Passenger Safety
On Small Commercial
High Speed Craft & Experience Rides

A Voluntary Code of Practice

For owners, operators, managers, skippers and crew.

Issue 3. April 2019

BRITISH MARINE
LEADING THE INDUSTRY

RYA

PASSENGER BOAT ASSOCIATION

Voluntary Code:
This updated guidance note was prepared by:

Royal Yachting Association
Passenger Boat Association
British Marine

The following organisations and authorities contributed to and/or were consulted in the preparation of the original document

British Marine
Mecal Ltd
Maritime and Coastguard Agency
Marine Accident Investigation Branch
Port of London Authority
Professional Boatman's Association
Professional Charter Association
Royal National Lifeboat Institution
Thames Rib Experience Ltd
Thames Rockets

Compiled by: Paul Mara, RYA Training Adviser

Images courtesy of ThamesJet, operated by City Cruises Plc

Foreword

This Voluntary Code of Practice provides skippers and managers with guidance on the safe operation of small commercial high speed craft such as Rigid Inflatable Boats (RIBs), sports boats and other purpose built vessels engaged in carrying passengers on fast sightseeing trips, adventure trips and charters. It should be considered as a guide to good practice to ensure there is a balance struck between passenger enjoyment and ensuring their welfare.

For many passengers their trip may be their first experience afloat in this type of craft. However competent skippers may be, over time there is a likelihood for them to become “desensitized” to the thrill of the ride and thus risk providing an experience that is comfortable for them but at the same time could be considered terrifying by their passengers.

Another important consideration is that many passengers will have little, if any, boat awareness and will therefore be unable to anticipate what will happen as the craft encounters varying sea conditions and scenarios. In contrast to a thrill ride at a theme park where every twist, drop and turn is calculated to remain within acceptable parameters, a ride on a small high speed craft takes place in a dynamic environment and relies heavily upon the skill and judgement of the skipper at the helm.

This guidance was first published in 2010 and has been reviewed and updated by a Maritime and Coastguard Agency (MCA) facilitated industry panel in light of a number of incidents and injuries and the subsequent findings of investigations into those events.

We urge all those engaged in the operation of Small Commercial High Speed Craft to read and follow the following guidance and to constantly assess their own operations for an appropriate balance between fun and passenger safety.

Richard Falk
RYA Director of Training
And Qualifications

February 2019

Passenger Safety on Small Commercial High Speed Craft & Experience Rides.
Issue 3. April 2019

CONTENTS

1. Introduction

This guide covers the management and practical considerations of passenger safety and comfort whilst engaged in high speed experience rides.

This document is aimed at operators, boat crews, statutory authorities and other organisations with responsibilities for the oversight of this type of operation.

It also recognises that port and harbour authorities have responsibilities under the Port Marine Safety Code with regard to the management of marine operations in their area of jurisdiction. Accordingly, where small high speed passenger craft operate in port areas, it must be acknowledged that local port and harbour regulations must also be complied with. As such, high speed operations must be conducted within the scope of a robust Safety Management System founded on formal risk assessment.

It is incumbent on operators to research and understand the general legislative requirements as well as any additional local or navigation authority requirements for the area of operation.

This updated version combines issue 1 of this document and the guidance previously contained in the 'Voluntary Code of Practice for the Operation of Small Commercial High-Speed Craft' published by the Passenger Boat Association into one document. It is based upon the experience of operators and crews and lessons learned during the 8 years since it was originally published.

This guide does not replace the statutory requirements contained in the MCA Small Commercial Vessel Codes of Practice which are aimed at a range of small commercial vessel operations, but rather aims to support operators within the specialist area of high speed passenger craft. As such this document is for guidance only.

2. Aims and Objectives

To recommend and promote common safe working practices for the industry by addressing areas where current guidance and legislation fails to fully capture the specific features of small passenger craft high speed operations.

3. Design and Construction Considerations

The MCA Small Commercial Vessel code determines the statutory requirements for the design and construction of small high speed passenger vessels. In addition to this, the following guidance should be taken into consideration when selecting a vessel for this type of operation.
When selecting a suitable vessel the hull geometry should be considered. For a monohull, 'V' shaped hulls are generally considered to be better in waves and rougher conditions. A deep-V hull slices through waves, whereas a flatter 'V' will compromise the ability to slice through waves, increasing the risk of slamming and potential discomfort and injury.

Seating arrangements should allow passengers to effectively brace themselves against repeated shock loadings and violent movements of the boat. For vessels operating at sea, Jockey seats with effective foam cushioning are preferred. When operating vessels at sea with bench seats without lateral support in any sea state beyond calm, the vessel should be driven in such a manner so as to mitigate against the risk of injury or ejection through actions such as lower speeds and wider, slower turns than might otherwise be the case. Irrespective of seating type and operating area, the vessel should always be driven appropriately for the sea conditions.

