

## U.S.C.G. Merchant Marine Exam

Mate Less than 500-1600 Gross Registered Tons

Q137 Deck Safety

(Sample Examination)

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

1. A situation has occurred in which your vessel must be towed. When the towing vessel passes the towing line to you, you should secure the line \_\_\_\_\_.

- (A) to the forward-most bitts
- (B) at the stern
- (C) to the forward part of the deckhouse
- (D) to the base of the foremast

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

2. A fire of escaping liquefied flammable gas is best extinguished by \_\_\_\_\_.

- (A) cooling the gas below the ignition point
- (B) interrupting the chain reaction
- (C) cutting off the supply of oxygen
- (D) stopping the flow of gas

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

3. The service use of pyrotechnic distress signals measured from the date of manufacture shall be limited to a period of \_\_\_\_\_.

- (A) 24 months
- (B) 36 months
- (C) 42 months
- (D) 60 months

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

4. In illustration D039SA below, what is the fire control plan symbol represented by number (67)?

- (A) emergency generator
- (B) inert gas installation
- (C) gas detector
- (D) emergency switchboard

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

5. A spark arrestor \_\_\_\_\_.

- (A) secures covers on ullage openings
- (B) keeps sparks from falling into an open tank
- (C) grounds static electricity
- (D) prevents sparks from getting out of an engine's exhaust system

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

6. Steering a motor lifeboat broadside to the sea could cause it to \_\_\_\_\_.

- (A) capsize
- (B) run smoother
- (C) sink
- (D) run faster

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

7. What does a pyrometer measure on a diesel engine?

- (A) Water pressure
- (B) Exhaust temperature
- (C) Air box pressure
- (D) Water temperature

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

8. One of the limitations of foam as an extinguishing agent is that foam \_\_\_\_\_.

- (A) cannot be made with salt water
- (B) is heavier than oil and sinks below its surface
- (C) is corrosive and a hazard to fire fighters
- (D) conducts electricity

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

9. 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.*

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

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

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

**11.** Frapping lines \_\_\_\_\_.

- (A) bring the lifeboat close alongside the rail in the embarkation position
- (B) give the occupants a safety line when the boat is being lowered from the embarkation level
- (C) reduce the swinging of the lifeboat at the embarkation level
- (D) secure the lifeboat in the davits when in the stowed position

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

**12.** One of the signals, other than a distress signal, that can be used by a rescue boat to attract attention is a/an \_\_\_\_\_.

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

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

**13.** You are fighting a class "B" fire with a portable dry chemical extinguisher. The discharge should be directed \_\_\_\_\_.

- (A) over the top of the fire
- (B) to bank off a bulkhead onto the fire
- (C) at the main body of the fire
- (D) at the seat of the fire, starting at the near edge

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

**14.** Which toxic gas is a product of incomplete combustion, and is often present when a fire burns in a closed compartment?

- (A) Hydrogen sulfide
- (B) Nitric oxide
- (C) Carbon dioxide
- (D) Carbon monoxide

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

**15.** Which is NOT an advantage of the flush method of welded shell plating?

- (A) Reduces plate stress
- (B) Reduces weight
- (C) Keeps practically 100% of tensile strength at the joints
- (D) Reduces frictional resistance

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

**16.** A fuel-air mixture below the lower explosive limit is too \_\_\_\_\_.

- (A) rich to burn
- (B) cool to burn
- (C) lean to burn
- (D) dense to burn

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

**17.** What is required to launch a boat stowed in a crescent davit?

- (A) Hoist the boat clear of the cradle.
- (B) Release the outboard part of the cradle.
- (C) Rig the tricing lines.
- (D) Crank the crescent out.

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

**18.** In ship construction, frame spacing is \_\_\_\_\_.

- (A) uniform over the length of the vessel
- (B) greater at the bow and stern
- (C) reduced at the bow and stern
- (D) uniform over the length of the vessel, with the exception of the machinery spaces, where it is reduced due to increased stresses

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

**19.** The pillar shape that gives the greatest strength for the least weight is the \_\_\_\_\_.

- (A) octagonal pillar
- (B) "I" Beam pillar
- (C) "H" Beam pillar
- (D) circular type pillar

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

**20.** Metacentric height is an indication of a vessel's stability \_\_\_\_\_.

- (A) for small angles of inclination
- (B) for large angles of inclination
- (C) for all angles of inclination
- (D) in no case

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

**21.** For the purpose of training and drills, if reasonable and practicable, how frequently should rescue boats be launched with their assigned crew?

