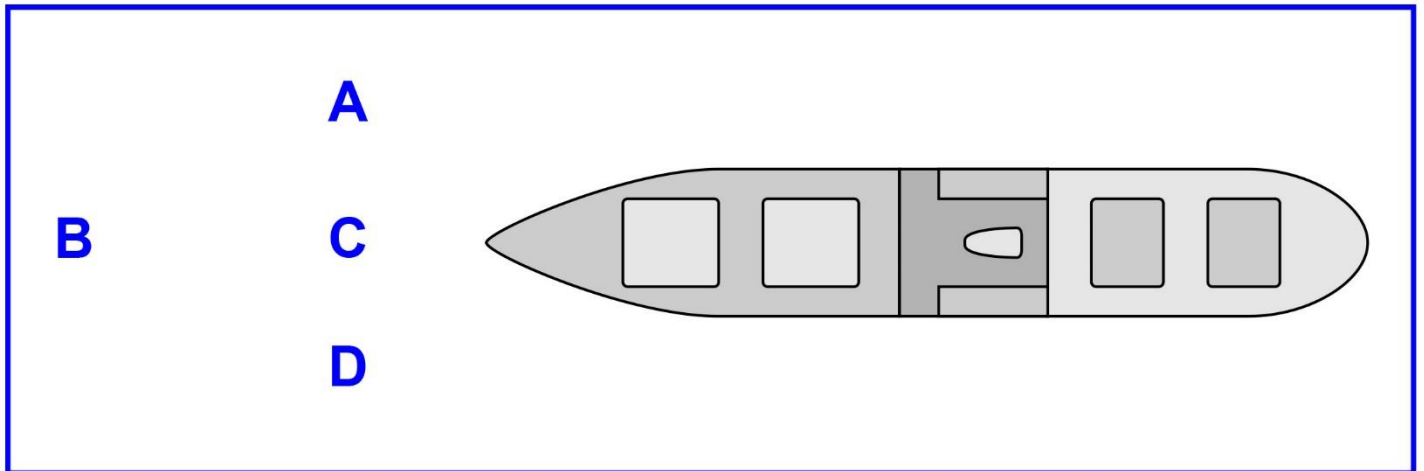
- (A) Receives saturated steam from the generating tubes
- (B) Collects steam exhausted from the turbines
- (C) Serves as a reservoir of boiler feedwater
- (D) Holds internal fittings for separation of moisture from steam