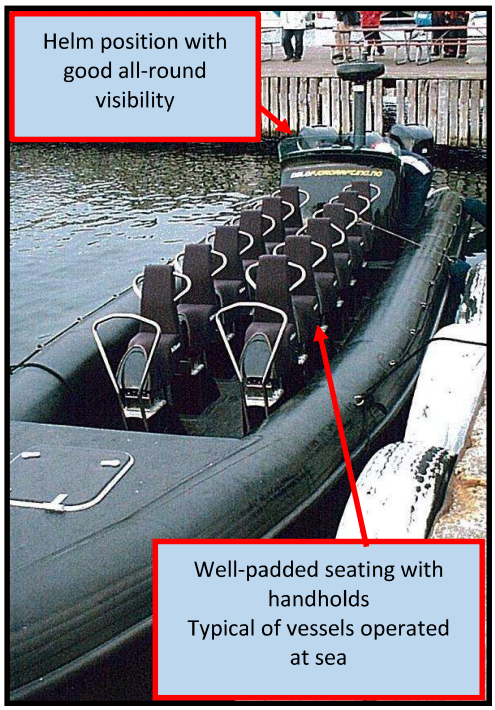
Passenger seats located near to the bow are likely to experience higher shock loading compared to those located amidships. Seats should also be located away from areas which do not allow the occupants to have their feet flat on the deck, e.g. away from sloping bulwarks.

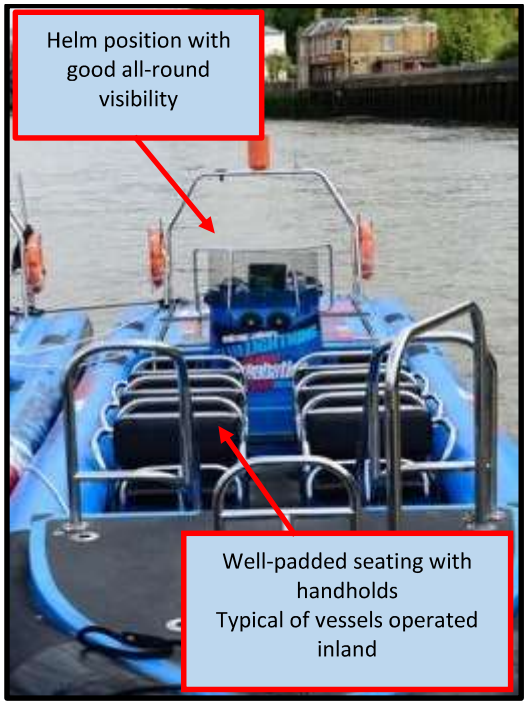
When a boat jumps off a wave, it is usual for the passengers to part company with their seats. When the boat then impacts with the water the passenger can land on the seat with considerable force - increasing their risk of injury. The seats design features, such as the cushioning/padding can reduce this risk of injury. However, while a thick, soft seat pad cushion may be comfortable at rest and in benign sea conditions, when exposed to choppy sea conditions soft cushioning can result in the passenger travelling downwards, compressing the cushion, while the boat has landed and is travelling upwards. This can result in an increased impact force on the passenger as they and the boat seat are travelling in opposite directions. Therefore, it is better to have seats that are not susceptible to extreme compression as a result of the downward force of the passenger impacting them.

Handholds - all seats should have handholds located in front of the passenger allowing them to hold on with both hands. These should be roughly at chest height and shoulder width apart. Consideration should be given to the potential loss of firm hand grip during cold conditions. Further consideration may need to be given to padding the rear facing back of a seat and associated handholds to avoid risk of facial injury to the passenger behind in the event of rapid deceleration.

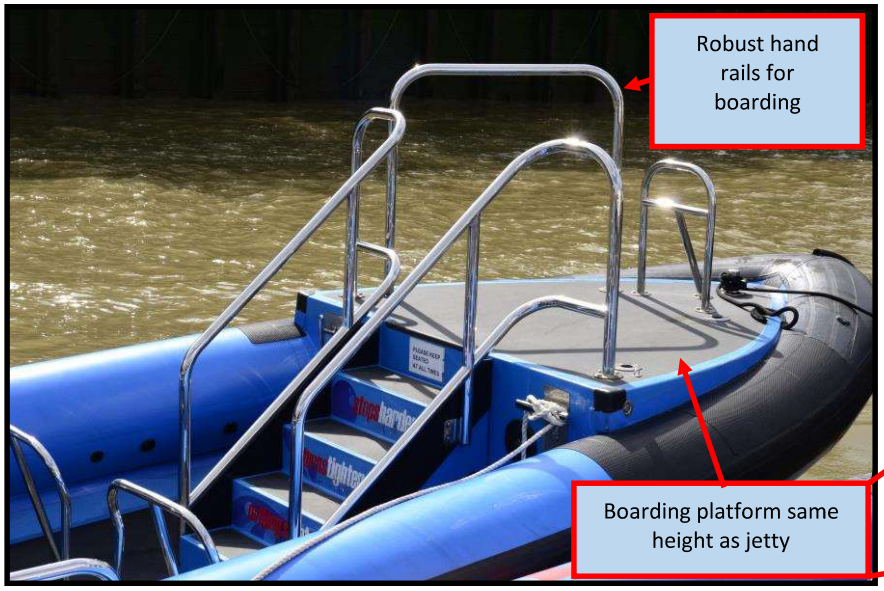
The boat design should minimise the amount of structure that passengers could fall onto or impact with in the event of a slam incident, thus reducing the risk of injury. Consideration should also be given to the height of the gunwale or inflatable tubes relative to the height of the seating in order to minimise the risk of ejection.

