

The Port Marine Safety Code
Safety Management System: Stakeholder Hazard Review 2016
Report by Head of Safety Management

Summary: This report details the outcome of the Safety Management System Stakeholder Hazard Review.

The Committee is invited to note the report and Members' views are sought on the recommendations in Section 6.

1 Introduction

- 1.1 The Broads Authority, as a Competent Harbour Authority under the Pilotage Act 1987, is required to comply with the duties and responsibilities set out in the Port Marine Safety Code (PMSC)¹.
- 1.2 The Code requires that all harbour authorities base their powers, policies, plans and procedures on a Formal Safety Assessment (FSA) and that they maintain a Safety Management System to ensure that risks are reduced to a level which is as low as reasonably practicable (ALARP).

2 Background

- 2.1 In May 2003, the Broads Authority undertook a detailed Formal Safety Assessment² which identified 28 hazards and proposed risk reduction measures. The outcome of the Assessment was documented in a Hazard Log.
- 2.2 In 2007, the Authority published a Safety Management System (SMS)³ to meet the needs of the PMSC. The SMS recommended that the Hazard Log be reviewed and updated annually, to validate the existing hazards and capture any new ones.
- 2.3 The most recent review was in March 2015, the Hazard Log was reviewed and amended. A report was brought to this committee in April 2015.

¹ Port Marine Safety Code, DETR, ISBN 1 85112 365 2, dated March 2000

² Broads Authority Navigational Formal Safety Assessment, 328S116, Issue 1.2, dated May 2003

³ Broads Authority Port Marine Safety Code Safety Management System, Issue 3, dated March 2013

- 2.4 The objective of this report is to document the process by which the hazards were reviewed and updated, and to present a summary of significant changes to the hazards.

3 Review Meeting

- 3.1 A Stakeholder Hazard Review was held on 25th February 2016 at Broads Authority Dockyard, Norwich.
- 3.2 The meeting brought together a group of suitably qualified and experienced people to discuss and update the hazards. The invitees are listed in Table 1 below.

Name	Representing	Attended (Y/N)
Michael Whittaker	Broads Authority Navigation Committee Chairman, Boat Safety Management Group chair	Y
Richard Card	NSBA	Y
Tony Howes	Broads Hire Boat Federation	Y
Robin Richardson	Potter Heigham Bridge Pilots	N
Richard Musgrove	Peel Ports	N
Julian Barnwell	Eastern Rivers Ski Club	N
Mark Wells	River Cruiser Class	N
Colwyn Thomas	Representative from Rowing interests	N
Duncan Holmes	Broads Angling Strategy Group	Y
Paul Mitchelmore	Environment Agency	Y
Kevin Marsh	Broadland Environmental Services Ltd	N
John Staverley	Lowestoft and Oulton Broads Motor Boat Club	Y
Trudi Wakelin	Director of Operations, BA	N
Steve Birtles	Head of Safety Management, BA and PMSC Designated Person	Y
Adrian Vernon	Head of Ranger Services, BA	N
Rob Rogers	Head of Construction and Maintenance BA	N
Lucy Burchnall	Deputy Head Ranger Services, BA	Y
Adrian Clarke	Senior Waterways and Recreation Officer, BA	Y
Mark King	Waterways and Recreation Officer BA	Y
Karen O'Reilly	Administrative Officer, BA	Y

Table 1: Attendees at Hazard Review Meeting

- 3.3 The objective of the meeting was to review all the hazards and capture updates. The attendance of a cross-section of interested parties allowed the hazard assessment and mitigating action to be agreed.

4 Summary of Changes

- 4.1 All the hazards are assessed in terms of the likelihood of an accident occurring and the severity of any such accident.
- 4.2 The method by which this assessment is carried out, and the definitions of probability, severity and risk classification, are set out within the Safety Management System (footnote 3). The risk categories are reproduced in Table 2 below.

Category	Name	Meaning
A	Intolerable Region	These risks require urgent attention and should be the focus of regular reviews. Any suitable risk control measures that are identified should be seriously considered for implementation. Such risks cannot be declared ALARP, a means of reducing or avoiding the risk must be found and implemented.
B	ALARP Region	These risks require review to ensure that they can be satisfactorily weighed against the time, trouble, cost and physical difficulty in taking further measures to reduce them. Important Note: It is incorrect to say that a risk in this region “is ALARP”. In fact, it means the risk <i>has the potential to be declared ALARP</i> , on the basis of the level of risk and the mitigations identified and implemented.
C	Broadly Acceptable Region	These risks require occasional review (e.g. annually) to ensure that they remain under control and that they remain within the Broadly Acceptable region. They do not require demonstration of ALARP.

Table 2: Definition of Risk Classifications

4.3 Table 3 below provides an overview listing of all 41 hazards, giving the previous and new risk assessments. **Yellow** shading indicates where assessments have been changed. New hazards are marked with **orange** shading. Hazards which have been closed or superseded are greyed out. Hazards which are declared ALARP are marked with **green** shading.