- (A) once a year
- (B) twice a year
- (C) once a month
- (D) once a week

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

**22.** Fires in combustible metals, such as sodium or magnesium, are classified as class \_\_\_\_\_.

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

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

**23.** A wind has caused a difference between drafts starboard and port. This difference is \_\_\_\_\_.

- (A) flotation
- (B) heel
- (C) trim
- (D) list

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

**24.** Forces within a vessel have caused a difference between the starboard and port drafts. This difference is called \_\_\_\_\_.

- (A) trim
- (B) flotation
- (C) list
- (D) heel

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

**25.** A wooden plug fitted tightly in the vent of a damaged tank may prevent the tank from \_\_\_\_\_.

- (A) developing free surface
- (B) developing free surface moment
- (C) collapsing
- (D) filling completely

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

**26.** If the metacentric height is small, a vessel will \_\_\_\_\_.

- (A) be tender
- (B) be stiff
- (C) have a quick and rapid motion
- (D) have large angles of roll

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

**27.** Which formula can be used to calculate metacentric height?

- (A)  $KM - KG$
- (B)  $KM - GM$
- (C)  $KB + BM$
- (D)  $KM + GM$

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

**28.** Which would NOT provide extra buoyancy for a vessel with no sheer?

- (A) Lighter draft
- (B) Higher bulwark
- (C) Raised fo'c'sle head
- (D) Raised poop

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

- 29.** The SS AMERICAN MARINER is ready to bunker with drafts of FWD 11'-01", AFT 15'-01". After all bunkers are on board, soundings indicate the tonnages shown in table ST-0086 below. Use the white pages of The Stability Data Reference Book to determine the free surface correction.

DB 1 CL	48.2	DB 6 CL	242.3
DB 1A CL	81.9	DB 7 P	94.6
DB 2 P	71.2	DB 7 S	94.6
DB 2 S	71.2	DT 1 CL	125.3
DB 3 CL	227.6	DT 1A CL	257.6
DB 3 P	55.6	DT 2 P	80.0
DB 3 S	55.6	DT 2 S	80.0
DB 4 CL	224.1	DT 6 P	201.2
DB 4 P	128.1	DT 6 S	201.2
DB 4 S	128.1	DT 7 P	128.8
		DT 7 S	128.8

- (A) 0.68 foot
- (B) 0.85 foot
- (C) 0.97 foot
- (D) 1.30 feet

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

- 30.** When plugging holes below the waterline you should \_\_\_\_\_.

- (A) only plug holes in machinery or other vital spaces
- (B) eliminate all water entering the hole
- (C) plug the largest holes first
- (D) reduce the entry of water as much as possible

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

- 31.** When a vessel is stationary and in a hogging condition, the main deck is under \_\_\_\_\_.

- (A) shear stress
- (B) compression stress
- (C) tension stress
- (D) racking stress

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

**32.** Angular motion about the vertical axis of a vessel is called \_\_\_\_\_.

- (A) yaw
- (B) roll
- (C) sway
- (D) surge

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

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

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

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

**34.** 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

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

**35.** 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) No wait is necessary, the reading occurs immediately.
- (C) At least 10 seconds
- (D) At least 20 seconds

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

- 36.** Your vessel displaces 641 tons. The existing deck cargo has a center of gravity of 3.6 feet above the deck and weighs 36 tons. If you load 22 tons of ground tackle with an estimated center of gravity of 2.0 feet above the deck, what is the final height of the CG of the deck cargo?
- (A) 2.33 feet
  - (B) 2.55 feet
  - (C) 2.77 feet
  - (D) 2.99 feet

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

- 37.** 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'-05.8", AFT 18'-10.9"
  - (B) FWD 17'-06.2", AFT 18'-10.4"
  - (C) FWD 17'-07.4", AFT 18'-09.2"
  - (D) FWD 17'-06.8", AFT 18'-09.8"

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

- 38.** The BEST information on the nature and extent of damage to the vessel is obtained from \_\_\_\_\_.
- (A) the engineroom watch
  - (B) alarms and monitoring devices
  - (C) the bridge watch
  - (D) personnel at the scene of the damage

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

- 39.** Progressive flooding is controlled by securing watertight boundaries and \_\_\_\_\_.
- (A) abandoning ship
  - (B) pumping out flooded compartments
  - (C) jettisoning cargo
  - (D) transferring water ballast

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

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

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

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

**41.** The gross weight of a fully charged CO2 bottle in a fixed CO2 system is 220 lbs. When the bottle is empty it weighs 120 lbs. What is the minimum acceptable gross weight of the CO2 bottle before it should be recharged by the manufacturer?