The small commercial vessel sector is one of innovation where new products and equipment are frequently appearing on the market. Specialist seating and “shock flooring” are examples of such equipment. Operators should remain open minded as to the relevance or appropriateness of such equipment on their vessels given their operation. Remember also that retro-fitting such equipment may impact the structural or stability characteristics of the vessel and your certifying authority should always be consulted prior to fitting.





Typical seating configurations



4. Managing Passenger Safety from booking to disembarkation

The following recommendations should, as a minimum, be considered in respect of small high speed craft passenger operations.

4.1 Suitability of Potential Passengers

Not all passengers are suitable to engage in fast craft experiences. Below are some examples of passenger types who may be subject to an increased level of risk when travelling on board small, high speed craft. Please note, this list is not exhaustive:

- Very young children
- People with reduced mobility
- Pregnant ladies
- Those suffering conditions resulting in decreased bone strength
- People with a history of back or spine conditions or injuries
- Anyone who is unable to effectively brace themselves during turns or impacts

In the event that a decision is made to decline a booking for any reason, it should be handled with sensitivity.

In order to determine the fitness of a potential passenger before a booking is accepted for a specific voyage, descriptors of the passage or experience should be realistic, accurate and made available to potential passengers to assist them in making an informed decision prior to booking.

Whilst it is ultimately the responsibility of the master as to who they will carry on board, masters and crew are not medical experts and therefore careful screening of the passengers at an early stage of the booking process will avoid unnecessary disappointment and embarrassment at the boarding gate.

Safety messaging both on booking forms and through carefully thought through signage on board can be effective in communicating key messages to passengers which will be reinforced through the on board safety briefing.

4.2 Reasonable adjustments for those with disabilities

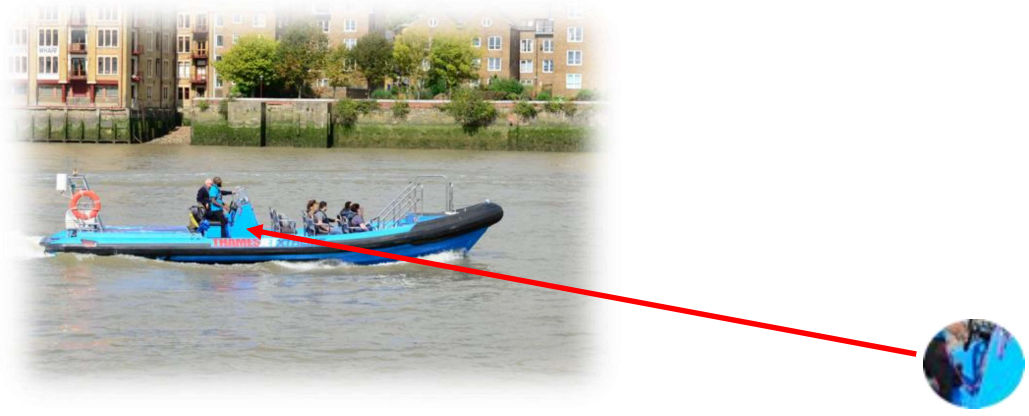
Legislation gives disabled people rights to access your rides and you may have to make 'reasonable adjustments' to help. You should know what safety precautions are needed to allow the public to use your device safely (use of restraints, hand and foot bracing points, information and instructions etc.), and where you think a disabled person may have problems complying, consider whether there are any adjustments that you can make to enable them to use the ride safely.

You may, however, be able to justify less favorable treatment of a disabled person and not making an adjustment for a disabled person, but only if this is necessary to protect people's health and safety, e.g. other customers, the disabled person themselves or the operator (see example below). You will need to consider the unique nature of your vessel and the individual circumstances of your client. You are likely to discriminate if you have a 'blanket' rule that treats disabled people differently, e.g. if you ban all disabled people from your vessel.

Avoid making assumptions and seek to involve, where you can, disabled customers or those supporting them. They are likely to have thought about the suitability of the ride beforehand and together you can make an informed decision.

Example

An operator refuses to allow a person with multiple sclerosis onto a physically demanding, high-speed ride. Because of her disability, the disabled person uses walking sticks and cannot stand without help. The ride requires users to brace themselves using the strength in their legs. The refusal is based on real concerns for the health and safety of the disabled person and other users of the ride. This is likely to be justified.



5. Manning and Qualification Requirements

The manning requirements for small commercial vessels are dependent upon the area of operation which is determined by the categorisation of the vessel in the Small Commercial Vessel (SCV) certificate.

In addition to the qualification requirements set out in the Maritime & Coastguard Agency (MCA) Codes of Practice operators should also satisfy themselves that the person in charge of the vessel is, in addition to any qualifications, competent and has recent and relevant experience of the type and size of vessel.

