



**Partial Impact
Assessment-
Concerning the proposed
changes to Boat Safety
Scheme requirements for
hire boats
September 2015**

1. The purpose and intended effect

1.1: The purpose

1.1.1 The proposed changes to Boat Safety Scheme (BSS) hire boat requirements are intended to help ensure that the risks to hirers continue to be reduced to as low as reasonably practical.

1.2: The intended effect

1.2.1 Responsibility for hirer safety is shared between the hire boat operators, the hirers themselves and the licensing/navigation authorities. The proposals concern those aspects of the fitness for purpose of hire boats that are covered within the scope of the BSS.

1.2.2 BSS hire boat requirements are in place to help the navigation authorities' with their duties and responsibilities to persons affected by their operations, namely the hirers of hire boats, visitors to the waterways and waterways staff.

1.2.3 The objective is to reduce to as low as reasonably practical the risk of incidents and accidents on hire boats related to fire, spread of fire or explosion, carbon monoxide poisoning, electrocution and drowning.

1.2.4 The adoption of the 2013 BSS private boat requirements as the basis of BSS requirements for hire boats provide for a modern, risk-based approach whereby greater emphasis on conditions checks and the allowance of extra compliance options replace the more detailed technical standards in the 2002 BSS hire boat standards.

1.2.5 Adopting the 2013 BSS requirements better aligns with the current approach to balance the responsibilities of the navigation authorities with the responsibilities of the hire operators and hirers themselves. This is achieved through the application of the Water Safety Principles published by the National Water Safety Forum (see main consultation document).

1.3: The proposals:

1.3.1 It is proposed to achieve the objectives by:

- a) introducing six new BSS hire boat requirements.
- b) adopting the BSS private boats requirements as the basis of BSS requirements for hire boats. This proposal includes:
 - the formal adoption for hire boats of the 23 additional or more comprehensive BSS private boat requirements introduced in recent years.
 - the amendment of a further five of the existing BSS hire boat requirements.

1.3.2 In summary the major impacts covered by this impact assessment concern the modernisation of BSS hire boat requirements and the proposals to introduce 34 additional or more comprehensive BSS hire boat requirements. The proposals are considered essential to support the purpose.*

**Note: For organisations and individuals operating hire craft registered with the Environment Agency it should be noted that if the Agency is considering a change to its policies, processes or practices that have a significant financial impact on business, the Government's Accountability for Regulatory Impact scheme requires the Agency to undertake a formal Business Engagement Assessment and consult the affected business sectors. This proposed change to the BSS requirements applies to hire boats. For the reason set out in section 5 below, we do not consider the overall financial impact of the changes that we propose will be significant.*

We would like your views on whether or not you think the overall financial impact of the BSS requirements for hire boats is significant. Your input will help the Environment Agency to decide on the need to proceed with a formal Business Engagement Assessment for these proposals.

1.4: Issues of equity and fairness

1.4.1 The proposed measures are intended to benefit the general public by contributing to a safer inland waterway boating environment. The proposed measures will impact equally on all types of powered hired boats used on inland waterways for overnight accommodation, and hired day boats. Hire boats are already subject to the existing requirements of the Boat Safety Scheme. Hire boats are further defined in the main consultation document.

1.4.2 Adoption of the proposals will help navigation authorities achieve an appropriate balance between regulation and the shared responsibility with hire operators and hirers, allowing hire operators to operate their boats without undue restriction.

1.5: Who will be affected and how

1.5.1 The impact will fall on operators of hire boats used on the inland waterways controlled by navigation authorities that have adopted the Boat Safety Scheme.

1.5.2 It does not affect the owners or operators of other classes of vessel such as those privately owned or managed. However it is intended that the proposed new BSS hire boat requirements can represent best practice guidance to the owners of such vessels.

1.5.3 Dependent upon how the Scheme is implemented by an individual navigation authority's legislation, the requirements represent the law, or conditions under which a licence/registration or other permission to use a vessel is issued or withdrawn.

1.5.4 No overall additional BSS Examination cost is anticipated as the time taken by BSS Examiners to examine boats is not anticipated to increase.

1.5.6 Other groups affected include:

- the navigation authorities who have adopted the Boat Safety Scheme concerning their enforcement role;
- all other member navigation authorities of the Association of Inland Navigation Authorities (AINA) regarding the stated policy of AINA for its members to adopt the Scheme as soon as is practicable;
- BSS Examiners for training in the proposed changes;
- In-house fitters or those marine service agents contracted in by hire operators;
- insurance providers concerned with hired inland waterway vessels.

1.6: The background

1.6.1 During 2013 the navigation authorities conducted a Hirer Safety Review. During this review the risks to hirers were evaluated to see that all are identified and a view was taken on whether or not the existing risk controls were adequate or whether more should be done.

1.6.2 The approach used followed National Water Safety Forum visitor safety principles, as incorporated into the BSS Risk Management Process, included all aspects of hirer safety.

1.6.3 The Review was not a fundamental review and was able to take account of a number of significant initiatives in recent years, including the Boaters Information Project, the BSS Standards Appraisal Process, the currently published Hire Boat Code and the development of the British Marine's Hire Boat Handover guide and the associated audit facility.

1.6.4 The initial part of the risk-review included the following review of BSS hire boat requirements through the BSS Technical Committee:

- the existing published BSS private boat requirements were assessed for their appropriateness and relevance for hire boats.
- the current BSS checks published in the 2002 BSS Standards that are in excess of the 2013 BSS private boat requirements were assessed for their continued relevance.
- the coverage of hirer safety published in the Hire Boat Code that were over and above the current BSS hire boat requirements were risk-reviewed.