Direction of Change	Hazard	Title	Previous Assessment					New Assessment				
			Prob	Severity			Cat	Prob	Severity			Cat
				Pers	Env	Ass			Pers	Env	Ass	
↕	001a	Passage of Commercial Craft	Rem	Maj	Mod	Mod	B	Rem	Maj	Mod	Mod	B
↕	001b	Passage of Commercial Passenger Craft	Rem	Maj	Mod	Mod	B	Rem	Maj	Mod	Mod	B
↕	001c	Passage of Commercial Craft; Ferries	Prob	Mod	Min	Min	B	Prob	Mod	Min	Min	B
↕	002	Powered craft speeding	V Fre	Min	Min	Min	B	V Fre	Min	Min	Min	B
↕	003	Inexperienced Helmsmen	V Fre	Min	None	Min	B	V Fre	Min	None	Min	B
↕	004	Yacht and Dinghy Racing	Pro	Min	None	Min	B	Pro	Min	None	Min	B
↕	005	Competitive Rowing	Rem	Mod	None	Min	B	Rem	Mod	None	Min	B
↕	006	Angling	Fre	Min	None	Min	B	Fre	Min	None	Min	B
↕	007	Potter Heigham Bridge	Prob	Mod	None	Min	B	Prob	Mod	None	Min	B
↕	008	Wroxham Bridge	Prob	Mod	None	Min	B	Prob	Mod	None	Min	B
↕	009	Swimming	Rem	Sev	None	None	B	Rem	Sev	None	None	B
↕	009a	Swimming (open Water)	Rem	Sev	None	None	B	Rem	Sev	None	None	B
↕	010	Bridges	Fre	Mod	None	Min	B	Fre	Mod	None	Min	B
	011	Grounding	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
↕	012	Mutford Lock	Rem	Mod	Min	Min	C	Rem	Mod	Min	Min	B
↕	013	Powerboat Racing	Rem	Sev	Min	Mod	B	Rem	Sev	Min	Mod	B
↕	014	Water-skiing - Collision	Rem	Sev	Min	Mod	B	Rem	Sev	Min	Mod	B
↕	015	Water-skiing & wakeboarding wash	Fre	Min	Min	Min	B	Fre	Min	Min	Min	B
↕	016	Embarkation and disembarkation (drowning)	Rem	Sev	None	None	B	Rem	Sev	None	None	B

Direction of Change	Hazard	Title	Previous Assessment					New Assessment				
			Prob	Severity			Cat	Prob	Severity			Cat
				Pers	Env	Ass			Pers	Env	Ass	
	017	Motor cruisers and rowers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
↔	018	Sailing yachts	Fre	Min	None	Min	B	Fre	Min	None	Min	B
↔	019	Dinghy Sailing	Pro	Mod	None	Min	B	Pro	Mod	None	Min	B
↔	020	Navigating Small Craft in Isolation	Pro	Mod	None	Min	B	Pro	Mod	None	Min	B
↔	021	Flood alleviation scheme	Prob	Min	Min	Mod	B	Prob	Min	Min	Mod	B
	022	Swamping	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
↔	023	Medical Emergencies	Pro	Min	None	None	B	Pro	Min	None	None	B
↔	024	Water borne diseases	Rem	Mod	Min	None	B	Rem	Mod	Min	None	B
	025	Boat Testing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
↔	026	Obstructions to Navigation	Fre	Min	Min	Mod	B	Fre	Min	Min	Mod	B
↔	027	Passage Through Great Yarmouth	Fre	Mod	Min	Mod	B	Fre	Mod	Min	Mod	B
↔	028	Dredging and River Maintenance Works	Rem	Min	Min	Min	C	Rem	Min	Min	Min	C
↔	029	Power Lines	Rem	Sev	None	Min	B	Rem	Sev	None	Min	B
↔	030	Ice	Pro	Mod	None	Min	B	Pro	Mod	None	Min	B
↔	031	Embarkation and disembarkation (falling)	Fre	Mod	None	None	B	Fre	Mod	None	None	B
	032	Channel Markers	Freq	Min	Min	Min	B	Freq	Min	Min	Min	B
↔	033	Man Made Obstructions	Pro	Min	Min	Mod	B	Pro	Min	Min	Mod	B
↔	034	Extreme Weather Conditions	Pro	Mod	Min	Mod	B	Pro	Mod	Min	Mod	B
	035	Kite Surfing and Parascending	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	036	Stand up Paddle boarding	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Direction of Change	Hazard	Title	Previous Assessment					New Assessment				
			Prob	Severity			Cat	Prob	Severity			Cat
				Pers	Env	Ass			Pers	Env	Ass	
	037	Kite Surfing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	038	Ringo's and Inflatable equipment towed at speed	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
↕	039	Punting (Skipped)	Rem	Mod	none	Min	B	Rem	Mod	none	Min	B
↕	040	Wild Fowling (Gun Punting)	Ex Rem	Sev	Min	Min	B	Ex Rem	Sev	Min	Min	B
↓	041	Rowing coaching Vessels	V fre	Min	Min	Mod	A	freq	Min	Min	Mod	B
↕	042	Trawling on Breydon Water	Rem	Min	Min	Min	C	Rem	Min	Min	Min	C
↕	1L	Livestock	Ex Rem	Maj	None	Min	B	Ex Rem	Maj	None	Min	B
↕	2L	Adverse Weather	Pro	Mod	None	None	B	Pro	Mod	None	None	B
↕	3L	Ground Conditions	Fre	Mod	None	None	B	Fre	Mod	None	None	B
↕	4L	Fall from Height	Rem	Mod	None	None	B	Rem	Mod	None	None	B
↕	5L	Furniture	Ex Rem	Min	None	Min	C	Ex Rem	Min	None	Min	C
↕	6L	Structures	Ex Rem	Mod	None	Min	C	Ex Rem	Mod	None	Min	C
↕	7L	Trees	Ex Rem	Maj	Min	Min	B	Ex Rem	Maj	Min	Min	B
↕	8L	Vegetation	Pro	Min	None	Min	B	Pro	Min	None	Min	B
↕	9L	Motorised vehicles and bicycles	Rem	Sev	None	None	B	Rem	Sev	None	None	B
↕	10L	Giant Hogweed	Pro	Mod	Min	None	B	Pro	Mod	Min	None	B
↕	11L	Litter	Ex Rem	Maj	Min	None	B	Ex Rem	Maj	Min	None	B
↕	12L	Angling	Rem	Min	None	Min	B	Rem	Min	None	Min	B