The operator should ensure that the skipper and, where necessary, the crew of the vessel can deal confidently with passengers. This can be achieved by in house training and familiarity with the overall operation.

Operators should also familiarise themselves with, as well as ensuring compliance with any byelaws or local regulations relating to manning requirements that may be imposed by relevant authorities within specific areas of operation.

5.1 Crew Training

In addition to the statutory training requirements, it is essential that there is a comprehensive training programme in place for the Skippers and Crews of Small High Speed Craft. This should cover all aspects of the operation.

5.2 Scope of Training

The recommended scope of training should include at least the following:

All Aspects of Boat Handling, particularly at high speeds in a variety of wind and sea conditions
Fitting and use of kill cords or other equivalent means of automatically disabling the propulsion system
Passenger Care & Management
Pre – departure briefing to passengers
Emergency Procedures including Man Overboard
Operating and Navigation Rules including navigating at speed.
Communications
Familiarisation with vessel and area(s) of operation.

5.3 Frequency of Training

Skipper and Crew Training should be undertaken and completed before carriage of passenger is authorised by the Company. A Training Programme should be in place to ensure that all Skippers and Crew undertake refresher training in all aspects of the operation and that regular exercises should be conducted to test and improve all Emergency Procedures on a periodic, programmed basis.

5.4 Training Records

It is incumbent upon the operator to create and maintain a record of all training undertaken together with a schedule stating when refresher training is due.

6. Crew to Passenger Ratio

The maximum number of passengers that can be carried safely on the vessel will be described in the vessels certificate. Under the UK Small Commercial Vessel Codes of Practice the number of passengers will never exceed 12. The maximum number of passengers must never exceed the vessel's certificate.

While the Code of Practice for Small Commercial Vessels allows for craft in this category to operate with only a skipper, it is recommended that operators carry an additional trained crew member to assist in the safe operation of the craft and to monitor passenger and crew comfort and safety. The additional crew member could prove essential in the event of an emergency requiring attention to a passenger, while the vessel returns to a safe haven.

When operating a vessel without an additional crew member, the SCV code of practice requires that the skipper should ensure that at least one other person on board is briefed on the following as a minimum:

- Location and method of launching life rafts
- Procedures for the recovery of a person from the water
- Location and use of pyrotechnics
- Procedure for the operation of radios carried on board
- Location of navigation and other light switches
- Location and use of fire - fighting equipment
- Method of starting and stopping and controlling the main engine
- Method of navigating to a suitable port of refuge

7. Area of Operation

The majority of sightseeing trips follow a predetermined route to take in specific sites as advertised in the company's literature, e.g. bird watching at certain predetermined viewing points. However, it is recognised that some trips will require the vessel to seek out its attraction. For example, dolphins may frequent an area but it is down to the skipper to locate them on a particular day.

Experience trip operators should ensure their procedures take into account interaction with other craft, avoid unacceptable hazards and clearly define routes to be taken. Operators should also ensure skippers and crew are aware of restrictions such as speed or no wash zones in specific areas and take appropriate actions to ensure compliance at all times.

In all cases it is important that operating parameters are set by the operator and that the skipper does not stray from the agreed area. Skippers, even if operating within

the set parameters, should continue to dynamically risk assess the developing situation and always be prepared to curtail a trip. Operating procedures should take account of this.

Small high speed craft can be highly susceptible to changes in local sea conditions, so it is essential that skippers and crew are aware of all risks within their agreed operating area. The impact of tidal streams and heights should be considered carefully on each passage where relevant.

8. Weather Limitations

When planning a trip on a given day, always consider the weather forecast and assess the conditions that may be encountered.

If the conditions are less than favourable, consider reducing passenger numbers, reviewing seating positions and limiting speed. It may even be prudent to consider postponement or cancellation.

If approaching an area known to be hazardous in the prevailing conditions, stop and reassess your passage plan. If, by entering this area, you are committing the vessel to a potentially unacceptable risk, you should divert around the hazard or even consider turning back.

In addition to conducting their own assessment of the prevailing weather conditions and sea state, operators must also be aware of any "operating environment" restrictions with which they are required to comply under the SCV Codes of Practice. For example, vessels operating in SCV Category 4 waters may operate "Up to 20 miles from a safe haven, in favourable weather and in daylight."

9. Passenger Safety Briefing

Operators owe a duty of care to passengers and as such must ensure that skippers are sufficiently competent to drive the vessel, assess passengers' suitability for the planned passage and conduct an appropriate briefing for the forthcoming experience. Monitoring of passengers during the voyage is essential.

Key to passenger safety on board a craft of this type is a good pre-departure safety briefing. It sets the scene for what is to follow and gives the opportunity to assess the passengers' suitability and build their confidence and understanding of what they should expect. Getting passengers to interact at this point should ensure they are more likely to inform you of any discomfort encountered during the voyage.