1.6.5 The current BSS hire boat requirements are based on 2002 standards and the navigation authorities had indicated their decision that these needed to be modernised to reflect the findings of previous private boat requirement risk reviews and more particularly the agreed outcomes from the Hirer Safety Review.

1.6.6 As part of the 2013 Hirer Safety Review, and in order to make sure that the likely risks were understood, hire boat numbers and incidents over the previous five years to 2012, were looked at as well as the circumstances behind all recent boating fatalities and serious accidents.

1.6.7 An expert group (including hire operators, navigation authorities, trade representatives and boat hirers) agreed what the biggest risks to hirers were and considered whether anything further should be done to reduce them.

1.6.8 The group made some recommendations for change which were subsequently put to hire operators at a series of regional open forums in the autumn of 2013. The results of this work can be read in the report entitled 'Navigation Authority Hirer Safety Review'.

1.6.9 The review found that all the main risks are well understood and existing controls, in general, appear to be proportionate and effective in managing them down to acceptable levels.

The key risk controls identified are:

- providing and maintaining boats and equipment to appropriate safety standards,
- providing safety information and advice that is effective in informing hirers of the risks and the risk controls in place and influencing their behaviour.

The review found that:

- BSS certification is the key way to ensure that the boats are safe for hirers and that further risk review would add detail to the recommendations; and,
- key risk controls that are not part of the BSS scheme should be brought together in a revised Hire Boat Code.
- the Boaters Handbook could be revised to include improved safety information.

1.6.10 It was agreed that there should be a separation of ownership of the first two findings with:

- a) the BSS Management Committee receiving recommendations from the BSS Advisory and Technical Committees concerning proposed BSS hire boat requirement changes; and,
- b) the Association of Inland Navigation Authorities (AINA) reviewing and co-ordinating the response of the navigation authorities concerning any proposed changed navigation authority hire boat licensing conditions, including revising the existing Hire Boat Code.

1.6.11 This consultation is about proposed changes to the BSS hire boat requirements alone. It follows an extensive and detailed consideration involving close collaboration with the stakeholder groups represented on the BSS Technical, Advisory and Management committees, together with the navigation authorities, marine trade associations, a working group of hire operators, hirers and others with an interest in hirer safety, experts in specific subjects and outside regulatory bodies.

1.6.12 The intention of the consultation is to ensure the proposals are promoted and subject to comment from the full range of hire operators affected; and any other interested parties. Views on any possible unintended consequences of a proposal or on the implementation timescales are necessary.

1.6.13 Separately, in due course there will be another consultation on the proposed revised Hire Boat Code undertaken by its owners, Association of Inland Navigation Authorities (AINA), British Marine (BM) and the Maritime and Coastguard Agency (MCA).

Note that it is open for individual navigation authorities to determine whether the proposed revised AINA/BM/MCA Hire Boat Code should be introduced as a licensing condition or to vary the actual content of any changes to their hire operator licensing conditions and the precise timing of the implementation of any changes.

2: Options

Two options are identified as to how the navigation authorities should proceed:

Option 1 – Do nothing;

Option 2 – Full or partial adoption of the proposals for change including adopting the BSS private boat requirements as the basis of BSS requirements for hire boats and the introduction of six new BSS hire boat requirements.

3: Risk assessment, option by option

3.1: Option 1 - Do nothing

3.1.1 The six new BSS hire boat requirements and adopting the BSS private boat requirements as the basis of BSS requirements for hire boats would not be introduced.

These items have been assessed as necessary risk controls and non-introduction would be contrary to the findings of the risk review.

It could result in hirers being placed at enhanced risk. Stakeholder organisations including those hire operators who accepted the case for introduction of the items or who already have in place the risk control measures, would feel alienated.

3.1.2 Concerning the proposal to adopt the BSS private boat requirements as the basis of BSS requirements for hire boats, the following additional impacts of the 'do nothing' option are identified and concern compromising the objective to 'modernise' BSS hire boat requirements to ensure the sustainability and effectiveness of the Scheme.

- modernisation of the BSS hire boat requirements would not be achieved and so the planned greater emphasis on conditions checks and the allowance of extra compliance options would not occur. The aim to help ensure that BSS requirements are harmonised in a transparent and complementary way with other regulations, such as the Recreational Craft Directive would also not occur.
- the need to demonstrate to the Government and primary regulator, the Maritime and Coastguard Agency, and other regulators such as the Health and Safety Executive; that risks to hirers on inland waterways are being adequately addressed and controlled by the navigation authorities would not be achieved. This could lead to more onerous or duplicated regulation if the primary regulator acts independently in the future to introduce risk controls.

- failure to modernise may lead to increased costs for hire operators from a Scheme less able to adapt to novel solutions and technology advances.

3.2: Option 2 - Full or partial adoption of the proposals for change

3.2.1 Necessary and proportionate risk controls would be introduced to help ensure that the risks to hirers continue to be reduced to as low as reasonably practical.

3.3: Potential risks associated with Option 2 – Cost burden

3.3.1 There would be a cost burden for hire operators concerning the proposed new BSS hire boat requirements, see Sections 5.5, 5.5 and 5.6.

3.4: Potential risks associated with Option 2 – Greater reliance upon the shared responsibility with hire operators and boat builders

3.4.1 The proposals introduce a shift away from BSS hire boat standards based upon published construction standards and towards greater emphasis on condition checks and the allowance of extra compliance options. This shift has two consequences and both may be perceived to introduce a small but acceptable level of risk.