- (A) 200 lbs
- (B) 205 lbs
- (C) 210 lbs
- (D) 220 lbs

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

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

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

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

**43.** A squeeze-grip type carbon dioxide portable fire extinguisher has been partially discharged. It should be \_\_\_\_\_.

- (A) replaced in its proper location regardless of weight
- (B) labeled empty and recharged as soon as possible
- (C) replaced in its proper location if weight loss is no more than 25%
- (D) replaced in its proper location if weight loss is no more than 15%

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

**44.** As seen in illustration D039SA below a complete set of spare batteries for a fireman's outfit can be found in what location designated by this symbol on the ship's fire control plan?

- (A) 30
- (B) 58
- (C) 59
- (D) 68

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

**45.** If heavy smoke is coming from the paint locker, the FIRST firefighting response should be to \_\_\_\_\_.

- (A) enter and use a portable extinguisher
- (B) open the door to evaluate the extent of the fire
- (C) release the CO2 flooding system
- (D) secure the ventilation

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

**46.** Traditionally, the signal for fire aboard ship is \_\_\_\_\_.

- (A) continuous sounding of the ship's whistle and the general alarm for at least 10 seconds
- (B) 1 short blast on the whistle
- (C) more than 6 short blasts and 1 long blast on the whistle, and the same signal on the general alarm
- (D) alternating short and long blasts on the ship's whistle

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

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

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

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

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

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

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

**49.** If you are forced to abandon ship in a rescue boat, you should \_\_\_\_\_.

- (A) remain in the immediate vicinity
- (B) head for the closest sea-lanes
- (C) vote on what to do, so all hands will have a part in the decision
- (D) head for the nearest land

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

**50.** 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) If on a coastwise voyage along the east coast of the U.S., you should put into the nearest port.
- (B) When over 200 hundred miles from a port in the danger zone, you should not darken ship.
- (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.*

**51.** While underway in thick fog you are on watch and hear the cry "man overboard". Which type of maneuver should you make?

- (A) Racetrack turn
- (B) figure eight turn
- (C) Round turn
- (D) Williamson turn

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

**52.** AMVER is a system which provides \_\_\_\_\_.

- (A) satellite communications
- (B) position reporting service
- (C) navigational information
- (D) weather information

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

**53.** You are on watch and receive word that a person has fallen overboard from the starboard side. What should your first action be?

- (A) sound the man overboard alarm
- (B) put the wheel hard right
- (C) notify the Master
- (D) put the engines full astern

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

**54.** You have a large, broken-down vessel in tow with a wire rope and anchor cable towline. Both vessels have made provision for slipping the tow in an emergency; however, unless there are special circumstances \_\_\_\_\_.

- (A) the towing vessel should slip first
- (B) they should slip simultaneously
- (C) the vessel towed should slip first
- (D) either vessel may slip first

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

**55.** You are on a ship that has broken down and are preparing to be taken in tow. You will use your anchor cable as part of the towline. Which statement is TRUE?

- (A) The anchor cable should be veered enough to allow the towline connection to be just forward of your bow.
- (B) The strain of the tow is taken by the riding pawl, chain stopper, and anchor windlass brake.
- (C) The anchor cable should be veered enough to allow the towline connection to be immediately astern of the towing vessel.
- (D) The anchor cable should be led out through a chock, if possible, to avoid a sharp nip at the hawsepipe lip.

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

**56.** You are underway in mid-ocean when you hear a distress message. The position of the sender is 150 miles away. No other vessel has acknowledged the distress. Your maximum speed is 5 knots and due to the seriousness of the distress, you cannot arrive on scene to provide effective assistance. What action should you take?

- (A) Transmit a message as though your vessel was in distress.
- (B) Send an urgency message about the distress.
- (C) Use the signal MAYDAY RELAY and transmit the distress message.
- (D) Do not acknowledge the distress message.

