



BSS Hire Boat Requirements 2017

Training Course

(Pre-learning document 2 of 3)

The 16 new/amended BSS Hire Boat Requirements

Document overview

This document forms part of the BSS Hire Boat Requirements 2017 Training Course learning material. Examiners should read through and become familiar with the information contained within this document before completing the online Pre-learning assessment and attending their Training Event. Examiners should also print off this document to take to their Training Event.

This document sets out the 16 new/amended specific hire boat requirements (in the form of Examination Checking Procedures), and for each provides an overview of the risks addressed by the requirement and background information as to why the requirement will be introduced from 1 April 2017. The details of three new Examination Checking Procedure (ECP) glossary definitions are also provided.

CRITICAL INFORMATION

This document forms part of the BSS Hire Boat Requirements 2017 Training Course and the ECP are subject to slight change.

Examiners who successfully pass the course should use the ECPs provided after the course when undertaking BSS Examinations on hire boats from 1 April 2017.

Examiners must not use the 16 new/amended specific hire boat ECP prior to 1 April 2017.

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Three new ECP definitions (Glossary of terms)

From 1 April 2017 the following three new terms and their definitions will be added to the Glossary of terms within the ECP (The existing Glossary can be found at page 6 of the 2015 ECP).

normal laden waterline	The waterline observed at the time of an examination, providing no attempt has been made to 'lighten' the vessel and reduce the draft by removing any part of the vessel's structure, fittings or equipment (including LPG cylinders), or by emptying any tanks in whole or in part.
overnight accommodation	A cabin with berthing arrangements used for overnight stays.
unintended movement	Any movement beyond that likely to be intended by the manufacturer, and/or where movement is likely to affect the integrity, efficiency or operation of the item or device.

Check 10.1.1 – Are all designated external Crew Areas, companionway steps, and boarding planks provided with suitable slip-resistant surfaces?

1. Hazard, and risk control measures

Hazard type – Slips, trip, falls and particularly man-overboard, leading to death or injury.

The navigation authorities Hire Safety Review identified that slips, trips and fall incidents across the inland waterways represent the highest risk, and consequences can be severe. The Review identified that between 2007 and 2012 there were four recorded fatalities concerning falls from hire boats. Risk control measures aimed at the risk of drowning are divided into three approaches, a) prevention from falling in, b) mitigation of the effects of falling in, and, c) safe recovery. The provision of slip-resistant surfaces is a prevention measure.

Controlling the risk - The benefits provided by slip-resistant surfaces will vary depending upon specific circumstances, however the provision has the potential to radically reduce the likelihood of an incident occurring.

2. Background information

There is no existing requirement within the BSS 2002 Standards or the 2015 ECP, for decks or other external surfaces to have slip-resistant coatings or finishes.

Recreational Craft Directive harmonised standard ISO 15085 (Man-overboard prevention and recovery) requires working decks to be provided with slip-resistant surfaces.

The new BSS hire boat requirement being introduced from 1 April 2017 for external Crew Areas, companionway steps and boarding planks to be provided with suitable slip resistant surfaces has arisen from the navigation authorities' Hired Safety Review and is considered by the navigation authorities to be a reasonable and proportionate mitigation measure to a known risk.

3. New Examination Checking Procedure

10.1.1	Are all designated external Crew Areas, companionway steps, and boarding planks provided with suitable slip-resistant surfaces?	R
<p>Identify all designated external Crew Areas from the hire operator.</p> <p>Visually check all designated external Crew Areas for the presence of suitable slip-resistant surfaces.</p> <p>Visually check all boarding planks for the presence of a suitable slip-resistant surface on one side.</p> <p>Visually check all companionway steps for the presence of a suitable slip-resistant surface.</p> <p>Visually check for any gaps in the suitable slip-resistant surfaces.</p> <p>Measure any gaps in the suitable slip-resistant surfaces.</p>	<p>All designated external Crew Areas (as designated by the hire operator) must be provided with suitable slip-resistant surfaces.</p> <p>All boarding planks must be provided with a suitable slip-resistant surface on one side.</p> <p>All companionway steps must be provided with a suitable slip-resistant surface.</p> <p>Suitable slip-resistant surfaces need not be continuous, but any gaps must not be greater than:</p> <ul style="list-style-type: none"> • 75 mm for non-glazed areas; • 500 mm for glazed areas (e.g. deck hatch). <p>Any loose coverings in place to provide a suitable slip-resistant surface, such as rubber mats or gratings must not be capable of unintended movement. Such coverings must be held in place by fixings or by the layout of adjacent boat structures.</p>	
<p>Applicability – examiners must use their training material to recognise suitable slip-resistant surfaces. In cases where the hire operator claims an unrecognised surface is suitably slip-resistant examiners must contact the BSS office for advice.</p> <p>Applicability – possible causes of gaps in suitable slip-resistant surfaces may include, but are not limited to: there being no suitable slip-resistant surface present; wear, or other damage or deterioration to a previously suitable slip-resistant surface; or, contamination present on an otherwise suitable slip-resistant surface. When checking for gaps examiners should pay particular attention to high-tread areas such as cockpits and adjacent side decks, stern and bow decks, and areas around mooring points. In regard to possible gaps caused by wear or other damage or deterioration, or by contamination, examiners must refer to their training materials to determine whether a gap exists.</p> <p>Applicability – for the purpose of this requirement, ‘companionway steps’ include all steps used by hirers to enter the interior of the boat from an external Crew Area.</p> <p>Applicability - Suitable slip-resistant surfaces on ‘companionway steps’ need not be continuous, but there must be no gaps greater than 75 mm on the leading edge of each step. The leading edge extends from the front edge half-way towards the back edge of each step.</p> <p>Applicability – examiners must be able to visually assess the surfaces of all designated external Crew Areas, boarding planks and companionway steps. In the event not all surfaces can be viewed (e.g. where external surfaces are covered in snow) the check must be recorded as ‘not verified’ on your checklist, and it must be considered that the check has not been completed until such time as all surfaces have been viewed.</p> <p>Supplementary information – suitable slip-resistant surfaces are those intentionally prepared, machined, covered, moulded, etc. to provide increased adherence between the foot (or shoe) and the surface of the deck. Examples of suitable slip-resistant surfaces include: paint with slip-resistant characteristics; pattern moulded FRP; timber and composite boards and panels; over-coated embossed metal plate; unpainted timber; and loose slip-resistant coverings (e.g. rubber mats and gratings). See Appendix N for additional information.</p> <p>Guidance for owners – hire operators are recommended to present boats for examination with all external Crew Area surfaces visible (e.g. free of snow) and clean (e.g. free of any contamination).</p> <p>Guidance for owners – it is recommended that external Crew Areas include all areas on the exterior of the boat where hirers are permitted to walk and/or stand. It is the hire operator’s responsibility to determine the extent of external Crew Areas. There is no requirement for suitable slip-resistant surfaces to extend to the outer edges of individual external Crew Areas, boarding planks or companionway steps, but hire operators are recommended to determine through risk assessment where to terminate suitable slip-resistant surfaces, particularly in regard to step and deck edges.</p>		

Check 10.1.1 – Examiner notes

Check 10.1.2 - Are all designated external Crew Area decks provided with suitable handholds in good condition?