Before the start of every voyage the skipper must ensure that a safety briefing is given, which should as a minimum include correct fitting and operation of lifejackets, the

location and use of thermal protective aids and lifebuoys, and the procedures to be followed in an emergency. Suitable outdoor clothing and footwear is recommended. (See Annex A – Fitting of Life Jackets).

It is acceptable to use safety cards in order to provide the information above, but it is prudent to check passengers' understanding if using this method.

During the pre-departure brief, skippers should give an overview of the passage with details of any areas of significance, i.e. possible turbulence that may be encountered.

It is essential that advice is given on the importance of using correct handholds and adopting a good posture. Explanation of how passengers may 'stand' (subject to the vessels seating being suitable) along with a demonstration of how to use bent knees to mitigate against shock will also be helpful.

The magnitude of impact and movement on a small high speed craft is greater at the bow and reduces towards the stern. When deciding on where each passenger will sit, the skipper should take this into account.

It is important that a method of communication is established for passengers to indicate if they are in discomfort or wish to speak to a crew member. This is often achieved by the individual passenger raising their hand. A shouted word such as 'stop' may also be suitable. For vessels with a forward helm position, the use of a wide angle rear vision mirror can also provide skippers with a clear view of their passengers for monitoring of their welfare.

The skipper should ensure passengers are made aware in advance of any significant changes in course or speed that may require them to brace.

Finally, in order to check that passengers have understood and are happy, encourage them to ask questions. Often, due to perceived peer pressure, personal pride or a desire not to spoil the fun of the majority, passenger feedback will be limited. Nevertheless, the skipper must be confident that all passengers are happy to proceed.

10. Passenger Boarding and Departure

All passengers shall be supplied with, and briefed on the use of life jackets, and good practice dictates they should wear them at all times whilst afloat.

During the boarding process passengers should be made aware of the relative differences between the seating areas of the vessel with regards to comfort and motion.

It is recommended that the following procedures and checks are undertaken as the vessel departs from the mooring or quay:

- Mooring ropes and warps inboard and secured ready for use.
- Passengers remain comfortable and relaxed.
- Controlled, safe, slow departure with suitable lookout.
- Vessel systems including engines, electrics and communications equipment functioning correctly.
- Build up speed slowly while monitoring passengers for comfort and posture.
- Maintain lookout and comply with navigation rules and other waterway users.

11. Safety whilst on Passage

It is essential that the vessel is fitted with a fully serviceable kill cord or other equivalent means of automatically disabling the propulsion system and that this is attached appropriately to the helmsperson at all times whilst the vessel is making way. A spare kill cord should also be carried at all times in an easily accessible location with all crew being made aware of its whereabouts.

The guiding principle of ensuring a safe ride is to keep the craft in contact with the water. Launching a boat off a wave, or even the wash of another boat, may generate excitement but the forces encountered on landing can be extreme and can cause serious injury. Therefore, seeking out rough conditions to enhance the thrill of the trip should not be considered good practice. Even in relatively benign conditions, the shock and vibration experienced can be surprisingly high.

In relatively calm conditions, high speed craft have been shown to experience impacts of 20g perpendicular to the deck, and in excess of 10g parallel to the deck.

High speed U and S turns should be carried out gently and at a safe speed and appropriate rate of turn. The skipper should be familiar with the handling characteristics of the vessel and the parameters within which it should be operated in order to mitigate against the risk of hooking. (See Annex ‘B’ – Avoiding & Mitigating against the effects of Hook). As each vessel will have specific ride characteristics, operators should ensure that their operating procedures clearly state maximum safe operating parameters to this effect. Again, it is important to remember that a boat travelling at speed and heeling to 15 – 20° may be exciting to the majority of passengers while causing distress to the less confident ones. Maintaining a safe speed and correct trim is critical. What can be considered safe on a calm day may become reckless in less favourable conditions. However, this does not mean that reducing speed and/or power is always the correct approach to challenging sea conditions.

Handling a small, high speed craft in heavy sea conditions presents many challenges, even to the most experienced skipper, and the ability to find a safe passage through waves using appropriate speed and the correct trim of the vessel is essential. Skippers and crews should be familiar with the type of craft and experienced in the sea conditions they may encounter.

All passengers should be seated in the seats provided. Standing and/or sitting on the inflatable tubes exposes passengers to risk of severe injury and should be avoided. Operating procedures for the vessel should clearly identify which seats are appropriate for high speed operations and which are not. This should be determined only after a thorough assessment of the craft is conducted when it is introduced into service.

Passengers should be seated and / or appropriately braced at all times when the craft is under way and only leave their position when the craft is properly secured alongside and they are instructed to do so by the skipper. They should be briefed not to move about the vessel whilst it is under way.

12. Hazard Perception

Hazards (or risks) can be identified and mitigated against by applying simple planning based on experience. Many hazards can be recognised and addressed by reviewing the operator's intended business plan and scope of operation throughout the year. These may be considered 'foreseeable' and can be identified through a simple review meeting undertaken by all key management and staff.