- Hire operators and boat builders will have a slightly heightened responsibility for selection, installation, maintenance of engines and appliances. This concerns the adoption of the 2002 BSS standards 'exemption' level. At present the existing 2002 BSS standards encourage replacement and additional LPG appliances to be room-sealed appliances. Adopting the private boat requirements will mean the assessment is intended to ensure protection against fire risks of all appliances/flues and will not specify appliance types or installation requirements. It follows that the BSS requirements will no longer be used to encourage best practice and this aspect will be with the hire operators and boat builders to be responsible for. It is accepted that LPG appliances on hire boats are reducing in favour of other appliance fuel types.
- An associated point is that there is a possibility that a BSS examination of a new hire boat or one having been operated for a short time, will not show the signs of BSS non-compliance that previously would have been caught by the application of a standards-based requirement. An example of this concerns the vicinity of combustible materials to cooking appliances. At present such materials are required to be a minimum of 400mm away horizontally and 200mm away vertically. Introducing the private boat requirement will introduce a check for signs of heat damage without measurements.
- A significant proportion of reported fire and carbon monoxide poisoning incidents on private boats are associated with the use of solid fuel stoves.

There is a concern that the boat building industry is slow to adopt the solid fuel stove code of practice. This BSI code of practice introduced in 2010¹ has not seen universal take up, when last reviewed around a third of narrowboat builders are installing solid fuel stoves to the code. The BSS requirements are for visual signs of heat damage, flue gas escape and for any unintended gaps or cracks in the stove body. Hypothetically, with a standards-based approach the navigation authorities could have introduced a BSS requirement that all solid fuel appliances on hire boats must be installed to the code of practice. The risk is that in the event of a carbon monoxide poisoning incident on a hire boat involving a solid fuel stove not installed to the code of practice, the BSS approach could be criticised as inadequate in the circumstances. The proposed solution is for BSS to lobby for the code to be accepted as a harmonised standard supporting boat builder declarations to the Recreational Craft Directive (RCD).

3.4.2 It is considered that the benefits identified below far outweigh the risks identified above and that the associated level of safety has been found to acceptable in the private boat environment and in support of navigation authority duties for ten years. Over time it is anticipated that safety improvements will continue to improve in line with developments in industry practice.

4: Benefits

4.1: Option 1, Do nothing

No perceived benefits have been identified.

4.2: Option 2, Full or partial adoption of the proposals for change

4.2.1 Full adoption of the proposals would see necessary and proportionate risk controls introduced to help ensure that the risks to hirers continue to be reduced to as low as reasonably practical.

4.2.2 Risk cannot be eliminated altogether but the adoption of the concept of detection (smoke and [carbon monoxide \(CO\)](#) alarms) will create a level of safety equivalent to that of other comparable hired accommodation environments, such as rented holiday homes. Incident records show that in the majority cases of fatal fire and CO incidents on boats, survivability would have been more likely if suitable working smoke and CO alarms had been installed on those boats. The Chief Inspectors of the [Marine Accident Investigation Branch \(MAIB\)](#) have made such recommendations repeatedly.

4.2.3 Falling from a hire boat into the water represents the biggest single risk to hirers. Such incidents on boats, included hired craft, have led to deaths and serious injuries. The

¹ BS 8511:2010 - Code of practice for the installation of solid fuel heating and cooking appliances in small craft

introduction of a requirement for slip-resistant surfaces in good condition, a warning about the swing of a narrowboat tiller arm and additional lifebuoy requirements will reduce the potential and or severity for such preventable incidents.

4.2.4 Adopting the BSS private boat requirements as the basis of BSS requirements for hire boats, brings with it the benefits of modernisation enjoyed by private boat owners, namely:

- ensuring a minimum impact on those regulated;
- ensuring flexibility in allowing for innovative solutions and more compliance options accepted as addressing the risk;
- ensuring a correct balance between the shared ownership of hirer safety between navigation authorities, hire operators and hirers;
- ensuring alignment with the changes to national and EU regulation brought in by UK legislators avoiding duplication and unnecessary regulation;
- simple and clear requirements for waterway users bringing greater levels of understanding and acceptance from those regulated;
- more compliance routes and a new fair compliance appeals process taking account of novel solutions and technological advances helps to provide an improved level of acceptance from those regulated.

5: Costs

5.1: Business sectors affected

5.1.1 Hire operators

5.1.2 BSS Examiners

5.1.3 Implications for the navigation authorities are addressed at under enforcement at section 8 of this assessment below.

5.2: Costs Option 1, 'do nothing'

5.2.1 No additional costs.

5.3: Costs Option 2, Costs to hire operators of introducing the proposals generally

5.3.1 The proposed BSS requirements changes will have a cost neutral effect in terms the time taken to complete a BSS examination. The overall number of checks is less and the familiarity of examiners with private boat examination process will lead to examination efficiencies.

5.3.2 The proposed introduction of the six new BSS requirements will not affect all hire boats as many will already comply. It is anticipated that the biggest impact will be the provision of smoke alarms on boats with overnight accommodation. See 5.4 below.

5.3.3 The proposed formal adoption for hire boats of the 23 additional or more comprehensive BSS private boat requirements introduced in recent years will have a minimal cost impact as the majority of hire boats will already comply. See 5.5 below.

5.3.4 The proposed amendment of a further five of the existing BSS hire boat requirements will have a minimal cost impact as the majority of hire boats will comply. See 5.6 below.

5.3.5 The costs indicated below are estimated and include equipment and labour costs, and VAT where appropriate. For the purposes of this exercise labour costs are estimated at £35 per hour + VAT = £42 per hour.

5.3.6 Further information about the proposed changes is contained within the main consultation document and, concerning specific proposals, within the BSS Committee Risk Review and Assessment Papers which can be made available upon request.

5.3.7 In appraising the 34 proposals for additional or more comprehensive BSS hire boat requirements were identified as essential. The cost burden associated with the items is seen as proportionate to the risk benefits gained.

