

Report on the investigation of the
Brenscombe Outdoor Centre
canoe swamping accident
in Poole Harbour, Dorset
on
6 April 2005

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Extract from
The United Kingdom Merchant Shipping
(Accident Reporting and Investigation)
Regulations 2005 – Regulation 5:

“The sole objective of the investigation of an accident under the Merchant Shipping (Accident Reporting and Investigation) Regulations 2005 shall be the prevention of future accidents through the ascertainment of its causes and circumstances. It shall not be the purpose of an investigation to determine liability nor, except so far as is necessary to achieve its objective, to apportion blame.”

NOTE

This report is not written with litigation in mind and, pursuant to Regulation 13(9) of the Merchant Shipping (Accident Reporting and Investigation) Regulations 2005, shall be inadmissible in any judicial proceedings whose purpose, or one of whose purpose is to attribute or apportion liability or blame.

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GLOSSARY OF ABBREVIATIONS AND ACRONYMS

AALA	-	Adventure Activities Licensing Authority
AHOEC	-	Association of Heads of Outdoor Education Centres
BBC	-	British Broadcasting Corporation
BCU	-	British Canoe Union
BOC	-	Brenscombe Outdoor Centre
grp	-	glass reinforced plastic
HMCG	-	Her Majesty's Coastguard
hp	-	horsepower
HR	-	Human Resources
H&S	-	Health and Safety
kW	-	kilowatt
MCA	-	Maritime and Coastguard Agency
NGB	-	National Governing Bodies
OEAP	-	Outdoor Education Adviser's Panel
RIB	-	Rigid-hulled Inflatable Boat
RNLI	-	Royal National Lifeboat Institution
RYA	-	Royal Yachting Association
SAPOE	-	Scottish Association of Providers of Outdoor Education
VHF	-	Very High Frequency

SYNOPSIS



On 6 April 2005, a group of middle managers taking part in a corporate team-building exercise in Poole Harbour, ended up in the water after their canoes were swamped in choppy seas. The group, comprising 8 men and women, boarded an accompanying safety boat in an attempt to escape the cold water and to aid their recovery by a passing vessel. The safety boat also capsized.

The group had joined the Brenscombe Outdoor Centre (BOC) in Corfe Castle, Wareham, Dorset on 3 April 2005 to take part in a course managed by Leadership Direct, a company specialising in corporate leadership and team-building outdoor courses. BOC was contracted by Leadership Direct to provide specialist safety instructors for a number of the planned exercises.

The group was divided into two teams, and on 6 April, one of the teams was programmed to cross Poole Harbour from Bramble Bush Bay to Cleavel Point, a distance of about 1.65 miles. The crossing was to be made by rafting two canoes together, using spars and ropes. The weather forecast for the Poole area at the time was for a south-westerly wind, force 4-5 becoming force 5-6. Despite the poor forecast the safety instructor did not raise any objections regarding the planned exercise.

The early stages of the exercise were beset by problems. A wheel fell off the safety boat trailer as it was being driven to Cleavel Point, and the ensuing delay was compounded as one of the two canoes which were being towed to Bramble Bush Bay, capsized and had to be righted. The instructor finally arrived at Bramble Bush Bay at about 0935. The exercise had been due to start at 0900. Since schedule timing was a high priority for the clients, the 30 minute delay put the instructor under additional pressure.

Because of the freshening wind conditions, BOC's director arranged for an additional instructor to be in the safety boat.

After a safety briefing, the rafted canoes entered the water between 0945 and 0950.

Although the wind was at force 5, and the sea surface choppy, the safety instructor once again raised no objections to continuing with the exercise. After embarking the canoes, the team was given instructions on how to paddle and on the transit to be taken.

At about 1020, the group lost the lee protection of the land and started to drift towards the deep water of the South Deep channel. With the elements against them, the canoes failed to make headway and the crews began to quickly tire. The instructors decided to take the canoes under tow and continue across the open water instead of taking the safer option of turning back.

Because of the towing configuration, the canoes started to yaw badly and take in water. Soon after, three large waves swamped the windward canoe, which then sank. The remaining canoe became swamped soon afterwards. The instructors removed the joining spars in preparation for righting one of the canoes, and BOC was informed of the situation by mobile telephone. As the canoe was partially emptied, the crew tried to climb back into it, causing it to capsize once again.

