

BSS Checking Procedures update

Specification:

All pages to be:

- A5,
- as laid out below and
- laminated as existing Examination Checking Procedures

Two hole punched

Side bar indicates amended or additional text

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Update Record		
Update Description (Section & Pages)		Date
Rev 1 Part 2 p.24 Note added Part 2 p.25 Note added Part 3 p.6 Check 3.4.4 amended Part 3 p.9 Note added Part 7 p.28 Check 7.18.4 amended Appendix C p.11 C.4 para 5 corrected		March 2004

General Guidance

1. Don't forget that it is the **owner's** responsibility to comply with the BSS Standards as a condition of obtaining a licence. As a BSS Examiner you are only on the boat to check compliance.
2. It is vital that the owner understands this responsibility and the need to prepare the boat for examination. Don't forget to make sure that the owner understands this when you are discussing the examination arrangements.
3. This also means that it is the owner's responsibility to demonstrate compliance to you. If the owner cannot do that, or the owner is not on board, then you have no option but to fail that item until such time as it is presented for checking or supporting information is provided.
4. For example, Check 3.5.6 is tied to the requirement for those circuits that are permitted to bypass the master switch to be protected by a fuse or circuit breaker. If you cannot trace the circuits then it is up to the owner to demonstrate to you that no unprotected circuits bypass the switch. Do not guess!
5. The navigation authorities are relying on you to check out every boat you see to their published standards and issue the correct certificate. Don't forget that it is your name on the certificate and if things go wrong you will have to be prepared to co-operate with the investigation. Every investigation has the potential to lead to de-authorisation so it is in your own interests to make every effort to be sure that you do not certify anything that you have not checked.
6. Everyone makes the odd mistake and the Scheme can accommodate these. Wilful disregard for checking procedures and instructions or failure to co-operate with the BSS office are not acceptable and could lead to disciplinary action being taken.
7. If you are unsure whether or not some aspect to a boat is compliant you can contact the BSS office for assistance. The office is there to support you in your role without assuming your responsibility to carry out the examination diligently.

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**Exemption
11.7**

Diesel fuelled vessels manufactured prior to 16 June 1998 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.

**2.13.8
(Exemption
11.7)**

Exemption available for pre-June 1998 diesel vessels.

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

2.13.9

Visually and manually check balance pipe valves valve for slackness and signs of leaking fuel.

Standard **Flexible fuel hose**
2.14

Flexible tubing may only be used in the engine compartment and shall be suitable for the fuel used. It shall be of minimum practicable length, be reinforced and have an internal diameter of not more than half its external diameter and shall have a fire resisting quality as required by BS EN ISO 7840 or DIN 4798.

2.14.1 Not checked

2.14.2 Visually check that the fuel hose is marked as suitable for the fuel used or its use is supported by an appropriate declaration.

Visually and manually check for any signs of :

- damage or deterioration
- leaks
- any restriction of the bore due to collapse of the walls
- "soft" spots

2.14.3 Check that flexible fuel supply hose follows minimum practicable route

2.14.4 Not checked

2.14.5 Visually check that flexible hose is marked to BS EN ISO 7840 or an equivalent or higher standard.

Notes:

1. Injector leak-off pipes (spill rail/rack) must either be metallic, or meet 2.14.5, or comply with one of the options detailed in Technical Update August 2003.
2. Vintage and traditional type engines may feature a catch-pot arrangement as an alternative to the above. In this case the catch-pot must be metallic, secure, and have a lid.

Standard **Fuel pipe connections**
2.15

All connections permanently charged with fuel shall be made with efficient screwed, compression, cone, brazed or flanged joints. Soft soldered joints shall not be used.

2.15.1 Visually identify use of approved connection in rigid fuel pipes.
Manually and visually check for signs of fuel leaks at the joint or connection.

Check flexible hose connections which use hose clips or clamps for:

- appropriate clip/clamp size (minimum band width of 8mm on fuel supply and return systems but clamps fitted on small bore hose on engines may be smaller)
- appropriate clip/clamp tightness
- damage or deterioration to clip/clamp
- damage or deterioration to hose

Note:

Injector leak-off pipes (spill rail/rack) connections must meet 2.15.1 unless one of the alternative options detailed in Technical Update August 2003 is used.