1. Hazard, and risk control measures

Hazard type – Slips, trips and falls and particularly man-overboard, leading to injury or death by drowning.

The Hirer Safety Review identified that slips, trips and fall incidents across the inland waterways represent the highest risk, and consequences can be severe. The Review identified that between 2007 and 2012 there were four recorded fatalities concerning falls from hire boats. Risk control measures aimed at the risk of drowning are divided into three approaches, a) prevention from falling in, b) mitigation of the effects of falling in, and, c) safe recovery. The provision of handholds is a prevention measure.

Controlling the risk - The benefits of handholds will vary depending upon specific circumstances, however the provision has the potential to radically reduce the likelihood of an incident occurring.

2. Background information

There is an existing requirement within Part 10 of the BSS 2002 Standards for external walkways on hire boats to be fitted with handholds.

Recreational Craft Directive harmonised standard ISO 15085 (Man-overboard prevention and recovery) requires working decks to be provided with suitable handholds.

Through the Hirer Safety Review the navigation authorities considered that the provision of handholds for external Crew Area decks from which hirers could fall overboard is a reasonable and proportionate hirer safety measure and that it should remain as a BSS requirement for hire boats.

The BSS requirement from 1 April 2017 is little changed from the 2002 Standard. The main differences being that from 1 April 2017:

- a) The requirement now takes the form of a Check, separated into Checking action, Requirement that must be met for a pass, and relevant Applicabilities (the approach adopted for the private boat requirements since 2005),
- b) The areas around a boat which must be provided with suitable handholds in good condition are now limited to those external Crew Areas (as designated by the hire operator) from where a slip, trip or other fall could lead to a hirer falling directly overboard,
- c) A small number of the requirement specifications have been altered to bring them in line with the relevant RCD harmonised standard ISO 15085 (Man-overboard prevention and recovery).

3. New Examination Checking Procedure

10.1.2	Are all designated external Crew Area decks provided with suitable handholds in good condition?	R
<p>Identify all designated external Crew Area decks from the hire operator.</p> <p>Check all designated external Crew Area decks for the presence of handholds.</p> <p>Check the condition of all Crew Area deck handholds by sight and by the application of light manual force.</p> <p>Check the extent of all Crew Area deck handholds and measure any gaps.</p>		<p>All designated external Crew Area decks must be provided with handholds.</p> <p>Crew Area deck handholds must be secured against unintended movement and be free of signs of damage and/or deterioration.</p> <p>Any gaps between handholds must not exceed 1.5m.</p>
<p>Applicability – for the purpose of this requirement ‘Crew Area decks’ include all external areas where the hire operator permits hirers to walk or stand during normal operation of the vessel and/or when moving from one part of the vessel to another, from where a slip, trip, or other fall could lead to a hirer falling directly overboard. Areas such as cabin roofs on which hirers do not stand or walk during normal operation of the vessel and/or when moving from one part of the vessel to another, but where they are permitted to sit or lie, are excluded from this requirement.</p> <p>Applicability – handholds may be located inboard of the deck (e.g. on the cabin structure) and/or outboard of the deck (e.g. guard-rails and guard-lines).</p> <p>Applicability – handholds can be any part of the boat that may be gripped by hand to reduce the risk of falling overboard, even if it is not its main function, providing it is secured against unintended movement and permanently available as a handhold. Examples of boat parts that may be considered as a handhold even though it’s not its main function include, but are not limited to; shrouds/stays, tops of windscreens, steering wheels, permanently installed seats, cleats and mooring rings.</p> <p>Guidance for owners – it is the hire operator’s responsibility to determine the extent of the Crew Area decks and to advise the examiner accordingly.</p> <p>Guidance for owners – hire operators are recommended to determine by risk assessment whether to allow hirers to sit or lie in areas not protected by handholds as set out in this requirement, and how best to instruct and guide hirers to ensure they can use such areas safely.</p>		

Check 10.1.2 – Examiner notes

Check 10.1.3 – Is the arc of the narrowboat tiller clearly identified?

1. Hazard, and risk control measures

Hazard type – Being knocked into the water from a narrowboat by the tiller, leading to a risk of injury or drowning.

Incident data from the past 10 years shows there have been three significant incidents whereby hirers have fallen off the stern of narrowboats and died, possibly as a consequence of being knocked off by the tiller.

Risk control measures aimed at the risk of drowning are divided into three approaches, a) prevention from falling in, b) mitigation of the effects of falling in, and, c) safe recovery. The identification of the tiller arm arc on narrowboats is a prevention measure.

Controlling the risk - The identification of tiller arm arcs on narrowboats will not prevent tiller arms swinging, but the requirement has the potential to reduce the likelihood of a severe incident occurring through:

- a) Hire operators using the marks or label/s as a visual indicator and/or prompt during hirer handover procedures to aid safety related discussion;
- b) The marks or labels remaining a visual indicator for hirers during their time onboard.

2. Background information

There is no existing requirement within the BSS 2002 Standards or the 2015 ECP, for tiller arm arcs to be clearly identified.

There is no equivalent requirement within the RCD or supporting harmonised standards.

The new BSS hire boat requirement being introduced from 1 April 2017 for the tiller arm arc on narrowboats to be clearly identified has arisen from the Hirer Safety Review and is considered by the navigation authorities to be a reasonable and proportionate mitigation measure to a known risk.

3. New Examination Checking Procedure

10.1.3	Is the arc of the narrowboat tiller clearly identified?	R
<p>Identify the presence of a narrowboat tiller.</p> <p>Establish the full extent of the movement of the tiller, with any extensions and/or handles fitted.</p> <p>Check the deck immediately below the tiller for markings which identify the full extent of the tiller's movement from one side of the boat to the other.</p> <p>Check for the presence of a label within open view of the helm position. Check the markings and lettering on the label and whether they are clearly visible from the helm position.</p>	<p>On all narrowboats fitted with a tiller:</p> <ul style="list-style-type: none"> The full arc described by the movement of the tiller must be clearly identified on the underlying deck. The segment described by the whole tiller, or the arc described by the forward end of the tiller, must be clearly marked and distinguishable from other parts of the deck forward of the tiller. The arc or segment markings must be permanent, but must not be a trip or slip hazard for hirers. <p>Or,</p> <ul style="list-style-type: none"> A warning label with all markings and lettering complete must be in open view and clearly visible from the helm position. The label must show pictorially the tiller and the 'at risk' area formed by the tiller arc. 	
<p>Applicability – this check applies to all narrowboats fitted with a tiller where uncontrolled movement of the tiller could lead to a hirer being unintentionally knocked overboard irrespective of the style of the stern (trad/semi-trad/cruiser, etc), or whether guard-rails or similar are fitted around the stern deck.</p> <p>Applicability – options for marking the arc described by the forward end of the tiller on the underlying deck include, but are not limited to: a curved line painted on the underlying deck or deck board; or, a curved line of permanent self-adhesive tape. Note that the paint or tape would not have to be suitably slip-resistant provided it was no wider than 75mm (see Check Item 10.1.1). Alternatively, different coloured paint or surface coverings could be used to denote the segment described by the whole tiller provided the surface was slip-resistant (see Check item 10.1.1).</p>		

Check 10.1.3 – Examiner notes

Check 10.2.1 – Are all lifebuoys in good condition, and is at least one suitable lifebuoy provided and is it positioned in an appropriate location?