Meanwhile, the canoes and safety boat continued to set towards deep water. The instructors tried to prevent this by dropping two anchors. One of these eventually snagged a racing buoy, which held them at the southern edge of the South Deep channel. The situation was becoming beyond the instructors' control and BOC was informed that the group needed help. At the same time, the oil rig supply vessel, *Furzey Squirrel*, was seen and the instructor waved his arms to indicate a distress. The vessel headed towards the group and its master alerted the harbour authorities to the situation. The harbour authorities then contacted the coastguard.

Neither of the instructors nor BOC contacted the emergency services. BOC did instruct two rigid inflatable boats belonging to the centre to proceed to the area and provide assistance, knowing that *Furzey Squirrel* had been alerted and was at close quarters. Unfortunately they were operating 7 miles from the accident scene.

In an effort to ease transfer to *Furzey Squirrel*, and to warm the team up, the safety instructor decided to put the entire group onboard the safety boat. The additional weight caused the boat to swamp, plunging everyone into the water, and very soon after it capsized. Fortunately, *Furzey Squirrel* then arrived, and by 1105 the group was safely onboard the vessel. They were subsequently transferred to the Poole lifeboat and then to Poole General Hospital. None of the group suffered injury and they were discharged early in the afternoon.

The MAIB investigation found that BOC's management team had not undertaken a specific risk assessment for this exercise, so the risk of swamping had not been considered. Consequently, no control measures had been put in place to prevent it happening. The likelihood of an accident was compounded by the safety instructor deciding to undertake the crossing despite unsuitable weather conditions. Opportunities existed for both instructors to abandon at various points during the exercise, but these were not properly considered. The reason for this can be partly explained by the safety instructor's lack of experience in leading this particular exercise, and his determination to recover lost time.

Recommendations have been made to BOC, The Adventure Activities Licensing Authority and other associated agencies regarding the benefits of validating risk assessments by scenario-based training, and the need to become more influential in exercise planning when a "third party" manages the course.

Further recommendations have been made regarding the need for prior agreement of an alternative plan should an exercise need to be aborted, the importance of recognising when a "normal" recovery situation develops into an emergency and the leader's empowerment to alert the emergency services.

SECTION 1 - FACTUAL INFORMATION

1.1 PARTICULARS OF CANOE SWAMPING ACCIDENT

Vessel details

Registered owner for canoes and safety boat : Brenscombe Outdoor Centre, Corfe Castle, Wareham, Dorset BH20 5JG

Canoes

Type : Coleman 17 feet Canadian Canoe

Construction : Plastic

Length overall : 17.75 feet

Beam : 3 feet

Displacement : 80 lbs

Seats : 4

Safety Boat

Type : RYDS 425R

Identification number : 050-056-4775

Construction : Plastic

Length overall : 4 metres

Beam : 1.6 metres

Capacity : 4 persons

Maximum engine output on identification plate : 7.4 kW (9.9 hp)

Fitted outboard engine : Mariner 15 hp (11.2 kW)

Accident details

Time and date : 1000 UTC + 1 on 6 April 2005

Location of incident : 50°40'.643N 001° 57'.982W – 0.5 mile south of Brownsea Island, Poole Harbour

Persons on board canoes : 8

Persons onboard safety boat : 2

Injuries/fatalities : None

Damage : Salt water contamination of engine

Figure 1



Brenscombe Outdoor Centre

1.2 BRENSCOMBE OUTDOOR CENTRE

(All times are UTC + 1)

Situated near Corfe Castle, Wareham in Dorset, Brenscombe Outdoor Centre (BOC) (**Figure 1**), offers a wide range of outdoor facilities onsite, and additional areas nearby for water activities, rock climbing and abseiling. Leisure activities and training courses cater for all levels of experience, and typically range from 1-day programmes for school children, to 1-week corporate team-building and leadership courses.

BOC was the facilitator for the course during which the accident occurred. A separate company, Leadership Direct, acted as “third party” managers for the course client.

1.3 LEADERSHIP DIRECT, CLIENT AND COURSE

Founded in 1994, Leadership Direct specialises in designing and managing corporate training courses aimed at developing its clients’ leadership and team-building skills. For many years, Leadership Direct had used BOC’s facilities, supported by its own team of consultants and, occasionally, by BOC’s specialist safety instructors. When designing the course, BOC agreed with Leadership Direct the programme content, operating procedures and execution. A post programme review was routinely undertaken and necessary modifications agreed.