During the trip hazards may also arise spontaneously and without warning. These could occur during any of the trips undertaken in the company's operating area. Identification of hazards within an operating area is essential to the safety of a vessel, but identification alone will not necessarily remove the danger. Responsibility rests with the skipper to decide, based on prevailing conditions at the time. What can be perceived as an unacceptable risk to one person may be considered safe by another. With this in mind operators should review carefully all actual and potential hazards, and ensure that robust procedures are in place and that all skippers and crew work within the operating parameters. These hazards may be considered 'spontaneous' and will need quick assessment and mitigation on the part of the skipper and crew while the vessel is under way.

In particular, operating in hours of darkness or in restricted visibility requires an additional level of risk assessment and skippers should be familiar with the area in which those operations are taking place and any associated hazards such as unlit buoys. Vessel speed must be appropriate to the circumstances.

The development of robust and resilient Safe Operating Procedures is the key to recognising and mitigating against hazards. (See Annex C - Identifying & Mitigating Against Risk).

13. Communications

Effective communication is essential. An important factor in ensuring good communication is the maintenance of a listening watch on the appropriate channel for the area in which you are operating. Turning down the volume of the VHF radio could result in the skipper missing an essential weather or safety broadcast or news of vessel traffic movements.

In some areas it is a local requirement to report all commercial vessel movements to the relevant authority at the start and finish of each voyage. Operators should ensure that procedures are in place to meet any such requirement.

If mobile phones are used as part of the operator's communication network, their effective range should be assessed widely across the area in which the vessel will operate.

Skippers and crew members should be familiar with the company's emergency communication plan. This should be developed from experience, local knowledge and risk assessment. To be effective, procedures must be followed regardless of any potential local or commercial embarrassment.

Some operators use their own private channels. However, in an emergency, when the rescue services are required, contact the Coastguard at the earliest opportunity.

Should an emergency occur at sea, it is important that initial Coastguard contact is established by VHF Marine Band radio. A mobile telephone however may be utilised as a potential secondary device.

Operators should ensure clear operating procedures are in place and all staff are aware of actions to be taken in the event of an incident or emergency. Drills should be conducted on a regular basis to test procedures and to enhance staff familiarity with those procedures.

14. Close Proximity to Other Craft

When operating at speed in close proximity to other craft due regard to both speed and the maintenance of a safe distance between vessels should be given. The safety and well - being of your own passengers and vessel as well as that of other water users is essential. In addition to safety, skippers should also avoid manoeuvres in the vicinity of other craft that may be perceived as anti-social.

15. Fleet Operations

When operating as a part of a group of two or more vessels at speed pre-arranged operating procedures should be agreed. Signalling before manoeuvring, safe separation distances and agreeing and communicating a route in advance all examples of good practice. Executing crossing manoeuvres at speed and in close proximity is not considered advisable.

16. Passenger and Crew Lists

In some locations a local regulation will require the mandatory reporting of the number of passengers and crew prior to each departure to aid in SAR operations in the event of an incident. Where this is not required it is good practice to ensure a shore based representative has this information and can relay it quickly to the authorities in the event that it is needed.

17. Operating around wildlife

At all times, skippers should be aware of wildlife in and around the area of operations and be mindful of the risk both to the wildlife and to the vessel and its passengers.

Whilst it might be tempting to get a little closer to see more, remember that marine wildlife is just that - wild. All types of watercraft have the potential to cause disturbance, so follow our simple green guide to keep disturbance to a minimum, get the best experience out of your wildlife encounters and keep you and your boat safe.

Three easy steps

See - Can you spot something in the distance or is an inquisitive creature coming to get a closer look at you?

Evaluate - How many are there, how far away, are they moving towards or away from you, are there any mothers and young?

Act - Think about your speed, be steady, predictable, quiet and cautious.

For more information visit the Green Wildlife Guide for Boaters:

www.thegreenblue.org.uk

(See Annex D - The Green Wildlife Guide for Boaters)

18. Voluntary Auditing of Operation

18.1 Introduction

In the general interests of safety and the industry image, it is recommended that operators implement a Safety Management System (SMS) and arrange and undertake their own audits of their SMS. This may be done in house or be facilitated independently.

18.2 General Approach to Auditing

Auditing a SMS need not be an onerous task. It could involve a simple meeting between operators, crew and support staff at the end or beginning of the season to review:

- Previous 12 months operations
- Operational Procedures
- Operational performance
- Faults and failures
- Engineering Plan
- Administration procedures

- Planning of Next 12 Months
- Procedure improvements and or changes
- Operations Plan
- Engineering Plan
- Administration procedures

- Risk Analysis

- Review of incidents, accidents and near misses and Mitigation Plans, including lessons learned from any relevant MAIB investigations

- Identify any additional training requirements for skippers, crew and support staff

- Any Other Business

Annex A
Example of Fitting Life Jackets

Explain the waistcoat style and fitting

Assist passenger with fitting

Ensure any clips are secured

Ensure adjustable cords are pulled both sides to give a firm fit

Check that jacket is fitted firmly and correctly

Point out the manual inflation toggle to be used should the jacket not inflate automatically

Annex B
Avoiding & mitigating against the effects of a hook

Fortunately, crew and passenger ejections from craft are few and far between. However, when they do occur the consequences can be catastrophic. Understanding the handling characteristics of the vessel in varying sea conditions is essential to its safe operation.