1. Hazard, and risk control measures

Hazard type – Falling from a boat into the water, leading to injury or drowning.

The Hire Safety Review identified that slips, trips and fall incidents across the inland waterways represent the highest risk, and consequences can be severe. Risk control measures aimed at the risk of drowning are divided into three approaches, a) prevention from falling in, b) mitigation of the effects of falling in, and, c) safe recovery. This BSS requirement mitigates the effects of falling in and aids safe recovery.

Controlling the risk - Lifebuoys have no effect on the numbers of incidents of falling in but do have the potential to radically reduce the likelihood of a fatality.

2. Background information

There is an existing requirement within Part 10 of the BSS 2002 Standards for all hire boats to carry at least one lifebuoy in a readily accessible position.

There is no relevant coverage within the Recreational Craft Directive or associated harmonised ISO standards.

The existing BSS requirements derive from the UK Maritime Coastguard Agency (MCA) Merchant Shipping (Life-Saving Appliance) Regulations (MSN 1676) which are regarded as authoritative.

Through the Hirer Safety Review the navigation authorities considered that the provision of a lifebuoy is a reasonable and proportionate hirer safety measure and that it should remain as a BSS requirement for hire boats.

The BSS requirement from 1 April 2017 is little changed from the 2002 Standard. The main differences being that from 1 April 2017:

- a) The requirement takes the form of a Check, separated into Checking action, Requirement that must be met for a pass, and relevant Applicabilities (the approach adopted for the private boat requirements since 2005),
- b) Only one lifebuoy is required, but if additional lifebuoys are onboard they must all now be in good condition,
- c) One suitable lifebuoy must now be located where it can be quickly and effectively deployed overboard,
- d) For boats operating on MCA Category C and/or D waters a buoyant lifeline must now be attached to at least one suitable lifebuoy,
- e) On small day boats where it is impractical to stow a lifebuoy due to the space restrictions, alternative lifesaving appliance/s may now be accepted subject to the hire operator contacting the BSS Office with details of the appliance/s carried.

3. New Examination Checking Procedure

10.2.1	Are all lifebuoys in good condition, and is at least one suitable lifebuoy provided and is it positioned in an appropriate location?	R
<p>Check for the presence of one or more lifebuoys.</p> <p>Check the accessibility and location of the lifebuoy(s).</p> <p>Check the condition of the lifebuoy(s) that can be seen and reached.</p> <p>On boats operating on MCA Category C and/or D waters check for the presence of a buoyant lifeline attached to at least one lifebuoy. Check the diameter, condition and length of the lifeline where it can be seen and reached.</p>		<p>All lifebuoys must be free of signs of damage or deterioration.</p> <p>All boats must be provided with at least one suitable lifebuoy which must be:</p> <ul style="list-style-type: none"> • of suitable proprietary manufacture; • readily accessible; • located where it can be quickly and effectively deployed overboard. <p>On boats operating on MCA Category C and/or D waters a buoyant lifeline must be attached to at least one suitable lifebuoy. The lifeline must have a diameter of at least 8mm, and be no less than 18m in length. The lifeline must be free of signs of damage or deterioration.</p>
<p>Applicability – the suitable lifebuoy may be located on the exterior of the boat, or within a cabin provided it is located immediately adjacent to an exit point from where it can be deployed quickly and effectively. Where the only helm position is on the exterior of the boat the suitable lifebuoy must be located close to the helm.</p> <p>Applicability – examiners are not to remove lifebuoy lifelines where these are contained within bags (valises) or other such cases. The checking actions must be limited to those parts which can be seen with the line within its bag (valise) or other such case.</p> <p>Applicability – in circumstances where the hire operator claims that it is impractical to stow a lifebuoy due to the space restrictions on a small day boat, an alternative lifesaving appliance may be accepted subject to the hire operator contacting the BSS Office with details of the appliance carried.</p> <p>Applicability – examiners must establish from the hire operator whether the boat is used on Maritime and Coastguard Agency (MCA) Category C and/or D waters. Further guidance on MCA Categories may be found in Merchant Shipping Notice MSN 1837(M) – Categorisation of Waters.</p> <p>Guidance for owners – hire operators are recommended to ensure life-saving appliances conform to the requirements set out in Merchant Shipping Notice 1676 (M) – The Merchant Shipping (Life-Saving Appliance) Regulations 1999.</p> <p>Guidance for owners – where buoyant lifelines are attached to lifebuoys hire operators should consider using proprietary marine safety throw lines contained within a bag (valise) or other such case to keep the line tidy and ready for quick and effective deployment.</p>		

Check 10.2.1 – Examiner notes

Check 10.3.1 – Is the boat provided with a means of reversing operable from every helm position?

1. Hazard, and risk control measures

Hazard type – Poor boat control leading to collision damage or man-overboard or injury.

Incidents across the inland waterways caused by poor boat handling/collision are high in number and consequences can be severe even with the provision of reversing mechanisms being the industry standard practice. Hirers may routinely have no significant experience or skill in handling boats.

Controlling the risk - The influence a reversing mechanism has on any poor boat handling/collision incident will vary considerably from incident to incident, but the provision of a reversing mechanism has the potential to radically reduce the likelihood of a severe incident occurring.

2. Background information

There is an existing requirement within Part 2 of the BSS 2002 Standards for all hire boats to be fitted with a reverse gear selector on inboard engines and that it is connected to the gear changing mechanism.

Although the provision of reversing mechanisms has been industry standard practice over many decades, there is no equivalent requirement within the Recreational Craft Directive or supporting harmonised standards.

Through the Hirer Safety Review, the navigation authorities considered that the provision of a means of reversing is a reasonable and proportionate hirer safety measure and that it should remain as a BSS requirement for hire boats.