Leadership Direct’s client was a large multinational shipping company. The course delegates, comprising 16 male and female middle managers joined BOC on Sunday 3 April 2005. The course was planned to finish on Friday 8 April 2005. The delegates were accompanied by their Human Resources (HR) director, who assisted Leadership Direct to manage the course and evaluate the delegates’ performance.

The course was designed to “stretch” both individuals and teams; the basis for success was through the principle of “Challenge by Choice”. This meant that emphasis was put on completion of the task, utilising team, management and personal skills. There was no apparent pressure for the delegates to perform; only to commit to a successful result for their team.

The course content was agreed by BOC, but programme changes were largely managed and agreed between Leadership Direct and their clients. There was little input from BOC, despite daily meetings between Leadership Direct and BOC’s course co-ordinator.

1.4 ACCIDENT BACKGROUND

1.4.1 Exercise aim

The accident occurred during a group exercise in Poole Harbour. The aim of the exercise was for the 8-strong team, under the designated leader, to make a water crossing using a multi-hulled vessel constructed from two canoes. The exercise was planned to start at 0900 with a 1 hour target time for completion. A copy of the water crossing exercise criteria is at **Annex A**.

1.4.2 Exercise area

The exercise start point at Bramble Bush Bay is mainly gently shelving sand (**Figure 2**). The bay is shallow and offers plenty of shelter. However, once past Jerry's Point, the lee of the land is lost and there is a risk of craft being blown by a south/south-westerly wind into the deep water channel known as the South Deep. Lee protection is gained once more after passing Goathorn Point leading onto the final leg to Cleavel Point.

The straight-line transit from Bramble Bush Bay to Cleavel Point is approximately 1.65 miles. The chart extract of Poole Harbour and surrounding areas is at **Figure 3**. A chartlet, identifying the exercise area, is at **Figure 4**.