*If choice B is selected set score to 1.*



---

## D025DG



---

## D032DG

**12**

**11**

**10**

**9**

**8**

**7**

**AFT DRAFT  
MARKS**

**12**

**11**

**10**

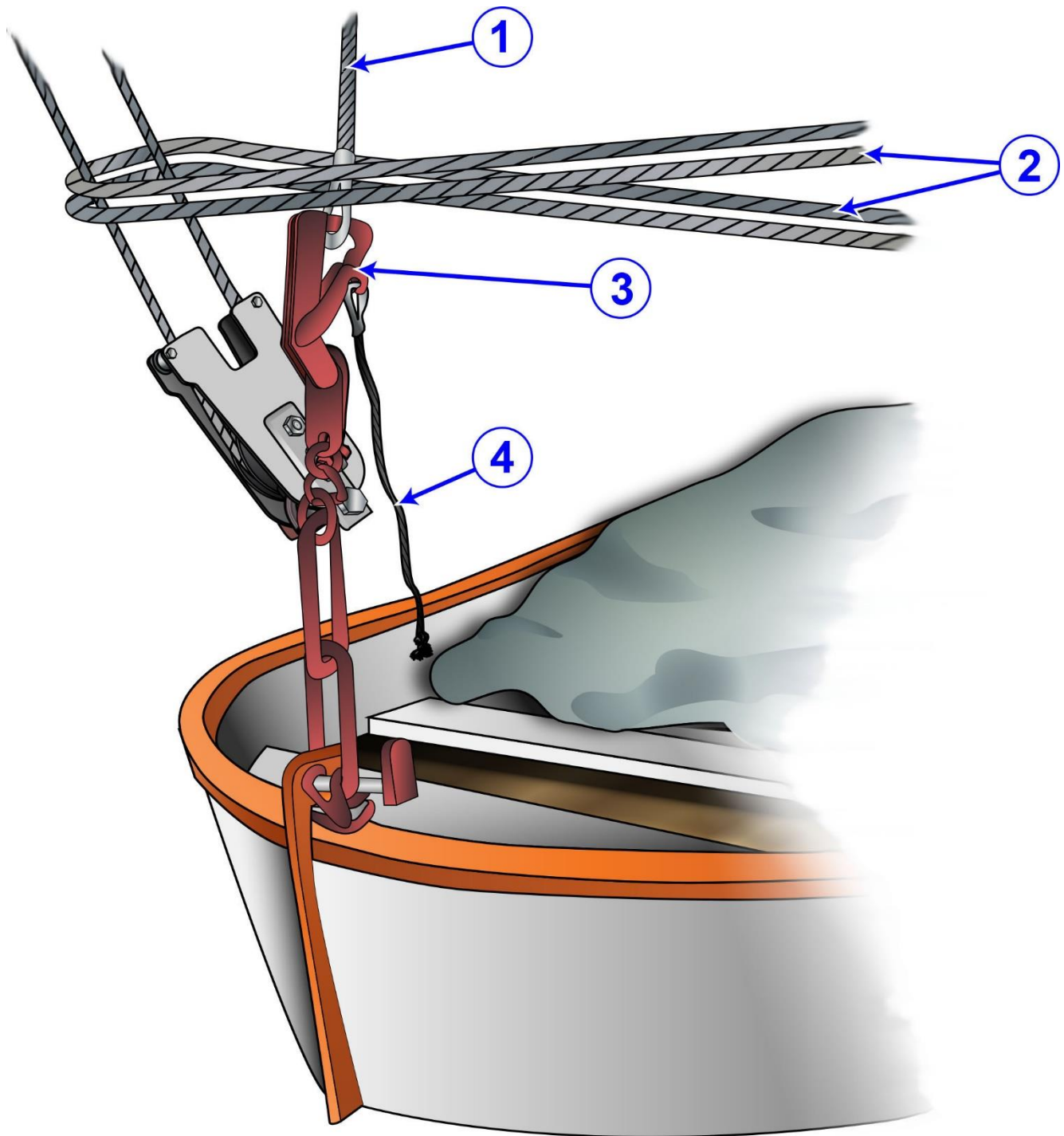
**9**

**8**

**7**

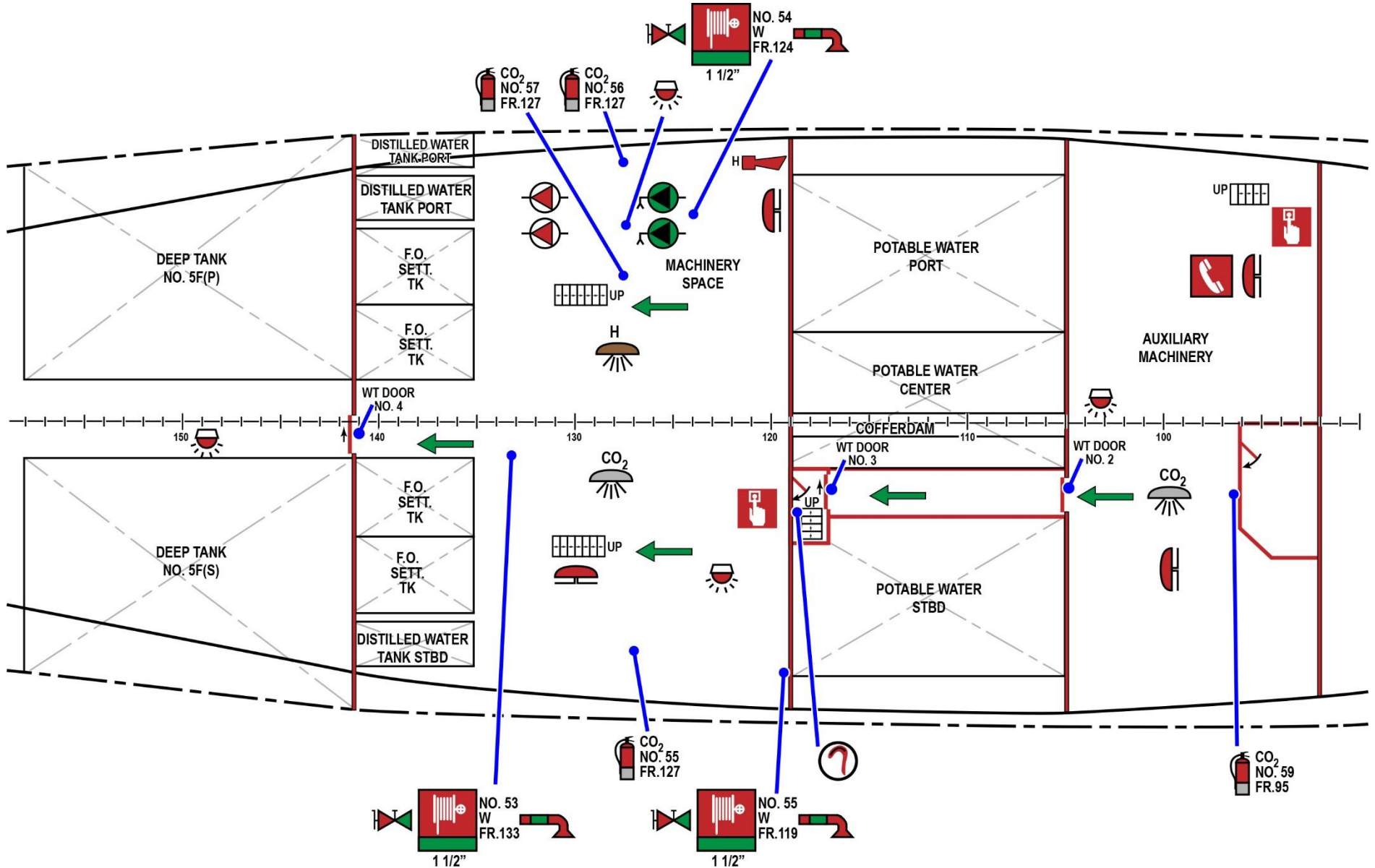
**FWD DRAFT  
MARKS**

