

Introducing the most significant changes to the Boat Safety Scheme examination - January 2013

(Privately owned and managed boats)



The various small changes to the Boat Safety Scheme (BSS) Examination Checking Procedures for privately owned and privately managed boats are in effect from 1 January 2013. BSS requirements for hire and other non-private boats are not affected by the current changes.

This is a summary of the main changes to the 2005 checks that appear in the BSS Essential Guide second edition. However, a complete version of the revised BSS Checks is published on www.boatsafetyscheme.org/boat-examination. The checks form the expected means of compliance with the navigation authorities' legal requirements otherwise known as the BSS General Requirements for privately owned and privately managed boats.

While most of the amendments were small editorial text revisions, the following information is an overview that points to all of the most significant revisions.

One new mandatory check has been introduced concerning portable fuel tanks in inboard engine spaces.

2.15.3 This is a new check for portable fuel tanks within inboard engine spaces connecting to fixed engines. Such arrangements are not allowed. *This disallowance includes portable tanks and other portable fuel system components. All such components and the connection between any portable fuel system and the permanently installed system must be located outside of the engine space and be compliant with BSS Part 5 checks see 5.1.2 below.*

Portable fuel tanks are still allowed to feed permanently installed engines, but only when in an area outside of the engine space, see 5.1.2 below.

Five new 'advice' checks concerning a.c. electrical systems have been introduced;

3.8.1 This check is a new 'advice' check concerning the type, location and condition of a.c. inlet connections (replacing deleted check 3.4.3).

3.8.2 This check is a new 'advice' check for the type of a.c. power source lead connections.

3.8.3 This check is a new 'advice' check of the condition of a.c. power source leads and connectors.

These three checks reduce the risks of people aboard the boat being electrocuted because of inlet connections, power source leads/connections of an inappropriate type, or in poor condition.

3.9.1 This check is a new 'advice' check addressing the fire/electrocution risk associated with using un-synchronised a.c. supplies simultaneously, and that male pins on shore-power inlet connections are not 'live' when an alternative power source is connected to the a.c. system. *In addition to reducing the risks of electrocution, this measure will also reduce the risk of overheating and fire caused by using un-synchronised a.c. supplies simultaneously.*

3.9.2 This check is a new 'advice' check introducing a check for the presence of a consumer unit on a.c. systems. *The presumption is that that a consumer unit will include fuse and RCD protection. Unprotected a.c. circuits present a risk of fire and electrocution to persons on or around the boat.*

Please note this further advice concerning examination preparation which the BSS is emphasising.

Boaters are asked to help themselves (and their examiner) stay safe by:

- making available for examination the shore-power, battery charging or other power source leads for examination of type and condition;
- providing information about the location of the a.c. consumer unit to the examiner in advance of the BSS examination;
- *where practicable and safe to do so*, boat owners should disconnect shore-power, battery charging, and other power sources in readiness for the BSS examination.

There is a new 'advice' check for solid fuel appliances;

8.10.5 This is a new 'advice' check for, unintended gaps or cracks in the outside surface or seams of a solid fuel stove; or, unintended gaps greater than 2mm in the loading door seal or door glass; or, loose, damaged or missing cover plates. *Compared with LPG, burning solid fuel can produce up to 100 x the amount of carbon monoxide and this deadly toxic gas can escape from gaps and cracks in the stove body that are not part of the design or manufacture.*

15 existing checks are amended to introduce an enhanced technical requirement;