The BSS requirement from 1 April 2017 is little changed from the 2002 Standard. The main differences being that from 1 April 2017:

- a) The requirement now takes the form of a Check, separated into Checking action, Requirement that must be met for a pass, and relevant Applicabilities (the approach adopted for the private boat requirements since 2005),
- b) The requirement has been extended to include outboard motors,
- c) The requirement has been extended to require a means of reversing at all helm positions,
- d) The 2002 checking action and requirement addressing the connection of the gear selector to the gear changing mechanism (gearbox) has been removed.

3. New Examination Checking Procedure

10.3.1	Is the boat provided with a means of reversing operable from every helm position?	R
<p>Identify the presence of a power-driven propulsion system.</p> <p>Identify the means of reversing and the helm positions.</p> <p>Check for the presence of a reverse gear lever, or other method of operating the means of reversing, at each helm position.</p>		<p>Boats with power-driven propulsion systems must be provided with a means of reversing operable from every helm position.</p>
<p>Applicability – this check applies to all boat types fitted with power-driven propulsion systems, including, but not limited to: fixed internal combustion engines; fixed electric motors; outboard motors; steam engines; and Stirling engines. Boats manufactured prior to 16 June 1998 are exempt from this requirement.</p> <p>Applicability – means of reversing may include, but are not limited to: gearboxes operated by lever controls; swivelling drives, such as on small outboard motors; and Kitchen-type rudders.</p> <p>Applicability – examiners are not required to check the completeness, operation or effectiveness of the means of reversing.</p> <p>Applicability - in the event non-compliant arrangements are contested by the owner on the grounds that a previous exemption is no longer being applied, examiners should contact the BSS Office for guidance.</p>		

Check 10.3.1 – Examiner notes

Check 10.4.1 – Is the fire blanket fixed permanently in open view?

1. Hazard, and risk control measures

Hazard type – Fire, leading to injury or death.

For hirers not familiar with the layout of a boat’s accommodation, the fire blanket location may not be apparent and/or they may not be able to remove the blanket quickly enough from its container if the container is not affixed in open view, when called upon in an emergency.

Controlling the risk - The permanent fixing of fire blankets in open view will not prevent a fire occurring. However, the permanent fixing of fire blankets in open view (combined with appropriate safety briefings by hire operators during hirer handover procedures), has the potential to reduce the risk of an isolated cooking fire spreading and of hirers being trapped inside boats as a related incident develops.

2. Background information

There is no existing requirement within the BSS 2002 Standards, or the 2015 Examination Checking Procedures (ECP), for fire blankets to be fixed permanently in open view.

The RCD harmonised standard ISO 9094 (Fire protection) requires that fire blankets must be readily accessible and ready for immediate use.

The new BSS hire boat requirement being introduced from 1 April 2017 for fire blankets to be fixed permanently in open view has arisen from the Hirer Safety Review. The navigation authorities consider such a requirement to be a reasonable and proportionate hirer safety measure.

3. New Examination Checking Procedure

10.4.1	Is the fire blanket fixed permanently in open view?	R
Check the location of the fire blanket.	Fire blanket containers must be: <ul style="list-style-type: none">• Fixed permanently in a position which allows the blanket to be removed quickly and effectively from the container; and,• In open view from the main cooking appliance with all removable lids, doors, curtains etc in place.	
Applicability – this requirement only applies to boats where a fire blanket has been found to be necessary at BSS ECP Part 6 Fire Extinguishing and Escape, Check 6.2.1. Applicability – fire blanket containers will usually be fixed permanently by the container being hung on one or more screws or similar fastenings.		

Check 10.4.1 – Examiner notes

Check 10.4.2 – Are all means of escape, other than main doors, clearly marked with a suitable label in good condition?

1. Hazard, and risk control measures

Hazard type – Hirers being unable to escape from the interior of a boat in an emergency situation such as a fire or sinking, leading to injury or death.

A fire on a hire boat is a reasonably foreseeable event, notwithstanding that occurrences are very rare. In the event of a fire it is essential that hirers can escape away from the fire and not have to risk escaping by it. In some cases secondary means of escape may be obvious (e.g. main external cabin doors), but in other cases escape may be via deck hatches, or windows, which may not be obvious to hirers. In the event of fire or other emergency, any escape routes through hatches or dedicated windows may not always be obvious and so appropriate labelling is necessary to aid escape to a place of safety easily and quickly.

Controlling the risk - The provision of labels identifying secondary means of escape will not prevent fire or sinking incidents occurring. However, the installation of labels, combined with other risk control measures such as appropriate safety briefings during hirer handover, has the potential to reduce the risk of hirers being trapped inside boats during serious incidents.




2. Background information

There is no existing requirement within the BSS 2002 Standards or the 2015 ECP, for all means of escape, other than main doors, to be clearly marked. However, the following advice is included within the BSS 2002 Standards - *All leading fire authorities recommend that all exits, excluding the normal entry/exit route should be labelled "emergency exit" preferably with white lettering on a green background.*

There is no equivalent requirement within the RCD or current supporting harmonised standards.

The new BSS hire boat requirement being introduced from 1 April 2017 for all means of escape, other than main doors, to be clearly marked with a suitable label in good condition has arisen from the Hirer Safety Review. The navigation authorities consider such a requirement to be a reasonable and proportionate hirer safety measure.

3. New Examination Checking Procedure

10.4.2	Are all means of escape, other than main doors, clearly marked with a suitable label in good condition?	R
<p>Identify the two means of escape from each accommodation space as designated by the hire operator.</p> <p>Check each designated means of escape, other than main doors, for the presence of a label in open view indicating its use as a means of escape.</p> <p>Where tools are required to open a means of escape (such as hammer to break a window) check for the presence of a label in open view providing guidance on how to operate the means of 'breaking out'.</p> <p>Visually check the condition of all labels.</p>		<p>Designated means of escape, other than main doors, from all accommodation spaces must be clearly marked by a label of suitable proprietary manufacture positioned in open view with all removable lids, doors, curtains etc. in place.</p> <p>Where tools are required to open a means of escape (such as hammer to break a window) a label in open view (with all removable lids, doors, curtains etc in place) giving guidance on how to operate the means of 'breaking out' must be provided on or immediately adjacent to the opening.</p> <p>Labels must be in good condition, with all markings clear and complete.</p>
<p>Applicability – the use of embossed tape (e.g. Dymo) or other lettering that can become illegible through cleaning or normal use is not acceptable.</p> <p>Guidance for owners – hire operators are recommended to refer to ISO 9094 (Small craft – Fire protection), when determining escape routes and to ISO 7010 (Safety signs and symbols) when choosing labels. Means of escape labels may be available from local chandlers, internet based suppliers, builders merchants, hardware and DIY stores and are likely to have a green background and white (or off-white luminous) image (the 'emergency sign' colours from ISO 7010). Typical examples of labels based on ISO 7010 symbols are shown below.</p> <div style="display: flex; justify-content: space-around; align-items: center;">    </div>		

Check 10.4.2 – Examiner notes

Check 10.5.1 – Are accommodation space fixed ventilators protected by warning labels in open view?