Correct trim, balance and an appropriate speed for the conditions encountered are essential components for ensuring the safety of the vessel, its passengers and crew. In some conditions, incorrect balance and trim combined with an inappropriate speed can result in the vessel hooking. An increased rate of turn can also contribute to increased risk of hooking.

So, what is a 'hook'? Hooking is a term that is well known within the realms of powerboat racing. In basic terms hooking is used to describe a violent alteration of course and deceleration resulting in a significant, momentary, delivery of G-force being exerted on the craft and its occupants. Often unexpected, a hook can occur in relatively benign conditions, in waves or when crossing the wake of another craft. Whilst the risk of a hook is most likely to be the greatest during a turn, a hook can also occur even when travelling in a straight line.

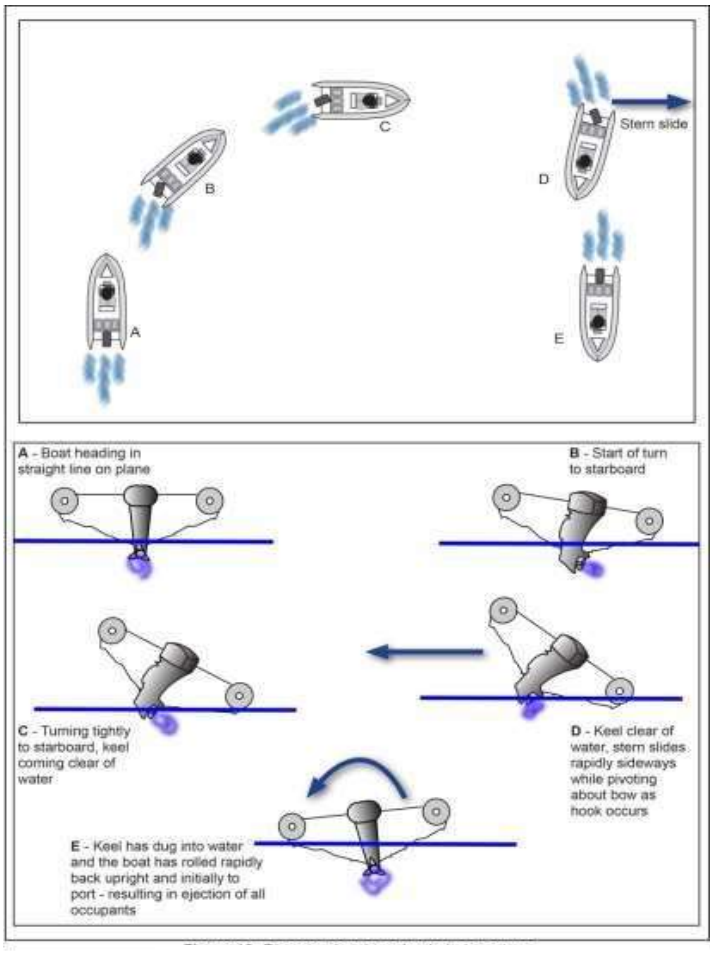


Image courtesy of the MAIB Crown copyright

Hooking cannot be attributed to one specific circumstance and most, if not all, high-speed monohull craft could be susceptible if inappropriately trimmed, balanced, loaded or if being driven inappropriately for the prevailing conditions. It is therefore essential that skippers be aware that many small factors, when combined, can have serious consequences and most importantly they must understand what they should do to avoid a hook and how to limit the severity of the outcome should one occur.

How to avoid a hook

Never underestimate the importance of trim and balance. Ensure that the passengers and crew are seated securely in positions that do not compromise the trim or balance of the boat, especially when operating at higher speeds. When operating below the maximum permitted number of passengers place them in positions to gain the best trim. Where possible, avoid positioning them too near to the bow. Continually assess the conditions and always drive at an appropriate speed. Avoid sudden increases and decreases in speed, especially when turning.

How to mitigate the effects of an unintentional hook

Communicate with the crew and passengers any intentions to alter course or change speed. Wear the Kill Cord at all times when underway. Secure, forward facing seating and appropriate handholds will ensure that passengers and crew have a better chance of remaining in the craft should a hook occur.

Annex C
Identifying & Mitigating Risk

Introduction

Hazard Assessment in High Speed Experience Ride operations is a crucial factor in ensuring that vessels are suitably and adequately equipped and set up for the intended trip or that trips are limited to operate within the capabilities of the vessel and crew.

Furthermore, in the light of unpredictable sea and weather conditions, passenger safety in respect of adequate security and safety is paramount. Properly thought out seating, hand holds and passenger restraint need to be fully considered as part of the operator's 'Foreseeable' risk assessment if serious injury to passengers is to be avoided.