All connections must be in good condition and leak-free

Standard
2.16

Fuel filters

All fuel filters shall be suitable for marine use and shall be of fire resistant quality.

2.16.1 Visually examine fuel filter for signs of corrosion or impact damage to any part of the filter body and its connections.

If the filter is not marked, or is not recognized as suitable for marine use, the owner will need to provide evidence that the filter complies with this Standard.

2.16.2 Visually examine any fuel filter located inside an engine compartment.

If the filter is not marked, or is not recognized as a fire resistant filter, the owner will need to provide evidence that the filter complies with this Standard.

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Standard 3.3

Main circuits

Main circuits shall be installed above bilge water level and all except starter circuits shall be protected by circuit breakers or fuses of the appropriate rating and of suitable design.

- 3.3.1** Visually check position of main circuits in relation to normal bilge water level.
- 3.3.2** Visually examine any fuses or circuit breakers that can be seen and check that rating is not greater than that specified on the fuse holder or body of the circuit breaker. Check that fuse rating is less than the current capacity of the cable protected.
- 3.3.3** Visually examine distribution box for presence of lid or cover if required.
- Visually examine fuses and circuit breakers and determine:
- the correct wire or cartridge is fitted
- Visually examine fuses and circuit breakers to ensure that they are:
- not damaged
 - fitted securely
 - not held closed by any tape or other device

Standard **Protection of cables against damage**
3.4

All cables shall be installed as high as is practicable in the vessel, and they shall be run clear of all sources of heat such as exhaust pipes. They shall not be run adjacent to fuel or gas pipes unless contained in suitable conduit. PVC insulated and/or sheathed cables shall not be run in direct contact with polystyrene thermal insulation. (see Exemption 11.10)

- 3.4.1** Visually check height of all visible cables within the vessel

- 3.4.2** Visually check routing of cables for proximity of heat sources and examine cable for signs of heat damage e.g. deterioration of insulation

- 3.4.3** Visually check electrical cables are supported clear of fuel pipes. Minimum clearance is not specified

- 3.4.4** Visually check "single insulated" electrical cables are supported 30mm clear of gas pipes.

Exemption 11.10

Vessels manufactured prior to 16 June 1998 and having PVC insulated or sheathed cables in direct contact with polystyrene thermal insulation are not required to comply with that part of Standard 3.4 which requires that PVC cables shall not run in direct contact with polystyrene thermal insulation until such time that an insulation resistance test discloses an electrical fault in cables in direct contact with polystyrene thermal insulation.

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- 3.5.6** Visually check that circuits supplying equipment which may bypass the battery master switch i.e. electric bilge pumps, security alarms, fire pumps and electronic navigation equipment with memories are protected by a suitable fuse or circuit breaker.
- 3.5.7** If the master switch is not visible, visually check that position is clearly marked with the marking in open view

NOTES:

1. The battery master switch(es) are intended to isolate electrical equipment from the supply provided by the battery.
2. Charging devices e.g. alternators, battery chargers, inverters, and renewable energy chargers (wind, solar) may be connected to the 'battery side' of the master switch provided that the cable is protected with a suitable fuse or circuit breaker installed as close as practical to the battery terminal.
3. Other circuits which may bypass the battery master switch consist of those already shown in the BSS Technical Manual i.e. electric bilge pumps, security alarms (including marine radios), fire pumps, and electronic navigation equipment with memories, along with any other equipment which **the manufacturer of the equipment** requires to be permanently supplied with the main battery master switch open. Every such circuit must be protected by a suitable switch, fuse or circuit breaker.
4. In cases where circuits which do not lie in the specified list are found directly connected to the battery, BSS Examiners are required to verify documentary evidence of the equipment manufacturer's requirement.

Standard 3.6 Main, starter & spark plug leads

Main and starter motor leads subject to high current shall have soldered or pressure crimped connectors. Spark plug leads shall be supported clear of the engine block and cylinder head.

3.6.1 Visually check that main leads are fitted with soldered ends or crimped connectors.

Visually check for battery terminals fitted with screw clamps on existing vessels and verify use of spreader plate in terminal.