1. Hazard, and risk control measures

Hazard type – Carbon monoxide poisoning causing injury or death.

It is recognised that CO poisoning is a significant risk equal to fire and explosion in terms of the general number of boater fatalities over the past 20 years (30 fatalities). Fatalities have been known to be associated with the blocking of cabin ventilation together with the use of the LPG cooker as a space heater or operating a solid fuel stove. The risk is significantly heightened if cabin ventilation is blocked. There is also a heightened risk on hire boats where hirers may not be familiar with the dangers presented by a build-up of CO.

Controlling the risk - Fixed ventilation warning labels have no direct bearing on whether or not dangerous levels of CO are released by appliances/engines, but instead they have the potential to reduce the likelihood of CO building up within accommodation spaces to levels at which it could become a significant risk.

Background information

There is an existing requirement within Part 10 of the BSS 2002 Standards for accommodation space fixed ventilators to be provided with prominently displayed warning labels.

Recreational Craft Directive harmonised standard ISO 10239 (LPG systems) requires appropriate warning instructions to be included with Owner's manuals.

Through the Hirer Safety Review the navigation authorities considered the provision of prominently displayed warning labels to protect fixed ventilation to be a reasonable and proportionate hirer safety measure and that it should remain as a BSS requirement for hire boats.

The BSS requirement from 1 April 2017 is little changed from the 2002 Standard. The main differences being that from 1 April 2017:

- a) The requirement now takes the form of a Check, separated into Checking action, Requirement that must be met for a pass, and relevant Applicabilities (the approach adopted for the private boat requirements since 2005),
- b) Labels must now be in good condition.

Check 10.6.1 – Is all glazing material of a suitable type?

1. Hazard, and risk control measures

Hazard type – Being cut by broken glass leading to personal injury or fatality.

Most hire boats incorporate significant areas of glazing, including windscreens, cabin windows, doors, hatches and portholes. Such glazing is susceptible to damage from incidents ranging from boat collisions, crew slips and trips, to malicious acts. Safety glass, such as tempered/toughened, reinforced and laminated provides a degree of additional strength, but most significantly reduces the risk of the glass shattering into numerous and dangerously sharp shards.

The use of ‘plastic’ glazing material, such as acrylics and polycarbonates, as an alternative to safety glass, can also provide improved performance over untreated glass and reduce the hazards associated with damaged glazing.

Controlling the risk - The use of safety glass, or similar materials, will have no bearing on whether or not a force is applied to the boat which could lead to the failure of a glazed panel (e.g. a collision, or a member of the crew impacting with a window) and as such represents a proactive risk control measure, having the potential to radically reduce the likelihood of injury or fatality as a consequence of an incident occurring.

2. Background information

There is an existing requirement within Part 10 of the BSS 2002 Standards for glass on all hire boats be safety glass or equivalent.

The Recreational Craft Directive does not address directly the personal health and safety risks of inappropriate glazing materials, although the specification within the harmonised standard ISO 12216 (Windows, port lights, hatches deadlights and doors) for boat builders to use glazing materials such as poly(methyl)methacrylate (PMMA), polycarbonate (PC), tempered glass, chemically reinforced glass, and laminated glass, will very likely offer an equivalence to the 2002 BSS requirements in regard to external glazing.

Through the Hirer Safety Review the navigation authorities considered that the provision of suitable glazing throughout a hire boat, rather than just external windows and hatches, etc, is a reasonable and proportionate hirer safety measure and that it should remain as a BSS requirement for hire boats.

The BSS requirement from 1 April 2017 is little changed from the 2002 Standard. The main differences being that from 1 April 2017:

- a) The requirement takes the form of a Check, separated into Checking action, Requirement that must be met for a pass, and relevant Applicabilities (the approach adopted for the private boat requirements since 2005),
- b) Recently developed safety glass standards have been added to the list within the Check.
- c) The previous exemption, whereby boats built before 15 June 1998 could be fitted with non-safety glass provided it was protected by the use of suitable stick-on film, has been replaced by an acceptance for all vessels that adhesive film offers equivalence to safety glass.

Check 10.7.1 – Is the weed hatch opening at least 150mm above the normal laden waterline, and are the cover securing and sealing arrangements in good condition?

1. Hazard, and risk control measures

Hazard type – Hire boat flooding or sinking, leading to injury or death.

Some GRP cruiser and most narrowboat hire boats have weed hatches fitted. Hirers routinely access weed hatches to free weed and other items from the main propeller and shaft. If weed hatch openings are too close to the waterline, and/or covers are not inherently water-tight, or not refitted correctly by hirers water will ingress and could ultimately flood in.

The precise number of hire boat incidents caused by water ingress through weed hatches is unknown. However weed hatch sinkings are not uncommon on hire and private craft. Historically, incidents have usually occurred due to hirer error (in not refitting the weed hatch cover correctly), but poor weed hatch design and condition can compound incidents.

Controlling the risk – The good design and condition of weed hatches will not prevent misuse of weed hatches by hirers, but the height of the opening may reduce the likelihood of a serious incident developing in the event a hirer does not refit the cover correctly. Also, where covers and seals are in good condition hirers are more likely to be able to refit covers in a watertight manner. The good design and condition of weed hatches have the potential to reduce the likelihood of a serious incident occurring.

2. Background information

There is an existing requirement within Part 10 of the BSS 2002 Standards for weed hatch covers to be at least 150mm above the normal laden waterline, and for there to be no damage or deterioration to fastenings.

Different editions of the Recreational Craft Directive harmonised standard, ISO 12217 (Stability and Buoyancy) have specified that there can be no opening appliances (e.g. weed hatches) in the hull less than a certain distance above the loaded waterline. The specified distance has varied with different editions of the standard from 100mm to 200mm. The specified distance is against the loaded waterline, which is difficult to replicate on a day to day basis.

Through the Hirer Safety Review the navigation authorities considered that the requirement for weed hatch covers to be at least 150mm above the normal laden waterline, and for there to be no damage or deterioration to fastenings is a reasonable and proportionate hirer safety measure and that it should remain as a BSS requirement for hire boats.

The BSS requirement from 1 April 2017 is little changed from the 2002 Standard. The main differences being that from 1 April 2017:

- a) The requirement now takes the form of a Check, separated into Checking action, Requirement that must be met for a pass, and relevant Applicabilities (the approach adopted for the private boat requirements since 2005).
- b) The new Check text makes it clear that the requirement is applicable to bow thruster weed hatches where access by hirers is permitted by the hire operator.

- c) The new Check text recognises that the BSS approach of measuring weed hatch opening heights against the normal laden waterline is different to the approach within harmonised standards, and as such guides Examiners to contact the BSS office in cases where a weed hatch opening height above the normal laden waterline is found not to comply with this requirement but the vessel is CE marked according to the RCD and the Declaration of Conformity references ISO 12217-1:2013 or ISO 12217-3:2013.

