
Q512 - General Subjects II

1. Under the federal regulations of 33CFR Subchapter O, if a vessel equipped with a Type II Marine Sanitation Device enters a body of water where the discharge of treated or untreated sewage is prohibited, which of the following methods of securing the device to prevent the discharge of sewage is ACCEPTABLE if it is impractical to close the seacock and prevent its opening?

- Making an announcement over the public address system advising all concerned that the vessel is entering a "no discharge zone".
- Placing a warning sign on the door to the space enclosing the toilets advising all concerned that the vessel is entering a "no discharge zone".
- **Locking the door to the space enclosing the toilets with a padlock or door handle key lock to prevent entry when the vessel is entering a "no discharge zone".**
- Placing of tape forming an "X" over toilet and urinal bowls to convey to all concerned that the vessel is entering a "no discharge zone".

Note:
When operating in a no-discharge zone and closing the seacock is impractical, securing a Type II Marine Sanitation Device requires preventing its use. Locking the toilet space physically prevents operation and discharge, fulfilling the regulatory requirement.

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2. When preparing/writing shipyard items for your vessel's upcoming dry-docking period, what would you consider as an item regarding CuNi saltwater cooling systems/piping?

- **Identify in your item all steel waster piece pipe spools in the CuNi systems and require them to be removed and replaced.**
- This item should be of no concern since you have not experienced system piping degradation/leaks.
- Remove certain designated CuNi piping sections for inspection.
- Replace all bonding pieces/wires between all CuNi system flanges.

Note:
Steel waster pieces in CuNi saltwater systems create galvanic corrosion and should be identified and replaced during dry-dock to ensure system reliability.

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3. You are conducting an operational test of your main steering gear system. The main steering gear must be capable of moving the rudder from 35 degrees on either side to 35 degrees on the other with the vessel at its deepest load line draft and running at maximum ahead service speed, and from 35 degrees on either side to 30 degrees on the other in what minimum time frame?

- **28 seconds**
- 45 seconds
- 1 minute
- 2 minutes

Note:
SOLAS and U.S. regulations require the main steering gear to move the rudder from 35 degrees to 30 degrees in no more than 28 seconds at the deepest load line draft and maximum ahead service speed; therefore, 28 seconds is the correct answer.

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4. Prior to entering the navigable waters of the United States after an international voyage, your vessel must conduct drills according to 33 CFR regulations for ports and waterways safety that test steering system functionality and log that in the vessel logbook, unless the drill is conducted and logged on a regular basis at least once every three months. Within how many hours of arrival must these drills be performed?

- 6 hours
- 12 hours
- 24 hours
- **48 hours**

Note:
Steering-gear drills required by 33 CFR must be performed within 48 hours of arrival in U.S. navigable waters after an international voyage, unless drills are already conducted and logged at least once every three months.

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5. Prior to entering the navigable waters of the United States after an international voyage, your vessel must conduct drills according to 33 CFR regulations for ports and waterways safety that test steering system functionality and log that in the vessel logbook, unless the drill is conducted and logged on a regular basis at least once every three months. Which of the following functions must be tested for?

- **Operation of the main steering gear from within the steering gear compartment utilizing the means of communication between the navigating bridge and the steering gear compartment.**
- Operation of the main steering gear from each bridge wing, if fitted, utilizing the normal means of communication on the bridge wings.
- Operation of the auxiliary steering gear from the main navigating bridge utilizing the normal means of communication in the wheelhouse.
- Operation of the auxiliary steering gear from each bridge wing, if fitted, utilizing the normal means of communication on the bridge wings.

Note:
Vessels entering U.S. waters after international voyages must demonstrate steering system functionality through drills or quarterly emergency steering drills logged in the vessel logbook. These drills specifically require testing the main steering gear's operation from within the steering gear compartment, utilizing communication with the navigating bridge.

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6. During the Special Survey the propeller is removed and shaft pulled into the vessel. Which of the following tests must be performed on the propeller shaft prior to refitting?

- The propeller flange must be checked for cracks using non-destructive testing.
- The shaft weight must be checked prior to refitting.
- **The tapered section must be checked for cracks using non-destructive testing.**
- The entire shaft must be checked for cracks using non-destructive testing.

Note:
The tapered section of the propeller shaft is the area of highest stress and requires non-destructive testing for cracks before refitting to prevent shaft failure or propeller loss.

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7. In accordance with the international MARPOL Annex VI regulations, which of the listed substances are prohibited from being burned in a shipboard incinerator?

- **Polychlorinated biphenyls (PCBs)**
- Sewage waste sludges
- Unground garbage
- Oil residue sludges

Note:
MARPOL Annex VI prohibits the incineration of polychlorinated biphenyls (PCBs) due to their highly toxic and persistent emissions; other listed substances are permitted for incineration under specific conditions.

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8. In accordance with the international MARPOL Annex VI regulations, what is the minimum allowable flue gas outlet temperature for a continuous-fed shipboard incinerator while in operation?

- 450°C
- 650°F
- **850°F**
- 1050°F

Note:
MARPOL Annex VI regulations require a minimum flue gas outlet temperature of 850F for continuous-fed shipboard incinerators to ensure complete combustion and minimize emissions; this temperature is approximately 454C.

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9. In accordance with 46 CFR Subchapter I (Cargo and Miscellaneous Vessels), it is the duty of the chief engineer to acquire and seal a sample of fuel oil received whenever fuel oil bunkers are taken. This sample must be preserved until _____.

- **that particular supply of oil is exhausted**
- the voyage is completed
- return to the first U.S. port where upon it must be sent ashore for chemical analysis and the findings submitted to the nearest officer in charge, Marine Inspection
- it can be sent ashore to the proper oil company personnel for testing and the results entered in the Oil Record Book, CG-480

Note:
The fuel oil sample must be preserved until the specific supply of oil is exhausted, as mandated by 46 CFR Subchapter I.

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10. When looking for IMO regulations on a vessel's oil water separator, the information will be found in which of the following documents?

- SOLAS
- ISM manuals
- **MARPOL**
- CFRs

Note:
IMO regulations for oil water separators are found in MARPOL, specifically Annex I which addresses prevention of pollution by oil. MARPOL establishes performance standards and requirements for oil filtering equipment, unlike SOLAS which focuses on safety of life, ISM manuals which implement safety management systems, and CFRs which are U.S. national regulations.