## D016SA



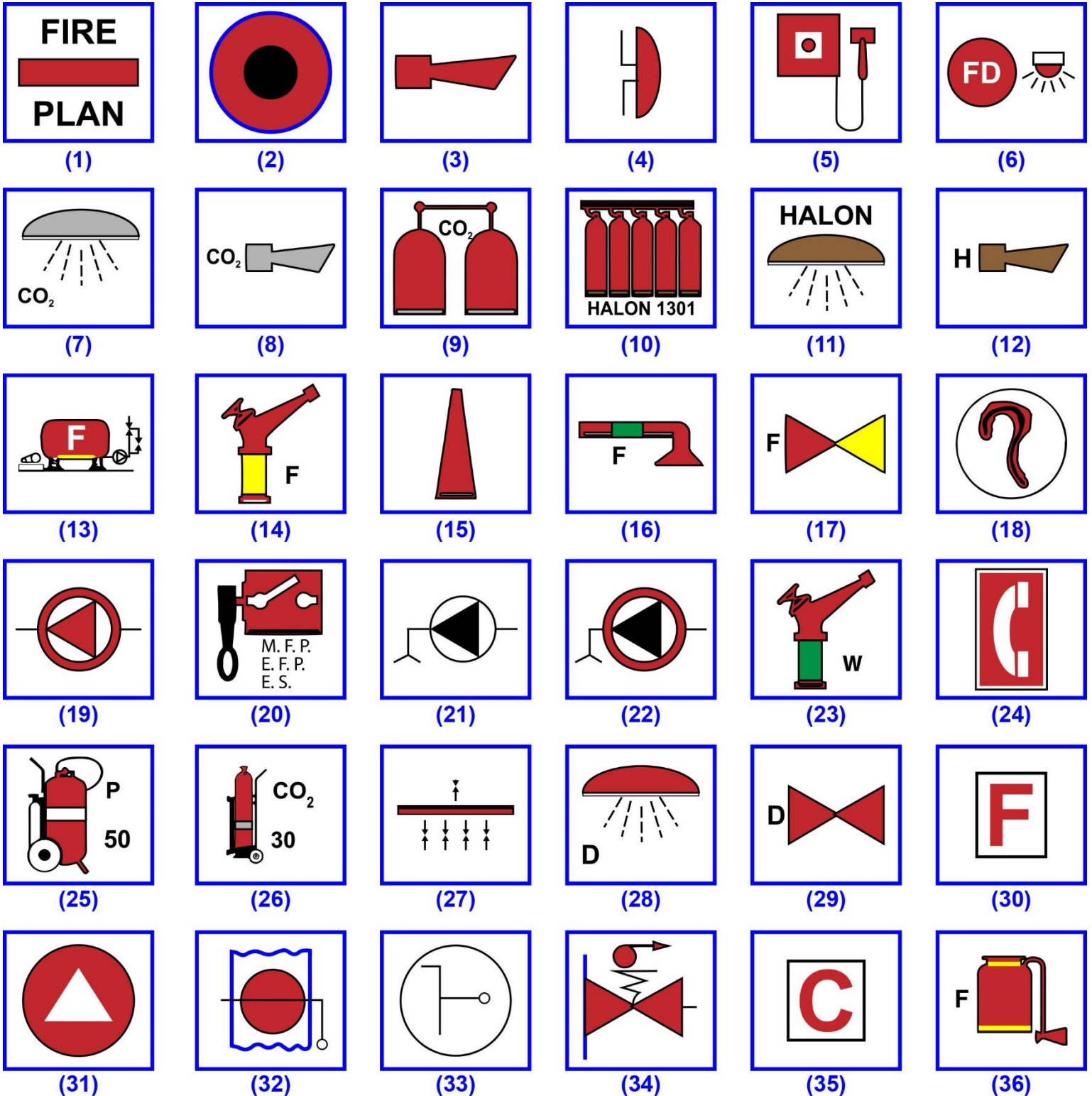
Adapted for testing purposes only from Water Survival Manual  
Copyright © 1991 by Seafarers Harry Lundeborg School of Seamanship  
Further reproduction prohibited without permission

## D038SA

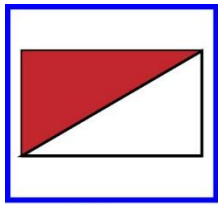


Adapted for testing purposes only from Graphical Symbols for Shipboard Fire Control Plans  
IMO Resolution A.952(23) Adopted 2003  
Further reproduction prohibited without permission

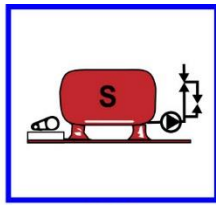
## D039SA Part 1 of 2



## D039SA Part 2 of 2



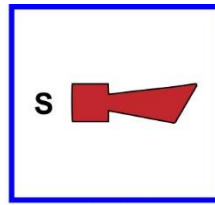
(37)



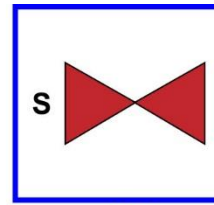
(38)