3. New Examination Checking Procedure

10.7.1	Is the weed hatch opening at least 150mm above the normal laden waterline, and are the cover securing and sealing arrangements in good condition?	R
<p>Identify all stern propeller weed hatches with openings within the interior of the vessel.</p> <p>If present, identify the opening's cover and how it is secured to the main hatch structure. Also identify the level of the opening were the cover to be released.</p> <p>Measure the height of the weed hatch opening above the normal laden waterline (if appropriate, calculate the height by measuring from the opening to an accessible datum point and from the datum point to the normal laden waterline).</p> <p>Check the condition of the means of securing the cover where it can be seen and reached with the cover and means of securing in place.</p> <p>Check the condition of the gasket between the cover and the main hatch structure where it can be seen or reached with the cover and means of securing in place.</p>	<p>Stern propeller weed hatch openings within the interior of the vessel must be at least 150mm above the normal laden waterline.</p> <p>Stern propeller weed hatch cover securing arrangements within the interior of the vessel must be complete and free of signs of damage or deterioration.</p> <p>Where located within the interior of the vessel, weed hatch gaskets between the cover and the main structure must be free of signs of damage or deterioration.</p>	
<p>Applicability – examiners are not to release weed hatch securing mechanisms and/or remove covers. Where an examiner cannot determine the height of the opening with the cover in place the hire operator may be invited to remove and refit the cover so the examiner can measure the height of the opening above the normal laden waterline with the cover removed. Under such circumstances the cover must be refitted by the hire operator.</p> <p>Applicability – in cases where a boat is ashore at the time of the examination examiners may determine the position of the normal laden waterline from any significant tidelines visible on the exterior of the vessel adjacent to the weed hatch.</p> <p>Applicability – weed hatch opening heights above the normal laden waterline that cannot be measured accurately must be recorded as non-compliant on the BSS Examination Report.</p> <p>Applicability - in addition to stern propeller weed hatches, this requirement is applicable to additional through-hull appliance hatch openings (such as bow thrusters and mud boxes) where these are within the interior of the vessel, and where hirers are permitted to remove the hatch cover/s. If such additional through-hull appliance hatch openings are present examiners must establish from the hire operator whether or not hirers are permitted to remove the cover/s. Examiners are recommended to retain field notes as a record of whether or not such additional through-hull appliances were examined.</p> <p>Applicability – where a weed hatch opening height above the normal laden waterline is found not to comply with this requirement but the vessel is CE marked according to the RCD and the Declaration of Conformity references ISO 12217-1:2013 or ISO 12217-3:2013 as the Harmonised Standard meeting the RCD Essential Requirement 3.2, 3.3, and 3.5, examiners should contact the BSS Office for guidance.</p>		

Check 10.7.1 – Examiner notes

Check 10.7.2 – Are all through-hull openings located below the normal laden waterline protected by closable valves, and are the valves readily accessible and free of signs of leaks?

1. Hazard, and risk control measures

Hazard type – Failure of the line (hose or pipe) connected internally to a through-hull skin fitting below the waterline, leading to water ingress and boat flooding or sinking, leading to injury or death.

The number of hire boats with through-hull fittings below the waterline is not known. Most narrowboat hire boats will not have through-hull fittings below the waterline, but many cruisers will (primarily for engine cooling).

The nature of the hazard is one of failure of a hose or pipe connected to a below-waterline through-hull skin fitting, where the ingress cannot be contained by any bilge pump or other means, leading to the boat flooding and sinking.

Controlling the risk - The presence of a readily accessible seacock will not prevent a water inlet/discharge line failing, and therefore the risk must primarily be controlled by appropriate maintenance. However, the presence of a readily accessible seacock in good condition provides a reasonable reactive risk control measure.

2. Background information

There is an existing requirement within Part 10 of the BSS 2002 Standards for all water intake/discharge fittings below the normal laden waterline to be fitted with readily accessible and leak free valves.

At Essential Requirement 3.4, the Recreational Craft Directive requires all through-hull fittings below the waterline designed to allow water passage into the hull or out of the hull to be fitted with a readily accessible shut-off. Harmonised standard, ISO 12217 (Stability and Buoyancy) requires all through-hull openings below the laden waterline to be fitted with seacocks (or similar), and ISO 9093 (Seacocks and through-hull fittings) sets out the requirements for seacocks, which includes seacocks being readily accessible.

Through the Hirer Safety Review the navigation authorities considered that the provision of readily accessible and leak-free valves on all below waterline through-hull openings for water intake/discharge lines to be a reasonable and proportionate hirer safety measure and that it should remain as a BSS requirement for hire boats.

The BSS requirement from 1 April 2017 is little changed from the 2002 Standard. The main differences being that from 1 April 2017:

- a) The requirement now takes the form of a Check, separated into Checking action, Requirement that must be met for a pass, and relevant Applicabilities (the approach adopted for the private boat requirements since 2005),

3. New Examination Checking Procedure

10.7.2	Are all through-hull openings located below the normal laden waterline protected by closable valves, and are the valves readily accessible and free of signs of leaks?	R
<p>Identify all through-hull openings below the normal laden waterline. Examples may include:</p> <ul style="list-style-type: none"> • Sink wastes; • Toilet inlets/discharge; • Raw water intakes for engines; • Cockpit drains. <p>Check that all such through-hull openings are fitted with a closable valve (seacock) connected directly to the hull fitting.</p> <p>Check the accessibility of all such closable valves, and check the condition of the valves and their connections by sight and touch.</p>		<p>All through-hull openings below the normal laden waterline must be fitted with a closable valve connected directly to the hull fitting.</p> <p>All closable valves (including their means of operation and their connections) on through-hull openings below the normal laden waterline must be readily accessible, and all such valves and their connections must be free of signs of leaks.</p>
<p>Applicability – valves must not be operated.</p> <p>Applicability – hull fittings forming an integral part of the hull (such as a welded pipe on a steel hull) extending from the hull to above the normal laden waterline are not covered by this requirement. Engine exhausts are also not covered by this requirement.</p>		

Check 10.7.2 – Examiner notes

Check 10.7.3 – Are all through-hull openings above the normal laden waterline either watertight, or is the associated downflooding point the correct height above the normal laden waterline and are any pipes, hoses, ducts or other vessel structures between the hull opening and the downflooding point permanently installed and in good condition?

1. Hazard, and risk control measures

Hazard type – Hire boat flooding or sinking, leading to injury or death.

If hull openings above the waterline, or associated downflooding points are too close to the waterline water could ingress and ultimately flood in to the interior of the vessel.

The number of hire boat incidents caused by water ingress through hull topside openings is unknown, but it is likely to be very small.

