

**Demo PDF file. This file includes questions: 10 from 1985. Full version of file looks the same as demo, but full version includes all questions. You may download file with all questions by link on bottom of this page**

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## **Q112 - Deck Safety**

### **1. What is the required minimum length of the painter for a lifeboat in ocean service?**

- **two times the distance from the boat deck to the light waterline or 50 feet whichever is greater**
- 60 fathoms
- the distance from the main deck to the light waterline
- twice the distance from the main deck to the light waterline or 50 feet whichever is greater

Note:

*The minimum length of a lifeboat painter in ocean service is determined by regulations requiring it to be twice the distance from the boat deck to the light waterline, or 50 feet, whichever is greater, ensuring sufficient slack for safe launching and maneuvering.*

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

- Absorb erosion of high-velocity discharge stream
- Seal pump shaft against entry of air
- **Isolate the outlet side from the inlet side**
- Dampen the turbulent discharge flow

Note:

*Wearing rings in centrifugal pumps isolate the high-pressure discharge side from the low-pressure suction side, minimizing internal leakage and maintaining pump efficiency. They are replaceable components designed to limit flow between these pressure zones, unlike shaft seals or flow dampeners.*

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### **3. Rotation of the steering wheel on the navigation bridge initiates oil pressure being applied to the steering gear rams by \_\_\_\_\_.**

- regulating the oil flow with the six-way valve
- moving the automatic differential valve
- moving the follow up indicator which regulates the six-way valve
- **varying the angle of a tilting box or eccentricity of a floating ring**

Note:

*Steering wheel rotation initiates oil pressure to the steering gear rams by varying the angle of a tilting box or eccentricity of a floating ring, which changes the hydraulic pump's displacement and thus its output pressure.*

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### **4. Under normal operating conditions, the rudder is hydraulically locked unless which situation occurs?**

- The variable stroke pump is off stroke
- **A rudder order is given by the control system**
- An electric power system failure occurs at the steering gear
- The manual trick wheel is engaged for steering

Note:

*The rudder is hydraulically locked under normal operation unless a rudder order is issued by the control system, which releases the hydraulic pressure and allows movement.*

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**5. The follow-up gear on an electro-hydraulic steering gear \_\_\_\_\_.**

- relieves excessive fluid pressure
- **takes the pump off stroke when the desired rudder angle is attained**
- synchronizes wheel position with the rudder position
- returns the rudder to midposition when the wheel is released

Note:

*The follow-up gear in an electro-hydraulic steering system stops the hydraulic pump when the desired rudder angle is achieved, preventing rudder over-travel. It provides feedback to compare the ordered and actual rudder angles, and its function is not pressure relief, rudder centering, or wheel/rudder synchronization.*

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**6. In an electro-hydraulic steering system, rudder movement is maintained in close synchronization with the steering wheel position by means of the \_\_\_\_\_.**

- trick wheel
- **follow-up control**
- six-way valve
- Rapson slide

Note:

*Follow-up control synchronizes rudder and steering wheel position by using feedback to stop hydraulic motion when the desired angle is reached. This system compares the ordered rudder angle to the actual rudder angle, driving the error to zero. A trick wheel is a manual backup, a six-way valve reroutes hydraulic flow, and a Rapson slide is a mechanical linkage; none of these provide the necessary feedback for synchronization.*

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**7. When the helm is turned on the navigation bridge, which of the listed actions will be the FIRST response in the steering room on a ship equipped with an electro-hydraulic steering gear?**

- The pumps go to full stroke.
- The six-way valve aligns itself with the running pump.
- Both port and starboard cables are energized.
- **The synchronous receiver turns, duplicating the helm motion.**

Note:

*The initial response in the steering gear room of a ship with an electro-hydraulic steering system is the synchronous receiver turning to match the helm motion on the bridge.*

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**8. If one hydraulic pump of an electro-hydraulic steering unit fails, the vessel's steering can initially be maintained by activating which of the following units?**

- The accumulator
- **The standby pump**
- The trick wheel
- The telemotor

Note:

*A standby pump is designed to maintain steering operation when a hydraulic pump fails by providing an independent hydraulic power source.*

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**9. Dual electro-hydraulic steering units usually operate \_\_\_\_\_.**

- with both pumps on line at the same time
- only when the rudder is moved amidships
- with the follow-up gear disconnected
- **with one pump on standby**

Note:

*Dual electro-hydraulic steering units typically operate with one pump on standby to ensure redundancy and minimize wear.*

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**10. According to the Code of Federal Regulations, which of the following statements is correct regarding the steering gear on a vessel contracted for after June 9, 1995?**

- On hydraulic type steering gears, a suitable arrangement of check valves in the main piping system may be considered as a means of steadying the rudder.
- **A separate auxiliary means of steering is not required where the main gear is of the dual power hydraulic type, having two independent pumps and connections.**
- Hydraulic structural rudder stops are mandatory.
- All of the above.

Note:

*For vessels contracted after June 9, 1995, a dual-power hydraulic steering gear with two independent pumps and connections may replace a separate auxiliary steering gear, as stipulated in the Code of Federal Regulations.*

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