Direction of Change	Hazard	Title	Previous Assessment					New Assessment				
			Prob	Severity			Cat	Prob	Severity			Cat
				Pers	Env	Ass			Pers	Env	Ass	
↕	13L	Power Lines	Ex Rem	Maj	None	Min	B	Ex Rem	Maj	None	Min	B
↕	14L	Fire	Ex Rem	Maj	Min	Min	B	Ex Rem	Maj	Min	Min	B

4.4 Of the 59 recorded hazards, 0 are a Category A hazard, 46 are Category B hazards, 4 are Category C hazards and 9 are Closed. On the basis of the worst-case impact, the hazards are distributed by Risk Classification as shown in

Table 4 below.

4.5 All hazards are considered to be managed to an “as low as reasonably practicable” level.

Likelihood \ Severity	Extremely Remote	Remote	Probable	Frequent	Very Frequent
Catastrophic	B 0	A 0	A 0	A 0	A 0
Severe	B 1	B 7	A 0	A 0	A 0
Major	B 5	B 2	B 0	A 0	A 0
Moderate	C 1	B 5	B 11	B 7	A 0
Minor	C 1	C 2	B 3	B 3	B 2

Table 4: Hazard distribution by assessment

5 Updated Hazard Log

5.1 The discussions and decisions of the meeting were recorded and documented in a spreadsheet, the Hazard Log, a summary of which is set out in Table 3. A full copy of the Hazard Log is available on request.

5.2 The Hazard Review Action Plan is set out in Appendix 1.

- 5.3 The Boat Safety Management Group will monitor progress of the hazard Review Action plan and updates will be brought to this committee.
- 5.4 The updated Hazard Log will be rolled into a formal update of the Broads Authority Safety Management System (SMS) later in the spring of 2016. Other changes to the SMS include:
- Updates to key job descriptions
 - Reference to site checking procedure
 - Other minor editorial corrections

6 Recommendations and Conclusions

- 6.1 The group considered a proposal to amend the frequency of formal review of the hazard log to a three year cycle. It was agreed that the log and mitigations were mature and that the log was subject to continual review by the Boat Safety Management Group. It is recommended that the hazard log remains under continual review, and is subject to a formal Stakeholder Review in spring 2019 and then every three years from the date of publication of the report subject to member views, the Safety Management System will also be updated to reflect this change.
- 6.2 It is concluded that of the 50 active Hazards 50 have been declared ALARP.
- 6.3 It is recommended that the Hazard Review Action Plan (Appendix 1) is implemented.

Background papers:	Nil
Author:	Steve Birtles
Date of report:	5 April 2016
Broads Plan Objectives:	NA4.2
Appendices:	APPENDIX 1- Hazard Review Action Plan

Issue 1		Date	March 2016		APPENDIX 1		
2015/16 Hazard Review Action Plan							
Hazard		Description	Action	Action	Target Compl Date	Progress to Date	Completed
Cat	No.						
B	002	Powered Craft Speeding	Fines and prosecutions need to be publicised more to deter.	LB	Oct 2016		
B	003	Inexperienced Helmsmen	Additional signage to be considered on the Lower Yare to warn of shelving near to bank	SB/LB	Aug 2016		
B	033	Man Made Obstructions	River Chet channel markers recommendation from the group to remove the channel markers as now vegetation is established on the bankside the marker posts are now a greater hazard than the bank. BA to approach Environment agency to remove	SB/MW	May 2016		
B	010	Bridges	Consideration to be given to additional advance warning signage on the approach to some bridges due to reduced visibility/ sight line	SB/LB	June 2016		
B	026	Obstructions to Navigation	Due to the increase in weeded areas on some Broads it was recommended to contact Canoe England for guidance	AC	June 2016		