Controlling the risk – Downflooding points being a reasonable height above the waterline, and associated lines (hoses, pipes, etc) connecting hull openings to downflooding points inboard of the hull side being in good condition, have the potential to reduce the likelihood of a serious downflooding incident occurring.

2. Background information

There is an existing requirement within Part 10 of the BSS 2002 Standards for every opening in the hull topsides to be positioned so that the lowest point is not less than 250mm above the normal laden waterline, unless such openings are permanently and securely connected to pipes or ducts which are watertight up to that level.

Different editions of the Recreational Craft Directive harmonised standard ISO 12217 (Stability and Buoyancy) have included minimum downflooding heights. Various factors influence the minimum downflooding height, but as a rule the minimum equivalent height (above a fully laden waterline) is 400mm.

Through the Hirer Safety Review the navigation authorities considered the existing BSS requirement for a minimum downflooding height of 250mm to be a reasonable and proportionate hirer safety measure and that it should remain as a BSS requirement for hire boats.

The BSS requirement from 1 April 2017 is little changed from the 2002 Standard. The main differences being that from 1 April 2017:

- a) The requirement now takes the form of a Check, separated into Checking action, Requirement that must be met for a pass, and relevant Applicabilities (the approach adopted for the private boat requirements since 2005).

3. New Examination Checking Procedure

10.7.3	<p>Are all through-hull openings above the normal laden waterline <u>either</u> watertight, <u>or</u> is the associated downflooding point the correct height above the normal laden waterline and are any pipes, hoses, ducts or other vessel structures between the hull opening and the downflooding point permanently installed and in good condition?</p>	R
<p>Identify all through-hull openings and measure their height above the normal laden waterline. For hull openings greater than 250mm above the normal laden waterline no further checking is required.</p> <p>For any hull openings within 250mm of the normal laden waterline establish whether the opening is watertight to the interior of the vessel. For watertight hull openings no further checking is required.</p> <p>For any hull opening not watertight to the interior of the vessel, establish the downflooding point where it can be seen or reached. Measure the height of the downflooding point above the normal laden waterline.</p> <p>Where the downflooding point is inboard of the hull side check the condition of any skin fitting and any pipes, hoses, ducts or other associated vessel structure between the hull opening and the downflooding point where they can be seen or reached.</p> <p>For any such downflooding points connected to the hull opening by pipes, hoses, or ducting, check the condition of the connections by sight and by the application of light manual force where they can be seen or reached.</p> <p>Where any such downflooding point is a door sill, ventilator, or other such opening from a self-draining cockpit into the interior of the vessel, measure the height of the lowest point of the opening/s into the interior of the vessel above the level of the cockpit deck.</p>		<p>All through-hull openings above the normal laden waterline must <u>either</u> be watertight to the interior of the vessel <u>or</u> comply with the following requirements:</p> <p>The height from the normal laden waterline to the downflooding point (whether this is the hull opening or a point inboard) must be at least 250mm. However, downflooding points within self-draining cockpits may be less than 250mm above the normal laden waterline provided the height from the cockpit deck to the lowest point of the opening into the interior of the vessel is at least 150mm.</p> <p>Where the actual hull opening is less than 250mm above the normal laden waterline and the downflooding point is inboard of the hull any skin fittings, pipes, hoses, ducts and other associated vessel structures between the hull opening and the downflooding point must:</p> <ul style="list-style-type: none"> • be permanently installed; • be free of signs of damage or deterioration; • be secure; • not show signs of leaks.
<p>Applicability – downflooding occurs when river/canal water floods into the interior of a vessel. The downflooding point for a particular above waterline through-hull opening is the lowest point (on the opening or on internally connected pipework, hoses, ducts, or vessel structures, etc) at which downflooding could occur. Appendix O provides additional guidance.</p> <p>Applicability – a hull opening is watertight if river/canal water cannot flood into the interior of the vessel through the opening (either directly or via internally connected pipes, hoses, ducts, or vessel structure, etc). All internal combustion engine exhausts may be considered as being watertight provided the exhaust and its connections are in good condition. The presence of non-return valves, or where internal pipework (etc) is connected directly to a diaphragm pump, are also examples of watertight openings/systems. Generally, exhaust systems on diesel heaters will <u>not</u> be watertight.</p> <p>Applicability – for the purpose of this requirement, self-draining cockpits are those where the cockpit deck is watertight to the interior of the vessel and where the vessel structures around the cockpit deck are watertight to a minimum height of 150mm above the cockpit deck.</p>		

Check 10.7.3 – Examiner notes

Check 10.8.1 – If the vessel has overnight accommodation, is at least one suitable smoke alarm provided?

and,

Check 10.8.2 – Are all smoke alarms in good condition?

1. Hazard, and risk control measures

Hazard type – Fire – causing death or injury.

Although there have been no recorded hirer deaths caused by fire, in terms of general boating incident data fire is a significant risk equal to CO poisoning, with 30 fatalities over the past 20 years.

The nature of the risk is heightened at night when the crew may not be aware of the development of any fire and could suffer from collapse from smoke inhalation before being able to escape.

Controlling the risk - Smoke alarms have no bearing on whether or not a fire occurs within a hire boat and as such represent a reactive risk control measure, having the potential to radically reduce the likelihood of injury or fatality in the event of fire.

2. Background information

There is no existing requirement within the BSS 2002 Standards or the 2015 ECP, covering the provision of smoke alarms.

The BSS awareness leaflet 'Fire Safety on Boats' provides general guidance for all boaters on the avoidance of fire hazards associated with crew behaviour. The leaflet also makes a general recommendation that all boats have suitable audible smoke alarms fitted.

Recreational Craft Directive harmonised standard ISO 9094 (Fire protection) requires boats with more than one habitable space to be provided with a fire detection device.

The new BSS requirement that from 1 April 2017 all hire boats with overnight accommodation must be fitted with at least one smoke alarm, and that all smoke alarms must be in good condition, has arisen from the Hirer Safety Review and is considered by the navigation authorities to be a reasonable and proportionate mitigation measure to a known risk.