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

**57.** A distress signal \_\_\_\_\_.

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

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

**58.** In order for the automatic lifeboat drain to operate properly \_\_\_\_\_.

- (A) there is an automatic ball check located in a siphon tube
- (B) the cap should be removed to drain the boat when it is waterborne
- (C) the cage must be free of rubbish or the ball may not seat properly
- (D) the small lever to release the rubber ball float must be turned counterclockwise

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

**59.** Which item of the listed survival craft equipment would be the most suitable for night signaling to a ship on the horizon?

- (A) An orange smoke flare
- (B) A red handheld flare
- (C) A flashlight
- (D) A red parachute flare

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

**60.** When retrieving the survival craft, the helmsman should instruct the crewman to \_\_\_\_\_.

- (A) open the doors
- (B) check that hooks are fully locked in place
- (C) check the fuel level
- (D) take the life preservers off

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

**61.** In illustration D015SA below, which item number correctly identifies the hydrostatic release?

- (A) 3
- (B) 6
- (C) 7
- (D) 10

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

**62.** 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.*

**63.** Which vessel greater than 100 GT is NOT required to have an EPIRB.

- (A) A towing vessel
- (B) A non self-propelled vessel
- (C) A sailing vessel
- (D) A fishing vessel

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

**64.** Your vessel is required to have an impulse-projected line throwing appliance. The auxiliary line must \_\_\_\_\_.

- (A) be made of synthetic material
- (B) be of a light color
- (C) have a breaking strength of 9000 lbs
- (D) be 250 meters in length

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

**65.** Life preservers must be marked with the \_\_\_\_\_.

- (A) vessel's home port
- (B) maximum weight allowed
- (C) vessel's name
- (D) stowage space assigned

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

**66.** You are downbound in an ice filled channel. An icebreaker is meeting you and sounds two short, one prolonged, and two short blasts on the whistle. What action should you take?

- (A) Move to the right hand side of the channel and slow to bare steerageway.
- (B) No action is required; the icebreaker will move out of the channel.
- (C) Slow to bare steerageway and be prepared to come ahead as the icebreaker commences escorting your vessel.
- (D) Stop your headway and await further signals.

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

**67.** Which single-letter sound signal(s) may only be made in compliance with the Rules of the Road?

- (A) S
- (B) D
- (C) E
- (D) All of the above

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

**68.** General requirements for a vessel's radiotelephone station log are that \_\_\_\_\_.

- (A) it must identify the vessel's name and official number
- (B) logs must be kept in an orderly manner
- (C) erasures are not allowed
- (D) All of the above