- i. **2.1.1 Fuel Filling Point** - The check has been enhanced to address the potential for overflowing fuel entering the interior of the vessel through fuel filling points in poor condition. *The previous version was limited to seeing that the location of fuel filling points would not allow overflowing fuel to enter the vessel interior.*
- ii. **2.2.2 Petrol Tank Fuel Filler Connections** - This check has been enhanced to require the petrol tank filler connections to enter the tank at the top of the tank. *The 2013 version now addresses the potential for petrol fuel and vapour escape from filler connections on the side of petrol tanks.*
- iii. **2.3.3 Fuel Tank Vent Hose Connections** - This check has been enhanced to require vent hose connections to be accessible for inspection. – *The requirements now specify that the condition should not only be good, but that there should be access to check the condition of vent hose connections.*
- iv. **2.8.1 Fuel Tank Drain Stoppers** - This check has been enhanced to disallow the use of wooden bungs to terminate a fuel tank drain facility. *The new version now closes loopholes for ineffective types of fuel tank drain stops.*
- v. **2.10.1 Diesel Pump Fuel Lines** - This check has been enhanced to require high-pressure diesel fuel lines between injection pumps and injectors to be constructed of metallic pipe and not to be made of hose material.
- vi. **And 2.10.3 Diesel Pump Fuel Lines** - This check has been enhanced to ensure examiners check the condition of high-pressure diesel fuel pipes between injection pumps and injectors. *These two related checks now address a potential risk of failure of high-pressure diesel fuel lines.*
- vii. **2.14.4 Petrol Engine Flame Traps** - This check now includes a visual inspection to see that any gauze or filter elements are complete on petrol engine flame traps/air filters. *The revised check now identifies an obvious defect that could mean that the component fails to control the backfire risk effectively.*
- viii. **5.1.2 Portable Fuel Line Connection To An Inboard Engine** - This check has been enhanced to make clear that the point of connection of any portable fuel system hose to any permanently installed fuel system, must be located in the outboard well of cabin cruisers and end with proprietary quick-release, self-closing connector – see also 2.15.3 above. *The enhancement supports the concept that portable fuel system components are less robust than permanent fuel systems, offer little resistance the effects of fire and are readily removable in an emergency.*

- ix. **7.2.1 Gas Locker Condition** - This check has been changed from an assessment of gas-tightness of LPG cylinder lockers to a check for any path for leaked LPG to enter the interior of the vessel from the LPG cylinder locker. *The amended check is a more realistic description of the inspection process that BSS Examiners carry out to prevent the potential for escaped gas to gather in the vessel interior and cause fire or explosion.*

Please note this further advice concerning examination preparation which the BSS is emphasising.

Examiners will not be disconnecting LPG cylinders so boat owners must ensure the BSS Examiner has full access to be able to carry out careful checking of the LPG cylinder locker for condition, including potentially the removal of all loose portable items, base protection mats, removable false floors and the temporary removal of connected LPG cylinders.

Owners should discuss their LPG cylinder locker arrangements with their BSS Examiner in advance of the examination as this may require the owner's attendance or making prior arrangements involving service agents. LPG cylinder lockers not accessible enough to allow an assessment of condition will involve the BSS Examiner having to return to carry out the check with the obstruction removed.

- x. **7.3.5 Gas Locker Drain Connection** - This check has been enhanced to introduce a check for LPG cylinder locker drain pipe connections to be assessed the same as drain hose connections. *The amended check now closes the loophole regarding the condition of drain pipe connections, linked to the potential for leaked LPG entering the interior of the vessel from a damaged connection.*
- xi. **7.4.1 LPG Cylinder Movement Affecting LPG Hose** - This check has been enhanced to make it clear that any LPG cylinder movement whilst in position in the LPG cylinder locker must not cause any pulling tight of LPG hose. *The previous 7.4.1 check covered LPG cylinder movement potentially causing pulling of LPG pipework but did not address or pulling tight of LPG hose. The enhancement addresses the potential for leaked LPG entering the interior of the vessel from damaged LPG hose and hose connections in the LPG cylinder locker.*
- xii. **7.4.5 LPG Cylinder Locker Repairs** - This check has been enhanced to introduce requirements for LPG cylinder locker repairs, such that any repairs to cylinder lockers must meet the thickness requirements at check 7.4.5 and metal locker repairs must be made using a plate of similar metal and similar thickness, and these must be seam welded or brazed. Fibreglass locker repairs must consist of fibreglass fabric/matting and resin providing a similar thickness to the main body. *LPG cylinder lockers need to be maintained with high integrity materials to minimise the potential for leaking gas to enter the interior of the vessel via inadequate repairs.*
- xiii. **7.9.4 Hose Use On The Low-Pressure Side Of LPG Systems** - This check has been enhanced to clarify where the use of LPG hose on the low-pressure side is acceptable, namely, to connect a LPG cylinder regulator and/or appliances to the LPG supply pipework. *The enhancement addresses the potential for leaked LPG entering the interior of the vessel and supports current LPG installation practice. Note that 'all-hose' systems fully installed to ISO 10239 remain acceptable as they will comply with the checks at 7.9.6.*
- xiv. **8.4.1 'Bullseye' Decklights** – The enhancement to this check was previously announced in June 2010 whereby examiners check for signs of heat damage to the surfaces surrounding 'bullseye' decklights.
- xv. **And 8.4.2 'Bullseye' Decklights** – The enhancement to this check was previously announced in June 2010 whereby examiners check for signs of heat damage to all curtains, blinds and other textile materials near to 'bullseye' decklights. *These two checks address fire risks and are now fully incorporated.*

