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Q603 - Engineering Safety & Environmental Protection

1. The term "arrival ballast" refers to _____.

- brackish water ballast
- dirty ballast
- any form of sea water ballast
- **clean ballast**

Note:

Arrival ballast refers to clean ballast, which is ballast water intended for discharge upon arrival at a port and must meet oil pollution limits.

2. In a compartment that has been completely flooded with water, the greatest pressure will be exerted _____.

- at a point that is one-third from the bottom of the bulkhead
- at the vertical center of the bulkhead
- **along the bottom of any bulkhead**
- along the top of the bulkhead

Note:

Hydrostatic pressure increases with depth; therefore, the greatest pressure in a flooded compartment is exerted along the bottom of any bulkhead.

3. In preparation for an extended yard period, you are reviewing your ship's plans. You notice several bulkheads are labeled A60. What is indicated by the label A60?

- **Fire division boundary, A Class, with insulation that will limit temperature rise to below the allowable level for 60 minutes.**
- Materials meeting construction yard specification A60.
- Damage stability bulkhead, A Class, with bulkhead strength that will limit flooding for 60 minutes.
- Fire division boundary, A Class, with insulation that will limit temperature rise to below the allowable level for 60 seconds.

Note:

The A60 designation indicates an A-class fire division boundary with insulation limiting temperature rise to below allowable levels for 60 minutes.

4. During repairs it is necessary to replace an existing vessel bulkhead. Drawings indicate the bulkhead is A60. "A" indicates which of the following?

- "A" class bulkheads must not allow flame or smoke passage for 15 minutes when subjected to a fire test
- "A" class bulkheads must not allow flame or smoke passage for 30 minutes when subjected to a fire test
- **"A" class bulkheads must not allow flame or smoke passage for 60 minutes when subjected to a fire test**
- "A" class bulkheads must not allow flame or smoke passage for 120 minutes when subjected to a fire test

Note:

"A" in A60 bulkheads indicates that the bulkhead must prevent flame and smoke passage for 60 minutes during a fire test.

5. During repairs it is necessary to replace an existing vessel bulkhead. Drawings indicate it is a "B" class bulkhead. This indicates which of the following?

- "B" class bulkheads must not allow flame or smoke passage for 15 minutes when subjected to a fire test.
- **"B" class bulkheads must not allow flame passage for 30 minutes when subjected to a fire test.**
- "B" class bulkheads must not allow flame passage for 60 minutes when subjected to a fire test.
- "B" class bulkheads must not allow flame passage for 120 minutes when subjected to a fire test.

Note:

A 'B' class bulkhead must prevent flame passage for 30 minutes during a fire test, as defined by SOLAS regulations.

6. During fueling operations oil is detected in the water adjacent to your vessel. If however, it is determined to be from some source other than your vessel, you should _____.

- secure operations until the exact type of oil is determined
- **notify the Coast Guard**
- make an entry in the Oil Record Book to that effect
- all of the above

Note:

Observed oil pollution must be reported promptly for investigation and cleanup; therefore, the Coast Guard should be notified even if the source is not your vessel.

7. After taking on fuel oil, the hoses should be disconnected and _____.

- draped over the fantail to dry out
- **drained into buckets or fuel tanks**
- drained into the bilges and washed out
- drained over the side and washed out

Note:

Fuel oil hoses should be drained into buckets or fuel tanks to prevent pollution and maintain safety, as discharging oil into the water, bilges, or on deck is prohibited by regulations and poses fire and slip hazards.

8. During fueling operations, which of the listed precautions should be taken when topping off fuel tanks?

- Close all overflow valves.
- **Reduce the pumping rate and sound tanks frequently.**
- Reduce the pumping rate by closing the deck filling valve.
- Place 5-gallon containers under all flange connections in the fuel line.

Note:

Topping off fuel tanks requires reducing the pumping rate and frequently checking tank levels to prevent overfilling and spills; closing vents is unsafe, throttling valves improperly controls flow, and spill containers are ineffective.

9. After fuel tanks have been filled and bunkers completed, which of the listed procedures should be followed next?

- The tanks should be marked with a bull stamp on the manifold filling valve.
- The pressure-vacuum relief valve should be reset.
- The tanks should be made seaworthy to prevent contamination.
- **The tanks should be sounded to verify levels.**

Note:

Sounding tanks after bunkering verifies fuel levels and quantity, confirming no overfills or leaks.

10. During topping off of bunker tanks, the loading rate must be personally supervised by the

_____.

- terminal operator
- **person in charge**
- chief engineer
- master

Note:

U.S. regulations mandate that topping off bunker tanks be directly supervised by the designated person in charge (PIC), not by job title. The PIC is formally designated, meets specific qualifications, and is legally responsible for overseeing critical transfer stages, distinguishing them from the terminal operator, chief engineer, or master, who may act as PIC if qualified.