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

**69.** How should the number "3" be pronounced when spoken on the radiotelephone?

- (A) NUM-ERL-THREE
- (B) TAY-RAH-TREE
- (C) TRIC-THREE
- (D) BEES-SOH-THREE

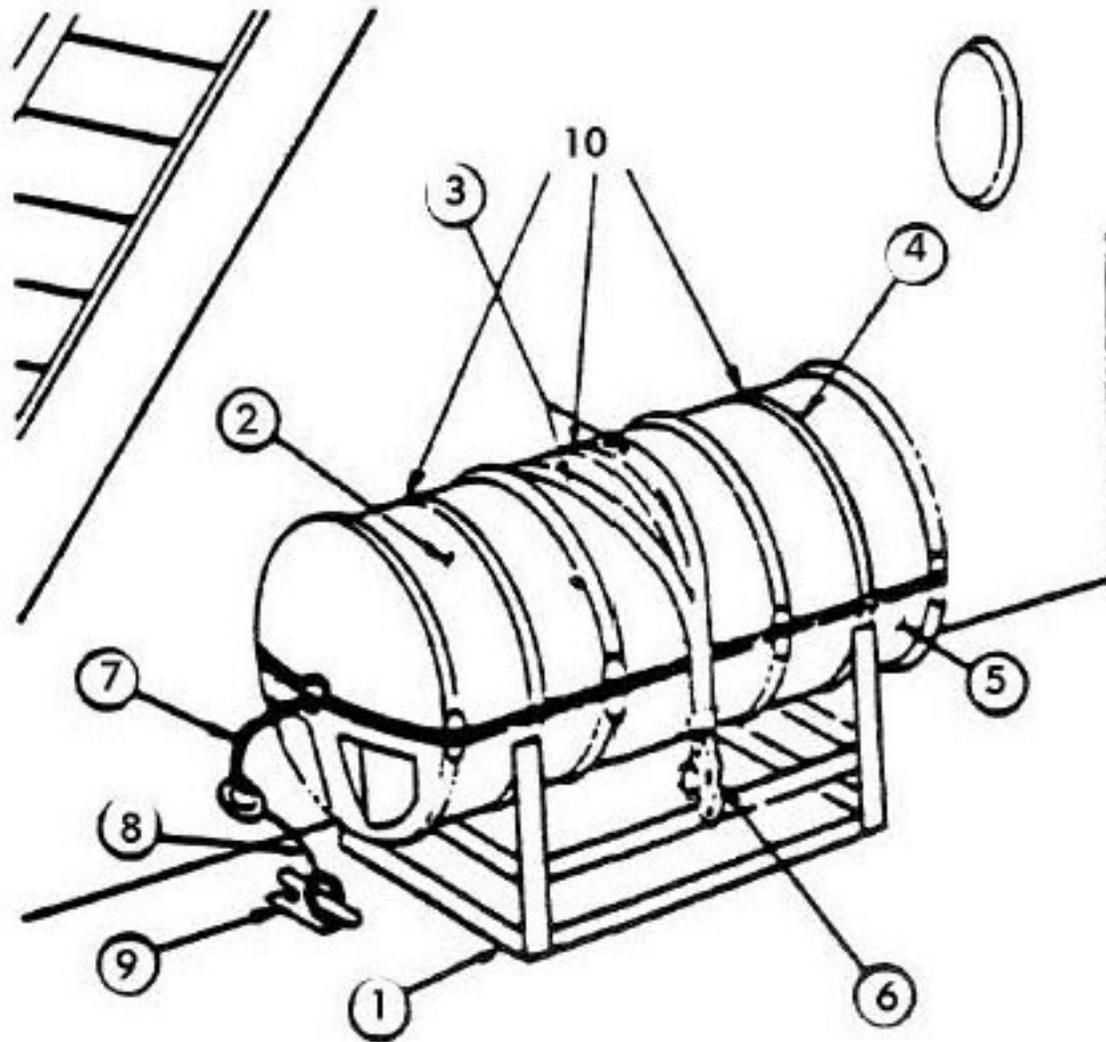
*If choice B is selected set score to 1.*

**70.** If you receive the signal over radiotelephone of "Romeo Papa Tango" while using the International Code of Signals, you should \_\_\_\_\_.

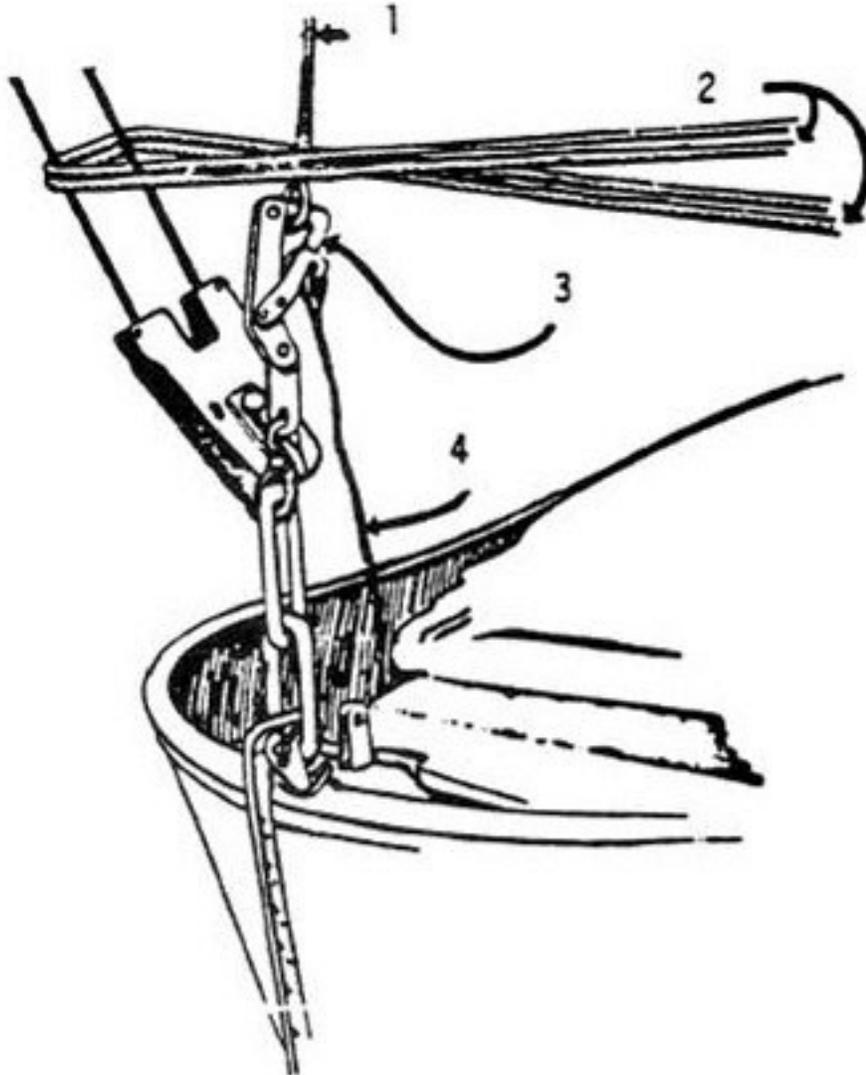
- (A) report to the caller
- (B) repeat your last transmission
- (C) end the transmission
- (D) continue since he received your last transmission