5.4: Costs Option 2, Costs of introducing six new BSS hire boat requirements

5.4.1 The proposal for suitable smoke alarm(s) on hire boats having overnight accommodation.

According to the proposed new check:

- A smoke alarm must be fitted at high level within 10m of each cabin used for overnight accommodation.
- Smoke alarms must be marked as being certified by an accredited third party body to EN 14604 or equivalent.
- Alarms must be provided with a test function button.

The actual type, number and location of alarms will be a matter for the hire operator as determined through risk assessment and through adherence to alarm manufacturer placement instructions.

During the development of this proposal concerns were raised that smoke alarms suitable for boat installation were not available. Views were sought from the Fire Protection Association (FPA), the Scheme's competent advisers concerning fire protection matters and the Fire Industries Association (FIA) representing the UK manufacturers/suppliers of smoke alarms. A list of smoke alarms specifically identified by the makers as suitable for boats, as provided by the Fire Industries Association, is available [here](#).

In the absence of specific alarm-maker placement instructions for boats the FPA and FIA endorse BSS placement guidance, available [here](#).

In addition concerns were raised that alarms will falsely activate leading to call-outs of hire operator staff to boats, leading to increased costs. In response to this a trial involving 50

smoke alarms was undertaken on a major hire operator's fleet without any operational issues.

Initial purchase costs estimated as £11.50 - £45 (Inc. VAT) per unit plus initial installation cost of in the region of £8.50 - £21 per boat. Some units have a five year life; but most now have a ten year life.

Note that depending upon the alarm specification, the replacement cycle will likely be between five and ten years.

Ongoing operator maintenance including pushing the test-button at handover. Also advisory removal/storage during winter months, to help extend battery life.

There is also a minor additional handover instruction item for hire operators to explain what the alarm is and what to do if it goes off.

It is estimated that around 20% of hire boats will already have smoke alarms fitted. The estimated number of hire boats affected is around 1900.

In summary:

Initial costs per boat, per smoke alarm		Estimated industry cost - 1900 boats
Purchase	£11.50 - £45	£21850 - £85500
Installation	£8.50 - £21	£16150 - £39900
Total	£20 - £66	£38000 - £125400

5.4.2 The proposal for suitable carbon monoxide alarm(s) on hire boats having solid fuel stove installations

According to the proposed new check:

- All hire 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.
- Carbon monoxide alarms must be marked as being certified by an accredited third party body to EN 50291 or equivalent.
- Carbon monoxide alarms in the same space as the solid fuel stove must be wall-mounted at high level at least 150mm below the ceiling height.
- For each overnight accommodation space separated from the space containing the alarm 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 the bed head.
- Alarms must be provided with a test function button.

The actual type, number and location of alarms will be a matter for the hire operator as determined through risk assessment and through adherence to alarm manufacturer placement instructions.

During the development of this proposal concerns were raised that carbon monoxide (CO) alarms suitable for boat installation were not available and as such the proposal should not progress. Views were sought from the Council of Gas Detection & Environmental Monitoring (CoGDEM) representing the UK manufacturers and suppliers of CO alarms. A list of CO alarms specifically identified by the makers as suitable for boats, as provided by CoGDEM, is available [here](#).

In the absence of specific alarm-maker placement instructions for boats the CoGDEM endorsed BSS placement guidance, available [here](#).

In addition concerns were raised that alarms will falsely activate leading to call-outs of hire operator staff to boats, leading to increased costs. In response to this a trial involving 50 CO alarms was undertaken on a major hire operator's fleet without any operational issues.

This proposal affects an estimated 300 weekly hire boats. It is estimated that around 5% will already have carbon monoxide alarms fitted.

Initial purchase costs estimated as £15 - £50 (Inc. VAT) per unit plus initial installation cost of in the region of £8.50 - £21 per boat. Most CO alarms have a ten year life, some have a seven year life, a very few have a five year life.

Note that depending upon the alarm specification, the replacement cycle will likely be between seven and ten years.

Ongoing operator maintenance including pushing the test-button at handover. Also advisory removal/storage during winter months, to help extend battery life.

There is also a minor additional handover instruction item for hire operators to explain what the alarm is and what to do if it goes off.

In summary:

Initial costs per boat, per CO alarm		Estimated industry cost - 285 boats
Purchase	£15 - £50	£4275 - £14250
Installation	£8.50 - £21	£2422.50 - £5985
Total	£23.50 - £71	£6697.50 - £20235

5.4.3 The proposal for a visual indication concerning the risk of hirers being knocked overboard by the swing of the tiller arm on narrowboats

According to the proposed new check:

- On all hired narrowboats (and vessels of a similar type fitted with a tiller) the full arc described by the movement of the tiller must be clearly identified on the underlying deck or alternatively a warning notice provided in sight of the helm may be used, such as on the Crew Area and Access Limitation Label.
- If the deck is marked, 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; and the arc or segment markings must be permanent and must not be a trip or slip hazard for crew.

The actual type of visual indicator will be a matter for the hire operator as determined as a matter of preference.

This proposal affects an estimated 1100 hired narrowboats.

It is envisaged that the market will fill the demand with the supply of robust proprietary labels. It is envisaged that a one-off label will sell for between £5 - £10 and that discounts on bulk orders will apply. The nominal cost of applying a sticky label is estimated at £5 per boat. It is envisaged that operators may design and fix their own labels. The cost of producing and fixing a bespoke label is estimated at £10 - £30.

Subject to the adoption of the revised Hire Boat Code, hire operators will introduce Crew Area and Access Limitation Labels in sight of the helm position. This sign will include a plan of the boat and would seem to be an ideal platform for including the visual indicator needed to meet the proposed new requirement. There is no significant additional cost to that incurred in designing, producing and fixing the Crew Area and Access Limitation Label.

