Boat Safety Scheme
Part Two

Inboard engines and fixed fuel systems

Part Two

Key Changes..

- Accessible diesel fuel tank filler pipes
- Material of fuel filler & vent hose
- Fuel tank filler /vent to be supported
- All deck connections to be clearly marked
- Fuel vent to be min internal diameter
- Pressure test to fuel tank
- Fuel tank drain valve

Part Two

Key Changes.. (Cont)

- Balance pipe valves
- Fuel filters
- Fuel cock at tank
- Petrol fuel cocks on gravity feed systems
- Means of reversing
- Dual-fuelled petrol engines
- Dry Exhaust systems to be lagged

Fuel Filling Pipes 2.2

Fuel filling pipework.

- Of at least 31.5mm (1½") internal diameter but any flexible section to be at least 38mm i.d.
- suitable for the fuel used
- installed with leak-proof joints
- installed with joints & connections readily accessible

Flexible hoses used as filling pipes

- of non-kinking material
- adequately supported
- of minimum practicable length
- suitable for the fuel used

Fuel Filling Pipes 2.2

Fuel Filling Pipes 2.2

Deck filling connections

- outside the coaming
- taken to deck level (tanks below decks), and/or;
- arrange filling point to discharge overflowing fuel overboard

Reasons for fuel overflowing:

- poor installation design
- careless filling procedure
- poor maintenance

Fuel Filling Pipes 2.2

Compliance demands that filler cap positioned so that:

- the camber of the deck will cause any overflow to discharge overboard
- a coaming high enough to prevent spillage reaching the interior of the vessel
- a diverter arrangement is fitted around the cap

Fuel Filling Pipes 2.2

Exemption 11.1

Vessels manufactured prior to 16 June 1998 and having a fuel filling pipe of an internal diameter of at least 32mm (1 ¼”) are not required to comply with that part of Standard 2.2 which requires that a fuel filling pipe shall have an internal diameter

of at least 38mm (1 ½”)

Deck & Fuel Filling Connections 2.3

- situated to minimise risk of cross-contamination
- clearly marked indicating their fuel type or purpose

Cross-contamination prevented by:

- camber of deck carrying any overflow overboard
- a diverting arrangement around the connection

Deck & Fuel Filling Connections 2.3

Deck & Fuel Filling Connections 2.3

Unused filling and discharge points..

requirement to check & marked as unused

Deck & Fuel Filling Connections 2.3

Deck & Fuel Filling Connections 2.3

Additional Information

Vent pipes needed so air can:

- enter the fuel tank to replace fuel as it is used
- be displaced from the tank during re-fuelling

Fuel tank vent pipes 2.4

Vent pipe to be:

- 12mm (1/2 “) minimum internal diameter
- of minimum practicable length
- fitted at the highest point of the tank
- connected with leak proof joints

The material used is to be:

- non-kinking
- suitable for the fuel used

Fuel tank vent pipes 2.4

Exemption 11.2

Vessels manufactured prior to 16 June 1998 and having a vent pipe of an internal diameter of at least 9.5mm (3/8 “) are not required to comply with that part of standard 2.4 which requires that a vent pipe shall have an internal diameter of at least 12mm (1/2 “)

Fuel tank vent pipes 2.4

Exemption 11.2 (Cont)

In the case of vessels manufactured prior to 16 June 1998 having no vent pipe, a vent in the screw cap or filling pipe above deck level may be fitted provided that there is a flame arrester complying with the requirements of Standard 2.5. The flame arrester shall have a minimum diameter 12mm

Fuel tanks 2.6

The tank shall:

- be properly secured
- be installed as low as practicable
- be constructed of non-corrosive materials
- This standard applies to all fuel tanks

THE MATERIALS USED SHALL HAVE A FIRE RESISTANCE OF 30 MINUTES IN ACCORDANCE WITH BS 476: PART 20

Fuel tanks 2.6

The tank shall: (Cont)

- be pressure tested to 0.2 kgf/cm2 (2.9 lbf/in2)
- be marked to indicate this

All joints and seams shall:

- be efficiently welded, brazed or close riveted
- be pressure tested to 0.2 kgf/cm2 (2.9 lbf/in2)

Fuel tanks 2.6

Fuel tanks 2.6

Fuel tanks 2.6

Exemption 11.3

Vessels manufactured prior to 16 June 1998 are not required to comply with that part of Standard 2.6 which requires that fuel tanks must have sustained a pressure test of 0.25kgf/cm² (3.5 lbf/in²) before installation and be marked to indicate this.