Managing Hazards

Hazards should be categorised with the acronym ALARP in mind. This stands for:

As
Low
As
Reasonably
Practicable

It implies that hazards should be managed to the lowest practical level. A simple group or team approach is all that is necessary and you can start by looking at all aspects of the operation and commencing with the statement:

'There is a risk that .....
This creates risk number 1. The next stage is to quantify the risk by allocating a number 1 to 3 (1 being the lowest level of risk / severity and 3 being the highest) to each the following considerations:

- What is the likelihood of the risk occurring (Likelihood)?
- What would be the immediate scale of impact should the risk occur (Severity)?
- What would be the consequential impact should the risk occur (Following)?

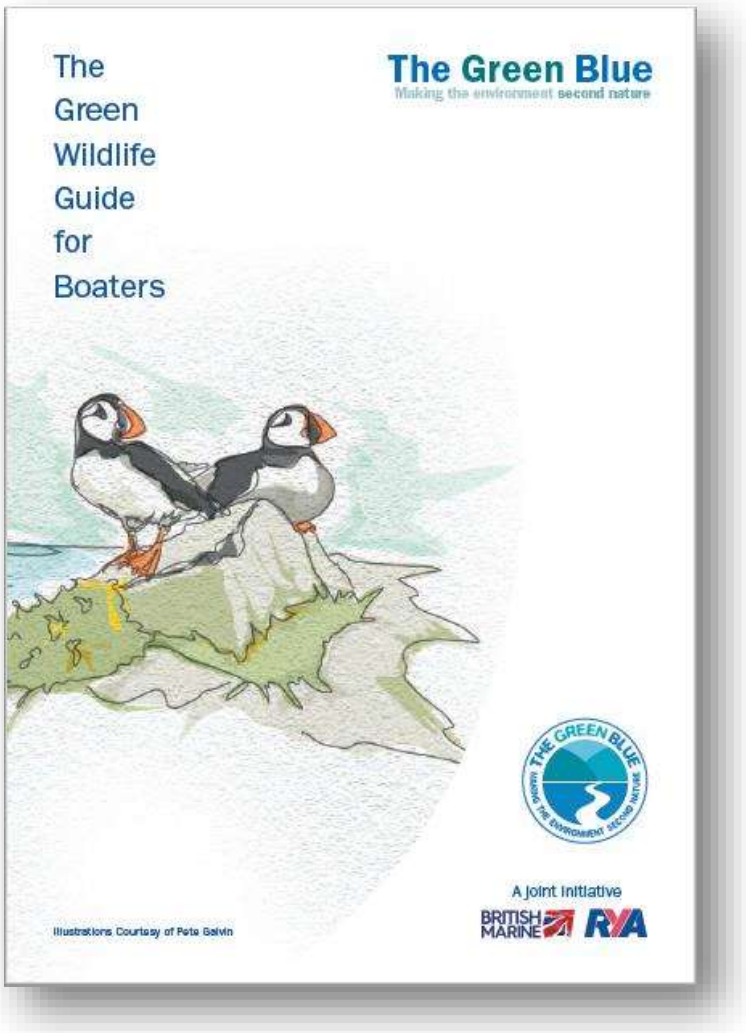
Multiply the three together and this rates the risk and facilitates judgement in comparison to all the other risks. Next, decide how the risk can be mitigated against, record it and, assuming it is possible, implement measures to minimise the likelihood of it occurring. Not all risks can be mitigated against and some may be out of your control. Record it in a simple table and move on to Risk number 2 and so on. Whilst many risks may be identified it is probably only possible to manage a small number at any one time.

Number	Description of Risk	Severity	Likelihood	Following	Risk Rating	Mitigation Plan	Complete?
1	Collision between two company owned vessels during experience ride with multiple vessels afloat	3	2	3	18	Operating procedures stipulating minimum safe distances between vessels, no – pacing or “thrill activities” and agreed formation (V) when operating multiple vessels	18th Nov 2017

Figure 1 - Example of an Entry in a Risk Register

Annex D

The Green Wildlife Guide for Boaters



Link to document

http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwjtl_y_m9vSAhUpB8AKHfibDikQFggaMAA&url=http%3A%2F%2Fthegreenblue.org.uk%2F~%2Fmedia%2FTheGreenBlue%2FFiles-and-Documents%2FLeaflets%2FThe-Green-Wildlife-Guide-for-Boaters.ashx%3Fla%3Den&usg=AFQjCNEu7piz7DrwMQ3PTHspldhntx1Ruw&sig2=XEIgKUURgxF57TD4fmr2FA

Bibliography

The following references and documents are provided as a source of further information.

- The MCA Code of Practice for the Safety of Small Commercial Motor Vessels (Yellow Code)

- Marine Guidance Note MGN 280(M) Small vessels in Commercial Use for Sport or Pleasure, Workboats and Pilot Boats

- High Speed Motion, Ergonomics & Injury. Published by ST Research Ltd.

- RYA Powerboat Handbook by Paul Glatzel ISBN 0-901501-99-9

- RYA Advanced Powerboat Handbook by Paul Glatzel ISBN 978-1-906435-98-1

- The Green Wildlife Guide for Boaters by The Green Blue www.thegreenblue.org.uk