Marking the arc of the forward end of the tiller on the deck will be the more costly option, but may be favoured by some operators in view of the visual impact it provides. It is estimated that the purchase of slip-resistant paint or tape and the painting or fixing costs will be in the range of £50 - £100 per boat.

Costs per boat, per option		Estimated industry cost - 1100 boats
Labelling only	£10 - £30	£11000 - £33000
Paint or tape only	£50 - £100	£55000 - £110000

5.4.4 The proposal for labels identifying secondary means of escape where these are not self-evident.

According to the proposed new check:

- Designated means of escape, other than the 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.
- 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.
- Labels must be in good condition, with all markings clear and complete.

This proposal affects an estimated 200 hired GRP cruisers and narrowboats, have windows that are also escape routes in the event of fire.

The actual type of label will be a matter for the hire operator as determined as a matter of preference.

The market has a supply of self-adhesive vinyl labels that will meet the need. A one-off label sells for between £3 - £5 and discounts on bulk orders will apply. The nominal cost of applying a sticky label is estimated at £5 per boat.

In the event guidance is needed concerning how to operate 'breaking out' tools it is envisaged that a bespoke notice will be necessary. The cost of producing and fixing a bespoke label is estimated at £10 - £50.

Costs per boat, per option		Estimated industry cost - 200 boats
Labelling only	£8 - £10	£1600 - £2000
Labelling + notice.	£18 - £60	£3600 - £12000

5.4.5 The proposal for a Crew Area and Access Limitation Label in view of the main helm position on all hire boats.

Subject to the adoption of the revised Hire Boat Code, hire operators will introduce Crew Area and Access Limitation Labels in sight of the helm position.

According to the proposed new check:

- All vessels must be provided with a Crew Area and Access Limitation Label which must be in open view, in view of the main helm with all its markings and lettering clearly visible and complete, from the main helm.
- Crew Area and Access Limitation Labels must be clearly marked with a schematic outline of the boat, and clearly identify the:
 - Maximum number of persons permitted on board;
 - Permissible Crew Areas, including where appropriate the maximum number of persons permitted on external decks and cabin structures;
 - General Warning symbol (exclamation mark in triangle).
- Crew Area and Access Limitation Labels must be made of rigid plate or flexible labels affixed to the vessel in such a way that they can only be removed by the use of tools. Text shall be in black on a white background, using a plain typeface.
- Crew Area and Access Limitation Labels must show no signs of damage and/or deterioration.

The regulatory impact assessment supporting the consultation on introducing the Hire Boat Code will be the appropriate place to assess the cost to industry.

5.4.5 The proposal for a slip-resistant surfaces on designated external Crew Areas and the slip-resistant surfaces to be in good condition.

Subject to the adoption of the revised Hire Boat Code, hire operators will need to ensure slip-resistant surfaces on designated external Crew Areas are in place and maintained in good condition.

According to the proposed new check:

- All designated external Crew Areas (as designated by the Crew Area and Access Limitation Label) must be provided with slip-resistant surfaces.
- All boarding planks must be provided with a slip-resistance surface on one side.
- All companionway steps must be provided with a slip-resistance surface.
- Slip-resistant surfaces need not be continuous, but any gaps must not be greater than:
 - 75 mm for non-glazed areas;
 - 500 mm for glazed areas (e.g. deck hatch).
- The condition of all slip-resistant surfaces must be such that the slip-resistance properties have not been reduced significantly.
- Any loose coverings, such as rubber mats must not be capable of unintended movement. They must be held in place by fixings or by the layout of adjacent boat structures.

Slip-resistant surfaces are those intentionally prepared, machined, covered, moulded, etc. to provide increased adherence between a foot (or shoe) and the surface of the deck.

Examples of slip-resistant surfaces include: paint with slip-resistant characteristics; pattern moulded FRP; timber and composite boards and panels; embossed metal plate; unpainted timber; and slip-resistant coverings (e.g. rubber mats),

All of the estimated 3200 inland waterway weekly and day hire boats will be affected by this requirement.

The approach adopted is that boats built to RCD will have slip-resistant surfaces applied to 'working decks' and so BSS Examiners need only check for degradation against areas not apparently degraded.

It is likely that a very small proportion of hire boats may present without continuous slip-resistant surfaces as described in the sub-bullets above, in which case there may be a need to add slip-resistant patches to areas not protected.

The proposed BSS requirement would mirror the requirements of ISO 15085, so the impact on CE marked hire boats should be neutral. Hire boats built before June 1998 may not have slip-resistant decks as specified within the harmonised standard.

The requirement is intended to cover companionway steps, and boarding planks which is essential if key surface areas are to be included in the requirement.

It is the hire operator's responsibility to determine the extent of the Crew Areas, but as addressed by the draft Hire Boat Code all primary cockpits and all access routes on/off a

boat must be included. The Crew Areas may be influenced by the outcome of stability and freeboard testing as set out in the Hire Boat Code. Within the code Crew Area comprises of the areas of the boat in which persons may safely stand, walk, sit or lie during normal operation of the boat including internal decks.

The condition of all slip-resistant surfaces must be such that the slip-resistance properties have not been reduced significantly. When checking the condition of slip-resistant surfaces BSS examiners will pay particular attention to high-tread areas such as cockpits and adjacent side decks, stern and bow decks, and areas around mooring points.

Examiners will not be required to assess the effectiveness of the materials used, when making an assessment of condition.

When assessing condition, examiners will compare the properties of any degraded areas of slip-resistant surface against an area of slip-resistant surface that is not apparently degraded.