Fuel tanks 2.6

Permanently installed plastic/non-metallic fuel tanks are subject to checks see

Checking Procedures

Appendix F

Fuel tanks 2.6

Fuel tank drains 2.11

“New” Boat

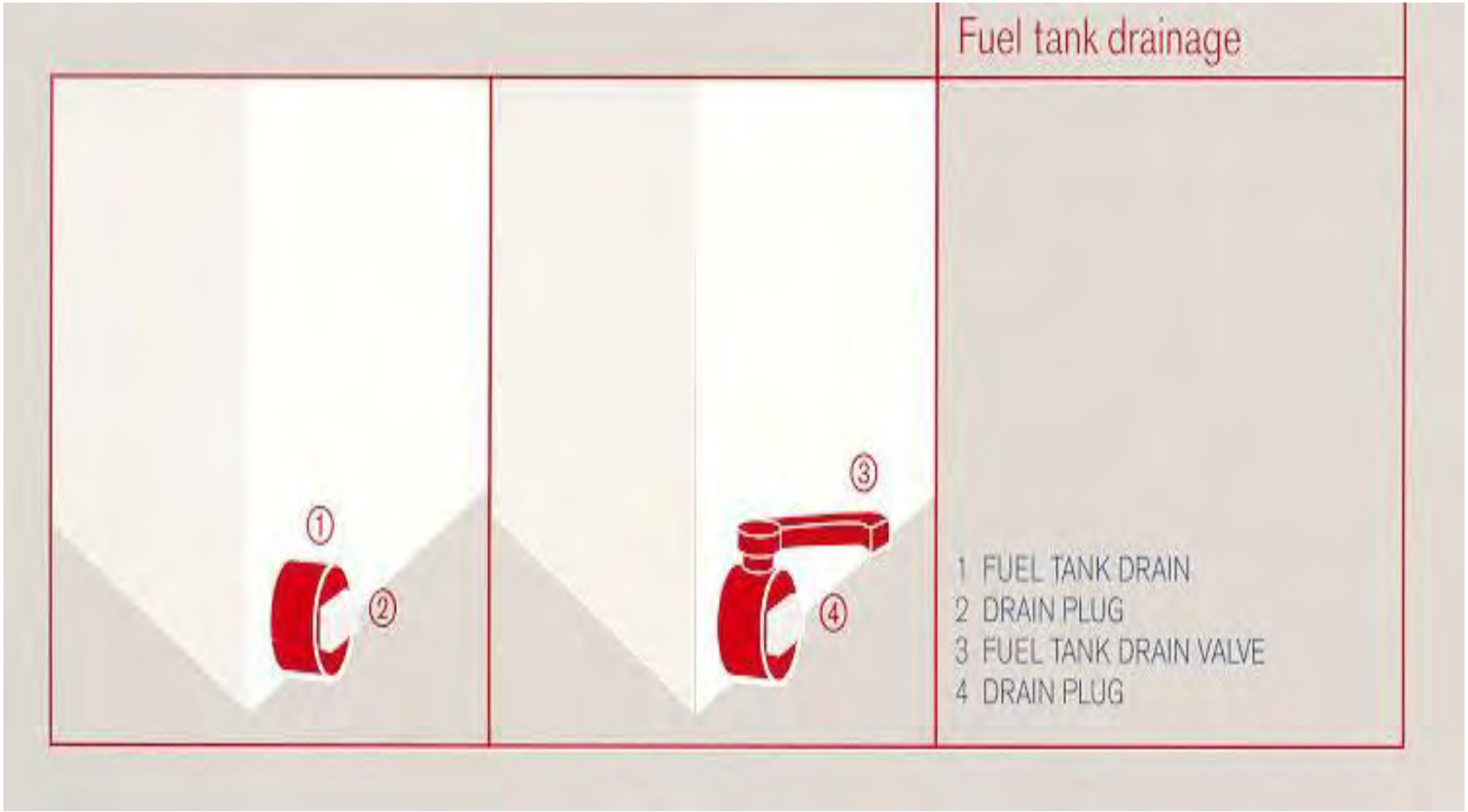
- Fuel tank drains must be properly closed to prevent accidental outflow of fuel.
- Every drain must have a ‘tools-to-remove” plug, cap or blanking plate.