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

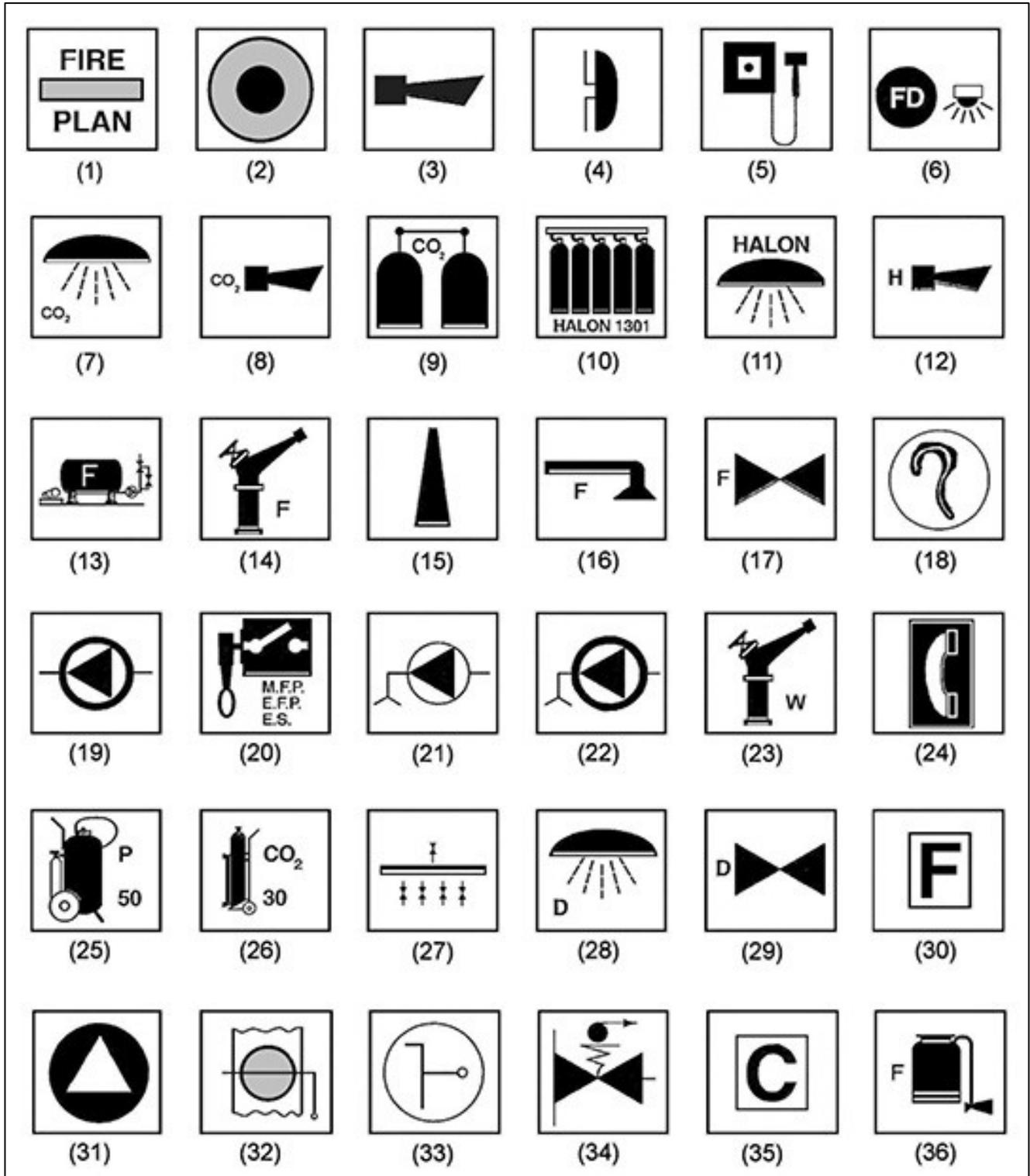