3.6.2 Visually check that starter motor leads are fitted with soldered ends or crimped connectors.

3.6.3 Visually check that spark plug leads are supported so they are not touching the engine block or cylinder head.

Visually check leads for signs of heat damage.

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Standard 7.18 *Installation pipework shall not pass through ventilation or air conditioning ducts and shall not be exposed to leakage from water services. Installation pipework shall be remote and/or insulated from, and shall not pass through the same duct as, electricity or telecommunication services and shall be separated from electrical cables not in a conduit by at least 30 mm. Installation pipework shall not be situated less than 75 mm from exhaust pipes.*

7.18.1 Identify any ventilation or air conditioning duct and visually check for pipework entering or leaving the duct.

7.18.2 Visually check that no pipework is exposed to leakage from water services.

Visually check pipework for any signs of damage or deterioration.

7.18.3 Identify any duct containing electricity or telecommunication services and visually check for pipework entering or leaving the duct.

7.18.4 Determine by measurement that the pipework is separated by at least 30 mm from "single insulated" electrical cables not in a conduit

7.18.5 Determine by measurement that the pipework is separated from any exhaust pipe by at least 75 mm.

Standard 7.19 *Joints shall be made with compression fittings. (NOTE: For stainless steel and copper alloy pipework screwed fittings are acceptable). Soldered joints shall not be used. Joints shall be readily accessible. Joints shall be rigidly secured and fixing clips shall be attached no more than 150 mm from each joint connection. Joints shall be made at a point where stress is minimised. The number of pipe fittings and joints shall be kept to a minimum.*

7.19.1 Visually check each joint is made as follows:

- copper pipework - compression fittings;
- stainless steel or copper alloy pipework – compression or screwed fittings.

7.19.2 Visually check all joints are readily accessible.

7.19.3 Manually check each joint for movement.

Determine by measurement that fixing clips are attached no more than 150 mm from each joint connection.

7.19.4 Visually check for joints made at points of stress:

- pipes entering joints/fittings at abnormal angles;
- joints/fittings introduced at pipe bends or curves.

7.19.5 Visually check for presence of unnecessary joints.

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APPENDIX C

LPG INSTALLATIONS SOUNDNESS TESTING USING A MANOMETER (U-GAUGE)

C.1 PREPARATIONS

1. Examine high pressure stage components before opening cylinder valves
2. Test high pressure stage components with leak detection fluid
3. Check for presence of main shut-off valve after the regulator
4. Close main shut-off valve (if fitted). If not present, turn off supply at the cylinder(s)
5. Turn off all appliances

C.2 CONNECTING "U" GAUGE

1. Zero "U" gauge
2. Connect "U" gauge to test fitting

C.3 TEST PROCEDURE: LET BY TEST

1. Gradually turn on main shut-off valve
2. Note regulator lock up pressure (see BS 5482-3 Table D.1)
3. Close main shut-off valve
4. Light one appliance and let pressure fall to 5 mbar
5. Close appliance tap
6. Leave for 5 min for stabilisation and record the reading on the "U" gauge
7. Note reading and leave for a further 5 min
8. Record reading on "U" gauge
9. Any rise in the reading indicates let by from the main shut off valve

C.4 TEST PROCEDURE: PIPEWORK LEAKAGE

1. Ensure all appliances and main shut-off valve turned off and appliance isolation valves left on.
2. Turn on main shut-off valve and allow system to reach lock up pressure
3. Close the main shut-off valve
4. Light one appliance burner and allow pressure to fall to 30 mbar (propane) and 20 mbar (butane)
5. Close appliance tap.
6. Leave for 5 min for stabilisation and record pressure in "U" gauge
7. Identify rise in pressure reading indicating main shut off valve let by has developed
8. Leave for a further 5 min and record pressure in "U" gauge.
9. There must be no discernible pressure drop in the system

C.5 POST-TEST PROCEDURE

1. Release pressure in system by lighting an appliance burner
2. The opportunity should now be taken to light all appliance burners to carry an assessment of all flame pictures as required at 8.2.5 and a check on any flue required by 8.2.2(k) and 8.8.3.
3. When these tests have been completed and the burners turned off, turn off gas supply at main valve and disconnect the "U" gauge
4. Replace test nipple & test fitting using leak detection fluid