Detailed training will be provided to BSS Examiners to help with the identification of all slip-resistant surface types likely to be encountered and to identify the point at which slip-resistance properties have been reduced significantly (degraded). The training material is to be made available to the hire trade to ensure transparency and to act as an encouragement for hire operators to maintain BSS compliance of crew area surfaces.

The cost of introducing the requirement is regarded as largely neutral concerning a significant proportion of all hire boats. For boats with moulded GRP decks, even those in service for over 30 years, are likely to have compliant slip-resistant surfaces as these surfaces rarely are found degraded.

For those hire operators that use paints or other coatings, replacement or re-coating when the surface has worn should be considered a running cost that is a part of the normal maintenance regime and not attributable to the proposed BSS requirement.

The following cost impact concerns the proportion of hire boats that may have to increase the coverage of slip-resistant surfaces to remove gaps in coverage or to add the protection to boarding planks and/or companionway steps.

Costs per boat, per gap		Estimated industry cost
Patch + install	£25 - £100 per patch	500 boats £12500 - £50000
Boarding plank.	£50 - £100 per plank	300 boats £15000 - £30000
Companionway steps	£75 - £150 per set	200 boats £15000 - £30000

5.5: Costs Option 2, Costs of the formal adoption for hire boats of the 23 additional or more comprehensive BSS private boat requirements introduced in recent years

5.5.1 Any disused fuel filling points must be disabled.

The estimated number of hire boats having disused filling points that are not disabled is less than ten. The disabling process can be as simple as the use of epoxy glue or drilling and screwing a grub screw, giving possible minimum and maximum total per-boat cost estimated at £25 - £75 and an estimated industry cost range of £250 - £750.

5.5.2 Fuel tank vent hose connections must be accessible for inspection.

The estimated number of hire boats having inaccessible tank vent hose connections is less than 25. The cost of providing access concerns providing an access panel. The estimated total per-boat cost is around £250 and an estimated industry cost is £6250.

5.5.3 Petrol tank filler connections must enter the tank at the top of the tank

The estimated number of hire boats having petrol tank filler connections not entering the tank at the top of the tank is zero. The cost of compliance usually involves tank replacement.

5.5.4 The use of wooden bungs to terminate a fuel tank drain facility is disallowed.

The estimated number of hire boats having wooden bungs to terminate a fuel tank drain is zero. The cost of compliance usually involves replacing the fuel drain fitting.

5.5.5 High-pressure diesel fuel lines between injection pumps and injectors must be constructed of metallic pipe and not to be made of hose material

The estimated number of hire boats having high-pressure diesel fuel hoses between injection pumps and injectors is zero. The non-compliance is usually associated with the long term use of a 'get-me-home' repair hose. These circumstances are not relevant encountered on hire boats generally.

5.5.6 Petrol engine flame traps are now visually inspected to see that any gauze or filter elements are complete.

The estimated number of petrol engine hire boats having engine flame traps without gauze or filter elements is zero. Gauze or filter elements are a routine service item.

5.5.7 Structures and surfaces surrounding exhaust system components must be free of signs of heat damage.

The estimated number of hire boats affected is less than ten. The low number is associated with the previous mandatory requirements for exhaust lagging. The cost of compliance concerns providing protection to the affected area. The estimated total per-boat cost is around £250 and an estimated industry cost is £2500.

5.5.8 A check concerning the type, location and condition of 230V a.c. inlet connections.

It is proposed a check be made to ascertain that any 230V power supply inlet connections installed on a vessel are of the male pin type, securely fitted, free of missing components; and free of signs of damage or deterioration. In addition power supply inlet connections not obviously splash-proof must not be located where they are likely to be subject to the weather or splashing.

The estimated number of hire boats affected is less than 50. The cost of changing inlet connections is estimated at £70 - £150. The estimated industry cost is £3500 - £7500

5.5.9 A check for the type of 230V a.c. power source lead connections.

It is proposed a check be made to ascertain that power leads must be fitted with a female type socket at the end which connects to the vessel's inlet connection. In addition leads within the vessel used to connect individual power sources to the vessel's alternating current distribution system must be fitted with a male type plug (or be permanently connected) at the end which connects to the power source, and a female type socket at the end which connects to the distribution system.

The estimated number of hire boats affected is less than 20 as the cost of replacing inlet connections is taken account of at 5.5.7. The cost of changing leads within the vessel used to connect individual power sources is estimated at £70 - £150. The estimated industry cost is £3500 - £7500

5.5.10 A check of the condition of 230V a.c. power source leads and connectors.

It is proposed that power source lead cables must be free of signs of damage or deterioration or repairs. Power source lead connectors must be complete, secured onto the cable with no inner conductors visible, and be free of signs of damage or deterioration or repairs.

The estimated number of hire boats affected is less than 20 as the vast majority with 230V a.c. systems do not have shore power or generator lead connections. The cost of replacing power source leads is estimated at £35 - £100. The estimated industry cost is £700 - £2000.

5.5.11 Addressing the fire/electrocution risk associated with using un-synchronised 230V a.c. supplies simultaneously, a check that male pins on shore-power inlet connections are not 'live' when an alternative power source is connected to the 230V a.c. system.

The estimated number of hire boats affected is less than 20 as the vast majority with 230V a.c. systems will have separated supplies through switching arrangements and some will have synchronised supplies through inverters, for example. The cost of introducing a means of switching between alternative 230V a.c. supplies, is estimated at £300 - £750. The estimated industry cost is £6000 - £15000.

The estimated number of hire boats having live male pins on shore-power inlet connections when an alternative power source is connected is less than ten. The cost of addressing this risk is estimated at £300 - £400. The estimated industry cost is £3000 - £4000.