If a drain valve is fitted it must be;

- connected by a leak proof connection, and
- fitted with a plug which:
    - cannot be opened accidentally
    - cannot be removed without the use of tools

If fitted with a drain, tanks are required to be drained via a valve, fitted with a tools-to-remove plug. The lack of a fuel tank drain is not a fail point

Fuel tank drains 2.11



Fuel tank drains 2.11

Fuel tank drains 2.11

Fuel tank drains 2.11

Exemption 11.5

Vessels manufactured prior to 16 June 1998 and having a fuel tank drain without a valve are not required to comply with that part of Standard 2.11 which requires that fuel tanks shall have a suitable drain valve fitted with a plug on the outlet

Fuel supply and return tank connections 2.12

2:12:1

If the fuel feed connection is below the top or the highest point of the sides or ends of the diesel tank check that the connection is either protected by a valve or, if welded, by the feed pipe reaching above the top of the tank

Fuel supply and return tank connections 2.12

2:12:3

If the fuel return connection is below the top or the highest point of the sides or ends of the diesel tank check that the connection is either protected by a valve or, if welded, by the feed pipe reaching above the top of the tank

Fuel supply and return tank connections 2.12

Exemption 11.6

Diesel fuelled vessels manufactured prior to 16 June 1998 are not required to comply with that part of standard 2.12 which requires that the fuel supply and return pipes shall be taken through the top of the tank or as near to the top of the tank as is practicable

Fuel pipes & balance pipes 2.13

Only permitted in diesel fuelled installations;

- must comply with 2.13

be fitted with <u>valves</u> which must:

  - be directly attached to the tank
  - not become slack when operated

Fuel pipes & balance pipes 2.13

Fuel pipes & balance pipes 2.13

Check that it is not practicable to fit valves to an existing balance pipe where the pipe;

- Is not long enough to take the valves, or
- Could not be removed and then replaced with the valves in position

Fuel pipes & balance pipes 2.13

Fuel pipes & balance pipes 2.13

Exemption 11.7

Diesel fuelled vessels manufactured prior to 16 June 1998 vessels and fitted with a balance pipe between close coupled tanks are not required to comply with that part of Standard 2.13 which requires valves to be fitted where it is not practicable to do so

Fuel system shutoff cocks 2.17

For gravity-fed petrol installations visually check that a second cock, or means of operating the main cock, is within approximately 1 metre or arms length of every steering position

– Ref: ECP 2.17.5

Fuel pipes & Bilge water

ECP 2:18:1 Requires a visual check to confirm that any fuel pipes in the bilge area are above bilge water level.

This can be determined by:

- The presence of a tide mark
- The position of the bilge pump
- The level at which the float switch is set

Engine tray 2.22

Visually check for presence of oil tray or other means of containing oil leaks from engines and gearboxes and check for signs of oil outside the tray or oil tight area.

Examiners finding vessels with arrangements similar to the one described in the 2015 ECP should contact the BSS office

Reversing 2.21

Every vessel shall have:

- a means of reversing
- an engine stop control

Must be a means of reversing which is:

- effective
- operable from the steering position

Reversing 2.21

Exemption 11.8

Vessels manufactured prior to 16 June 1998 are not required to comply with that part of standard 2.21 which requires effective means of reversing

Exhaust Lagging & Shielding 2.23

Identify presence of air cooled engine or exhaust system not cooled by water and visually check presence of lagging or shielding.

Complete the checks as described in

2:23:1 – 2:23:3

Exhaust noise 2.24

Visually check for presence of a silencer cut-out (diverter valve) in the exhaust pipe before it enters the silencer;

Noise levels will not be checked at present during the Boat Safety Scheme examination but examiner must satisfy themselves that;

- An exhaust system, including a silencer/expansion box, is installed, and that all elements are properly connected.
- There are no signs of excessive damage or corrosion, or leaks of exhaust gases.

Exhaust noise 2.24

- Exhaust noise shall be effectively suppressed
- No form of exhaust silencer cut-out shall be used
- All exhaust systems need to include a silencer system to reduce noise to acceptable limits
- On older traditional boats expansion boxes may be found. These are acceptable providing they are to the original design and are in good condition
- There are systems which include a diverter valve so the exhaust gases can by-pass the silencer
- These by-pass or cut-out arrangements are <u>not permitted</u>

Boat Safety Scheme

End of part two

Inboard engines and fixed fuel systems