Some checks have been withdrawn and replaced; some have amended allowances;

Two checks, one about marine fuel filters and the other about a.c. shore connections have been removed.

2.12.2 Fuel Filter Types - That part of check 2.12. 2 requiring fuel filters to be of a 'suitable proprietary marine type' has been deleted. Fuel filters will continued to be checked for 'condition' and, if located in the engine space, 'fire resistance'.

3.4.3 Shore Lead Connections - The check for a.c. shore power and battery charging lead connections to be splash proof to BS EN 60309 has been deleted. The connections will still be checked for type, condition and location. See the introduced advice checks for inlet connections at **3.8.1** and power lead connections at **3.8.2** above.

The following checks have increased options or withdrawn requirements;

2.10.2 Fuel Hoses This check has two new compliance options, each one introducing an allowance for a non-fire resistant hose in specified circumstances, namely;

- the nylon type fuel hose material connecting small capacity diesel containers to the cold start facility on older diesel engines, and
- fuel hoses in permanently installed fuel systems to outboard engines may be to type B1 or B2 of ISO 8469 (or be suitable proprietary outboard engine fuel hose), provided the hose and its connections are located in the open air and where any fuel spillage would drain overboard (e.g. self-draining cockpits or outboard wells not enclosed by a canopy or other cover).

2.15.2 Exhaust Lagging - This check has been re-written, removing the mandatory requirement for exhaust lagging and placing sole reliance upon a check for signs of heat damage to structures and surrounding surfaces adjacent to exhausts. *Check 2.15.2 is now more consistent with other BSS examination checks where signs of heat damage are regarded as non-compliant. Owners are recommended to follow any specific recommendations from their engine manufacturer about lagging exhausts.*

3.5.1 Fuse/MCB Ratings - The part of check 3.5.1 requiring fuses/MCBs to be rated less than the current carrying capacity of the cable protected has been removed. *Improvements in cable design and construction make visual assessment of any given cable's current carrying capacity impossible. Therefore the reduction of fire risk relies on the retained part of the check for signs of cable heat damage or deterioration.*

Some editorial clarifications have been introduced;

7.7.3 Hose Use On The High-Pressure Side Of LPG Systems - Editorial changes to make clearer that on the high-pressure part of the gas installation, hoses should be pre-made hose assemblies of proprietary manufacture. Any signs or evidence of DIY manufacture will not pass. *The impact is that the change allows BSS Examiners to focus on signs of DIY manufacture in determining compliance, or not.*

8.9.1 Ventilation - Editorial changes to the ventilation check introduced the terms 'total effective area' (the ventilation provision as measured on the boat) and 'calculated fixed ventilation' (the ventilation requirement as determined by the number and nature of appliances) and the ventilation formula is amended to take account of solid fuel stoves.

8.9.2 Ventilation -Editorial changes have been made to clarify that 8.9.1 and 8.9.2 are sequential checks.

There are 63 further minor changes to the 2005 checks that reduce or slightly change the technical impact; full details and the rationale can be read on www.boatsafetyscheme.org/about-us/news-from-the-bss .