## D015SA



## D016SA



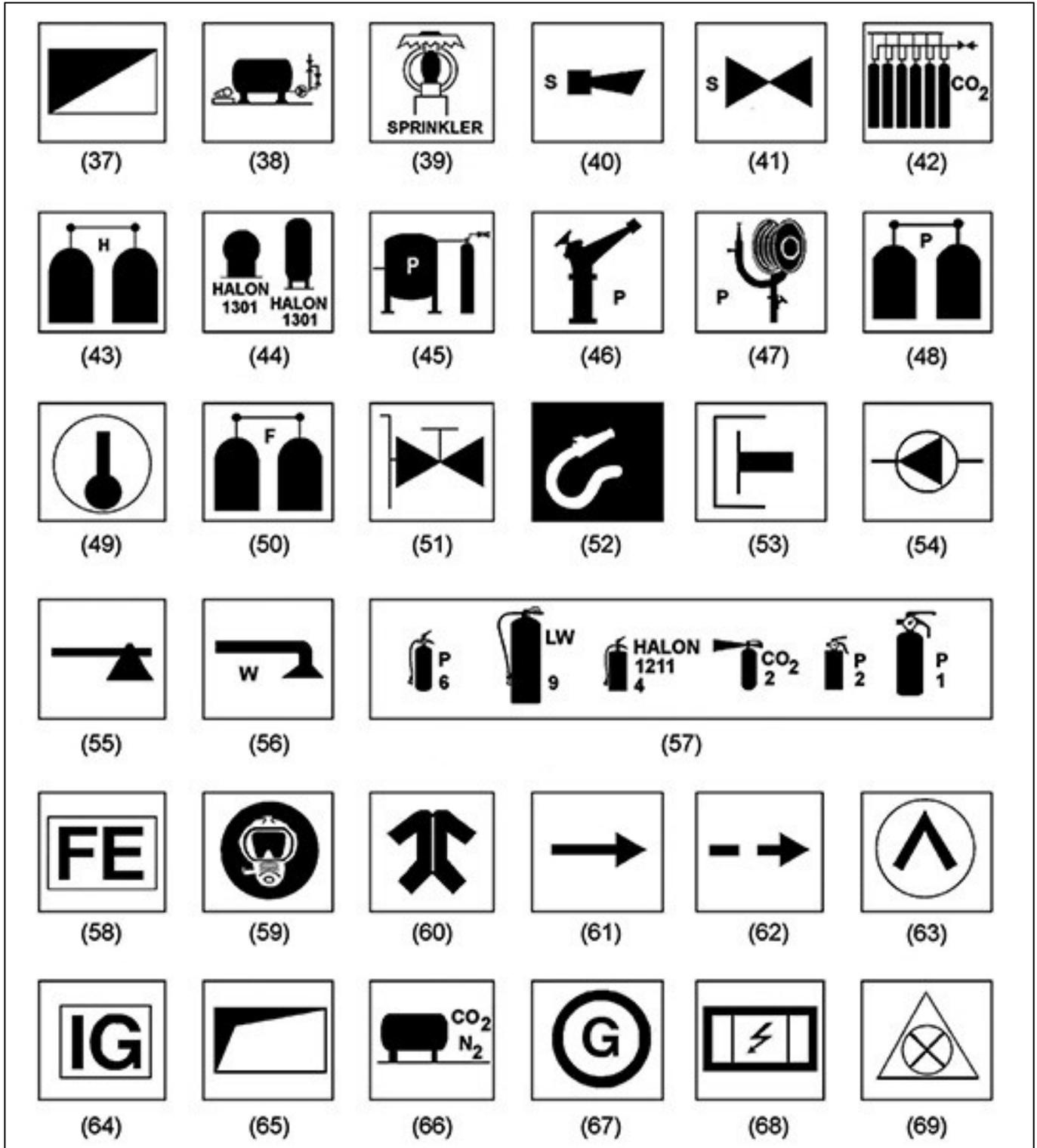
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