5.5.12 A check introducing a check for the presence of a consumer unit on 230V a.c. systems.

The presumption is that consumer units will have Residual Current Device (RCD) and Miniature Circuit Breaker (MCB) protection.

The estimated number of hire boats affected is less than 100. The cost of introducing consumer units is estimated at £200 - £500. The estimated industry cost is £20000 - £50000.

5.5.13 Portable fuel tanks within inboard engine spaces connecting to fixed engines are not permitted.

The estimated number of hire boats affected is zero. The cost of compliance concerns providing inboard engines with a fixed fuel supply system. The estimated total per-boat cost is around £2000.

5.5.14 Any portable fuel system connection to an inboard engine must be located in the outboard well.

The estimated number of hire boats affected is zero. The cost of compliance concerns modifying the point at which the portable part of the fuel supply system meets the fixed part. The estimated total per-boat cost is around £2-400.

5.5.15 Spare fuel containers to be in good condition.

The estimated number of hire boats affected is less than ten, generally as hirers are not permitted by the hire operator to handle spare fuel. The cost of compliance concerns providing spare fuel containers in good condition. The estimated total per-boat cost is around £25. The estimated industry cost is £250.

5.5.16 A maximum capacity of individual portable petrol tanks to permit safe and convenient carrying and removal for refilling outside the vessel.

The proposal is for a maximum portable fuel tank capacity of 27 litres and will have a minimal impact. It is generally accepted that the maximum capacity that can be easily lifted and transported is 27 litres. This maximum capacity is in the relevant international construction standards and proprietary makes of tanks are limited in this way. Tanks made in accordance with the international standard have been tested to ensure the tank will not split in the event the tank is dropped, etc. The estimated number of hire boats affected is less than ten. Replacement outboard fuel tanks range in cost from £23 to £90. The estimated industry cost is £230 - £900.

5.5.17 Portable fire extinguishers to be in open view, or their location clearly marked.

The estimated number of hire boats affected is less than ten as the vast majority of hire boats will have portable fire extinguishers in open view. The cost of labelling cupboards contained portable fire extinguishers or fixing extinguishers in open view is estimated at £5.75 - £20 per extinguisher. Considering that up to three extinguishers per boat may need addressing, the industry cost is £57.50 - £600.

5.5.18 The check of gas locker condition has changed from an assessment of gas-tightness to a check for any path for leaked LPG to enter the interior of the vessel.

The estimated number of hire boats affected is zero. The cost of compliance concerns repairing or replacing the gas locker. The estimated total per-boat cost is around £2-400.

5.5.19 Gas locker repairs must meet the thickness and other integrity requirements to match the original construction

The estimated number of hire boats affected is zero. The cost of compliance concerns repairing or replacing the gas locker. The estimated total per-boat cost is around £2-400.

5.5.20 Gas cylinder movement whilst in position in the gas locker must not cause any pulling tight of LPG hose.

The estimated number of hire boats affected is 20. The cost of compliance concerns better securing the gas cylinder and/or increasing the length of the LPG hose. The estimated total per-boat cost is around £75. The estimated industry cost is £1500.

5.5.21 Low pressure LPG hoses only to be used to connect regulators or appliances to LPG supply pipework and to be a maximum of 1m in length.

The estimated number of hire boats affected is less than five as the vast majority of hire boats have had competent LPG installation to relevant industry standards that exactly match this requirement. The cost of compliance is estimated at £50 - £150 per hose. The estimated industry cost is £250 - £750.

5.5.22 A check of any 'bullseye' decklight for signs of heat damage to the surrounding surfaces and materials.

The estimated number of hire boats affected is less than five as the vast majority of hire boats do not have bullseye decklights. Compliance is achieved by adapting the decklight not to focus the sun's rays and/or protecting adjacent surfaces found heat damaged. The estimated cost of compliance is £20 - £75. The estimated industry cost is £100 - £375.

5.5.14 A 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.

The estimated number of hire boats affected is less than 15 as only 300 hire boats are estimated to have solid fuel stoves installed. However the failure rate concerning the 'advice' check for private boats is relatively high at 4.7% and this figure is transposed to the hire boats affected. The cost of replacing rope seals or stove panels or total solid fuel stove replacement is estimated as £20 - £2000. The estimated industry cost is £300 - £30000.

5.6: Costs Option 2, Costs of the proposed five additional or more comprehensive changes to the existing BSS hire boat requirements

5.6.1 The proposal that weed hatch requirements should also apply to those bow thruster hatches that can be opened by hirers.

According to the existing check:

- Stern propeller weed hatch openings within the interior of the vessel must be at least 150mm above the normal laden waterline.
- Stern propeller weed hatch cover securing arrangements within the interior of the vessel must be complete and free of signs of damage or deterioration.
- 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.

The proposed change that may affect hire operators is that in addition to stern propeller weed hatches, the requirement is to be applied 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 they may be accessed by hirers.

The estimated number of hire boats affected is zero, as the hire operator is unlikely to allow access to bow thruster or other through hull appliances, and even if they do now, the proposed BSS requirement may cause a change of policy.

5.6.2 The proposal that the current hire boat requirement for a means of reversing, operable from every helm position, should include outboard motors

According to the existing hire boat check boats, every vessel shall have effective means of reversing operable from the steering position.

The proposed change that may affect day hire operators is that the requirement is to be applied to all hire boats with power-driven propulsion systems whereas before its universal application was not entirely clear.

The estimated number of hire boats affected is zero, as hire operators invariably provide hire boats have a reversing facility and the existence of the requirement will act as an encouragement to repair any facility that fails in service. It follows that any cost should be attributed to normal operating costs.