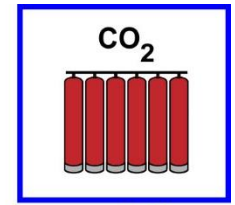
(39)



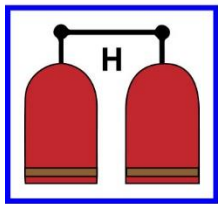
(40)



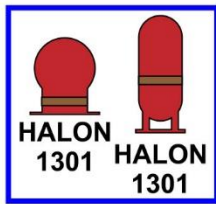
(41)



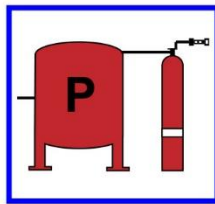
(42)



(43)



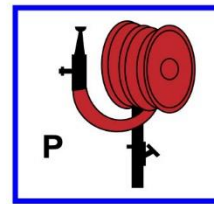
(44)



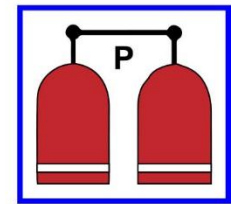
(45)



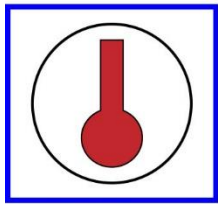
(46)



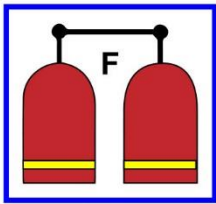
(47)



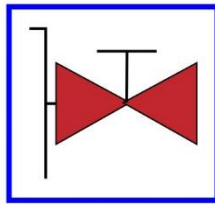
(48)



(49)



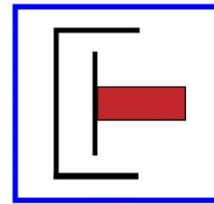
(50)



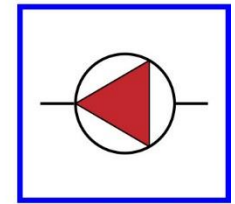
(51)



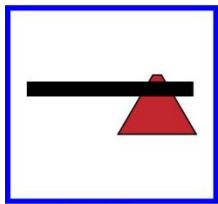
(52)



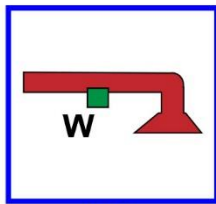
(53)



(54)



(55)



(56)



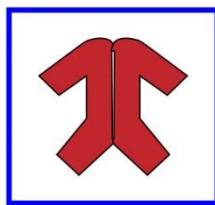
(57)



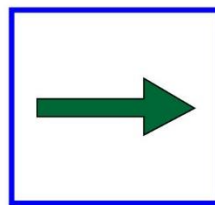
(58)



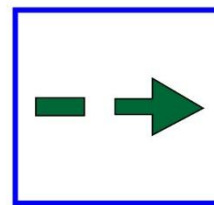
(59)



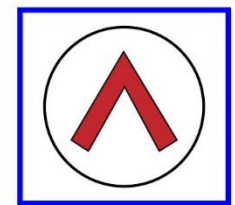
(60)



(61)



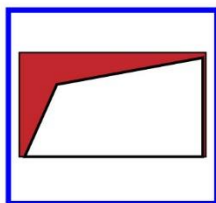
(62)



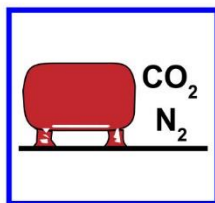
(63)



(64)



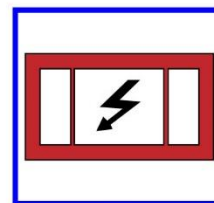
(65)



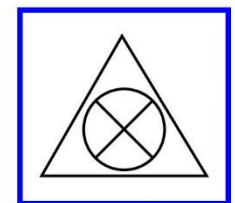
(66)



(67)



(68)



(69)