3. New Examination Checking Procedures

10.8.1	If the vessel has overnight accommodation, is at least one suitable smoke alarm provided?	R
<p>Identify the presence of overnight accommodation.</p> <p>If present, check for the presence and location of smoke alarm(s).</p> <p>Check the markings on each smoke alarm.</p> <p>Identify the test function button on each smoke alarm.</p>	<p>A smoke alarm must be fitted at high level within 10m of each cabin used for overnight accommodation.</p> <p>Smoke alarms must be marked as being certified by an accredited third-party body to EN 14604 or equivalent.</p> <p>Smoke alarms must be ceiling-mounted, or wall-mounted between 150mm – 300mm below the ceiling height.</p> <p>Smoke alarms must be provided with a test function button.</p>	
<p>Applicability – where not self-evident, examiners must establish from the hire operator whether the boat is let out for overnight stays.</p> <p>Applicability – the main accredited third-party certification bodies in the UK are BSI and LPCB. For the following makes of smoke alarm third-party accreditation can be assumed - Ei Electronics, Fire Hawk Alarms, Honeywell, Kidde and Sprue Aegis (i.e. First Alert, Fire Angel, BRK and Dicon). For other makes, removing the alarm from its base may be necessary to view labels and approval marking on the base. Permission for removal should be sought from the hire operator. Documentary evidence of accredited third-party accreditation is acceptable.</p> <p>Applicability – Smoke alarms may be wall mounted outside of the range specified in the requirement (... between 150mm – 300mm below the ceiling height) where any such alternative location is permitted by the alarm manufacturer and where appropriate supporting documentary evidence is available. In cases where alarms are mounted outside of the range specified in the requirement, examiners are recommended to make a note of the alarm make and model and the supporting documentation in their field notes.</p> <p>Guidance for owners – ‘optical’ alarms are the best choice for boats. They are more effective at detecting slow-burning fires and are less likely to alarm falsely.</p> <p>Guidance for owners – the actual number and location of smoke alarms should be determined through hire operator risk assessment and through adherence to alarm manufacturer instructions.</p>		

10.8.2	Are all smoke alarms in good condition?	R
<p>Where one or more smoke alarms have been found to be necessary at Check 10.8.1, visually check the condition of each smoke alarm and operate the test function button on each alarm.</p>	<p>Smoke alarms must be in good general condition, and must not show signs of any of the following indicators of poor condition:</p> <ul style="list-style-type: none"> • damage or deterioration to the body of the alarm or the fixing mechanism; • having passed any manufacturer’s express replacement date; • failing the test function check. 	
<p>Applicability – examiners are not required to open up alarms to check for internal damage or deterioration.</p>		

Checks 10.8.1/2 – Examiner notes

Check 10.8.3 – If the vessel has overnight accommodation and an installed solid fuel stove, are the correct number of suitable carbon monoxide alarms provided?

and,

Check 10.8.4 – Are all carbon monoxide alarms in good condition?

1. Hazard, and risk control measures

Hazard type – Carbon Monoxide (CO) poisoning causing injury or death.

Solid fuel stoves are a known CO risk as they can emit low levels of CO during normal operation, and significant quantities of CO when not burning efficiently. The Hirer Safety Review identified that there are likely to be over 300 hire boats with solid fuel stoves installed.

Although there have been no recorded hirer deaths caused by CO for the past 35 years, in terms of general boating incident data, CO is a significant risk equal to that of fire, with 30 fatalities over the past 20 years.

Hirers may not be familiar with the operation of solid fuel stoves, and the nature of the risk is further heightened at night as the symptoms of CO poisoning will not be apparent whilst hirers are asleep.

Controlling the risk - CO alarms have no bearing on whether or not dangerous levels of CO are present within a hire boat and as such represent a reactive risk control measure, having the potential to radically reduce the likelihood of injury or fatality in the event CO is present.

2. Background information

There is no existing requirement within the BSS 2002 Standards or the 2015 ECP, covering the provision of CO alarms.

The BSS awareness leaflet 'Carbon Monoxide Safety on Boats' provides guidance on the characteristics of CO, how to recognise the symptoms of CO poisoning, how to prevent CO build-up, and makes a general recommendation that all boats with fuel burning appliances on board have suitable audible CO alarms fitted.

There is no equivalent requirement within the Recreational Craft Directive or supporting harmonised standards.

The new BSS requirement that from 1 April 2017 all hire boats with overnight accommodation and solid fuel stoves must be fitted with at least one CO alarm, and that all CO alarms must be in good condition, has arisen from the Hirer Safety Review and is considered by the navigation authorities to be a reasonable and proportionate mitigation measure to a known risk.

3. New Examination Checking Procedures

10.8.3	If the vessel has overnight accommodation and an installed solid fuel stove, are the correct number of suitable carbon monoxide alarms provided?	R
<p>Identify the presence of overnight accommodation</p> <p>Identify the presence of a solid fuel stove appliance.</p> <p>If both are present, check for the presence and location of carbon monoxide alarm(s).</p> <p>Check the markings on each carbon monoxide alarm.</p> <p>Identify the test function button on each carbon monoxide alarm.</p>	<p>All boats having overnight accommodation and an installed solid fuel stove appliance must be provided with a carbon monoxide alarm within the same space as the solid fuel stove.</p> <p>Carbon monoxide alarms must be marked as being certified by an accredited third-party body to EN 50291 or equivalent.</p> <p>Carbon monoxide alarms in the same space as the solid fuel stove must be wall-mounted at high level, but must be at least 150mm below the ceiling height.</p> <p>Within each additional overnight accommodation space separated from the space containing the solid fuel stove by a door(s), and being greater than 10m distance from the carbon monoxide alarm, an additional carbon monoxide alarm must be provided, located in the “breathing zone”, i.e. near to a bed head.</p> <p>Carbon monoxide alarms must be provided with a test function button.</p>	
<p>Applicability – boats with a single open-plan cabin require only one carbon monoxide alarm.</p> <p>Applicability – the main accredited third-party certification bodies in the UK are BSI and LPCB. For the following makes of carbon monoxide alarm third-party accreditation can be assumed - Ei Electronics, Fire Hawk Alarms, Honeywell, Kidde and Sprue Aegis (i.e. First Alert, Fire Angel, BRK and Dicon). For other makes, removing the alarm from its base may be necessary to view labels and approval marking on the base. Permission for removal should be sought from the hire operator. Documentary evidence of accredited third-party accreditation is acceptable.</p> <p>Applicability – CO alarms may be mounted outside of the range specified in the requirement (<i>... at high level, but must be at least 150mm below the ceiling height</i>) where any such alternative location is permitted by the alarm manufacturer and where appropriate supporting documentary evidence is available. In cases where alarms are mounted outside of the range specified in the requirement, examiners are recommended to make a note of the alarm make and model and the supporting documentation in their field notes.</p> <p>Guidance for owners – carbon monoxide alarms marked to the ‘EN 50291-2’ are the best choice for boats. They have been tested to meet the more onerous conditions found in recreational vehicles, including boats.</p>		

10.8.4	Are all carbon monoxide alarms in good condition?	R
<p>Where one or more carbon monoxide alarms have been found to be necessary at Check 10.8.3, visually check the condition of each carbon monoxide alarm and operate the test function button on each alarm.</p>	<p>Carbon monoxide alarms must be in good general condition, and must not show signs of any of the following indicators of poor condition:</p> <ul style="list-style-type: none"> • damage or deterioration to the body of the alarm or the fixing mechanism; • having passed any manufacturer’s express replacement date; • failing the test function test. 	
<p>Applicability – examiners are not required to open up alarms to check for internal damage or deterioration.</p>		

Checks 10.8.3/4 – Examiner notes