5.6.3 The proposal that the current hire boat handrail/guardrail requirement should be brought in-line with ISO 15085 standard; and include 'handholds' at designated crew areas

According to the existing check where there are walkways, handrails of adequate strength shall be fitted where practicable for the full length of all cabin tops, or guard-rails shall be fitted around the perimeter of the deck.

The proposed change is largely editorial and according to the proposed re-worded check is subject to the adoption of the revised Hire Boat Code:

- All designated external Crew Area (as designated by the Crew Area and Access Limitation Label) must be provided with handholds.
- Crew Area handholds must be secured against unintended movement and be free of signs of damage and/or deterioration.
- Any gaps between handholds must not exceed 1.5m.

The proposed changes will align with the relevant international standard ISO 15085 and the Hire Boat Code and the vast majority of hire boats will comply without modification.

The estimated number of hire boats affected is less than ten, as hire operators invariably provide hire boats having handholds and the existence of the requirement will mainly act as an encouragement to repair any facility that fails in service. In the event handholds were never installed the cost of installing them could be estimated at £500 - £2000. The estimated industry cost is £5000 - £20000.

5.6.4 The current hire boat lifebuoy check should be amended to include a check that the lifebuoys are in good condition; and have floating lines when the hire boat is used

on MCA category C & D waters (tidal rivers and estuaries and large, deep lakes and lochs)

The estimated number of hire boats affected is around 100. The main hire operator affected already conforms to the requirement for floating lines and so the impact may affect less than half of that number.

The impact of introducing a check of condition will mainly act as an encouragement to replace any that become damaged and as such should be considered a normal operating cost.

The cost of compliance of adding a floating line is estimated at £15 - £25 per lifebuoy. The estimated industry cost concerning the estimated 50 boats is £750 - £1250

5.6.5 The current hire boat requirement for fire blankets should be amended to include that fire blankets should be permanently fixed in open view

The proposed change that may affect hire operators is that in addition to provision of a fire blanket will be an additional check that fire blanket containers must be:

- Fixed permanently in a position which allows the blanket to be removed quickly and effectively from the container;
- In open view from the main cooking appliance with all removable lids, doors, curtains etc. in place.

The estimated number of hire boats affected is less than ten as the vast majority of hire boats will have fire blankets fixed in open view. The cost of fixing a fire blanket in open view is estimated at £20 - £50. The estimated industry cost is £200 - £500.

5.6: Option 2 – the costs to BSS Examiners

The cost for BSS examiners will come from a need to attend a one-day local seminar on the agreed changes. It is not anticipated that a significant charge will be made for this other than to cover administration costs, room hire and refreshments.

5.7: Option 2 - the cost to navigation authorities

Direct cost to the Navigation Authorities will arise from any need to further consult, amend of registration, licensing or other conditions and any information to reflect the change in requirements.

5.8: Option 2 – the cost to the marine service sector:

The cost-impact on the marine trade will be minimal with no new capital investment needed. Support to the sector from the BSS will be offered to minimise the effect on its staff in acquiring knowledge of the changed requirements.

6: Consultation with small business

British Marine representing the major part of the marine industry's small businesses, have been well represented and taken an active part in the substantial BSS Committee discussions on the proposed changed requirements.

As part of the 2013 Hirer Safety Review, and in order to make sure that the likely risks were understood, hire boat numbers and incidents over the previous five years were looked at as well as the circumstances behind all recent boating fatalities and serious accidents.

An expert group agreed what the biggest risks to hirers were and considered whether anything further should be done to reduce them. The group included five hire operators, comprising of three narrowboat hire operators, one from the Broads and one from the Thames. The total length of hire operator service of these five was nearly 180 years. Also on the group were representatives from navigation authorities, marine trade and three boat hirers.

The group made some recommendations for change which were subsequently put to hire operators at a series of regional open forums. The results of this work can be read in the report entitled 'Navigation Authority Hirer Safety Review' which can be found the page [here](#). This consultation continues the close involvement with the boat hire operators and is intended to ensure promotion of the proposals, comment from the full range of hire operators affected and views on any possible unintended consequences of a proposal including on implementation timescales.

7: Competition Assessment

7.1 The proposals will not affect competition in the broader business sector.

7.2 The main business sectors are the sale of new and used hire boats relevant to UK inland waterways, the service and repair industry for same and the manufacture and supply of relevant components and equipment used in vessels.

7.3 Sale of new hire boats is subject to the requirements of the Recreational Craft Regulations (RCR) of the RCD. The proposed changes introducing greater emphasis on condition checks are intended to ensure transparent harmony with the Regulations and assist in removing any confusion and uncertainty over which construction requirements apply on the inland waterways.

8: Enforcement and sanctions

8.1 The Boat Safety Scheme does not enforce compliance with the requirements for vessels using inland waterways. It provides a standards-making and verification service to the Navigation Authorities who have the powers, duty and responsibility for enforcement.

8.2 Depending upon how the BSS is accommodated by an individual navigation authority, the BSS requirements represent the law, or conditions under which a licence/registration or

other permission to use a vessel is issued or withdrawn. In most cases failure to support an application for a licence/registration or other permission with a BSS Certification will result in the permission being refused or withdrawn.

8.3 It is recommended that Navigation Authorities review and publish their BSS related regulatory enforcement policies to provide a consistency approach across authority borders.

9: Monitoring and review

9.1 The BSS Office has adopted the overall objective as the establishment of a level of safety equivalent to comparable activities.

9.2 In the future more robust data reporting and recording will be used to measure against the number of incidents per thousands of hours of hirer exposure. In the meantime reducing the number of preventable incidents as measured by risk review and the determination that the risks are as low as reasonably practical.

10: Contact point, concerning this Impact Assessment:

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