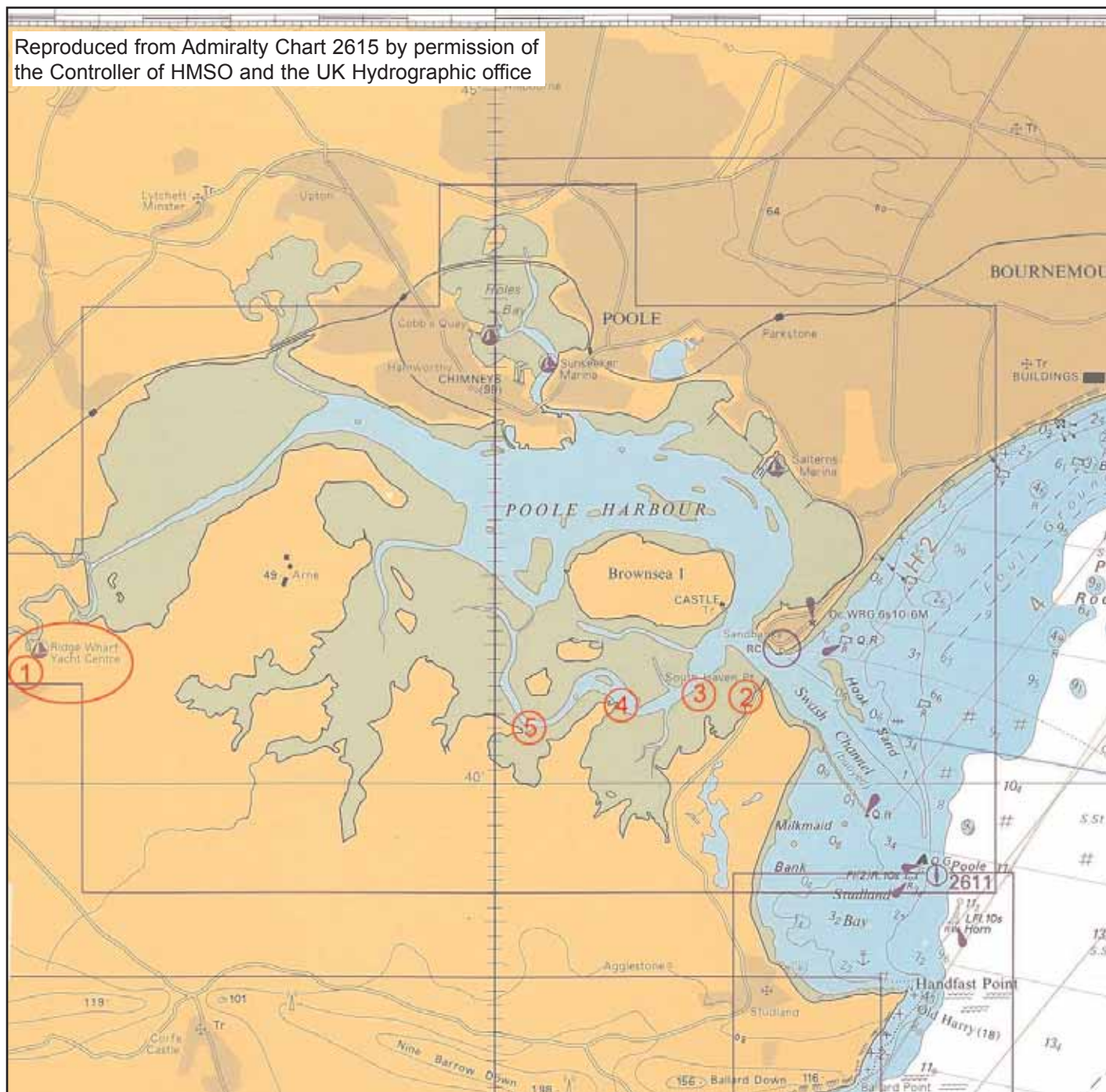
Figure 2



Launching point - Bramblebush Bay

Figure 3

Reproduced from Admiralty Chart 2615 by permission of the Controller of HMSO and the UK Hydrographic office



- 1 Ridge Wharf location of BOC's RIB
- 2 Bramblebush Bay (launching point)
- 3 Jerry's Point
- 4 Goathorn Point
- 5 Cleaval Point

1.5 NARRATIVE

During the early evening of 5 April 2005, BOC's exercise safety instructor obtained a weather forecast for the Poole Bay area, covering the following day. A south-westerly force 4-5 wind becoming force 5-6 was predicted. The sea state was expected to be moderate, with a sea water temperature of 9°C. High tide at Poole Quay was due at 1200, and the tidal stream in the vicinity of the exercise was about 0.3 knot.

Soon after obtaining the forecast, the safety instructor discussed the broad outline of the exercise with Leadership Direct. An alternative exercise to the crossing was very briefly discussed, which involved constructing the vessel and operating within the protected confines of Bramble Bush Bay. However, there was no emphasis put on this alternative plan and the safety instructor's perception was that the team was expected to make the crossing.

The exercise team was then given instructions on knot tying and lashing techniques. They were also advised that they were to wear multiple layers of clothing for the duration of the exercise. The team was informed that BOC would provide them with waterproofs and buoyancy aids for use during the exercise.

At 0800 the following day, the safety instructor and a colleague left BOC for Cleavel Point, in a minibus, towing the exercise safety boat on a trailer. It was their intention to launch the safety boat and use it to tow the 2 x 17 feet Canadian canoes, which were stowed at Cleavel Point, around to the exercise start point at Bramble Bush Bay. Unfortunately, one of the safety boat trailer wheels fell off; this was reported to BOC, who arranged for a replacement trailer.

Just before 0900, the exercise team, Leadership Direct and the client's HR director arrived at Bramble Bush Bay. Expecting to see the safety boat, canoes and instructors waiting for them, Leadership Direct contacted BOC about the programme delay and was advised of the difficulties with the trailer.

The safety boat left Cleavel Point at about 0905 with the two canoes in tow, in line astern. The wind was at force 2-3 and the sea was described as choppy, but the instructor was not overly concerned with the conditions. In an attempt to make up for lost time he towed the canoes at speed. As a result, one of them capsized. He was further delayed as he emptied the canoe of water and re-configured the towing arrangement. Now under more time pressure, he eventually arrived at Bramble Bush Bay at about 0935.

Because of programme slippage, two additional instructors were sent from BOC to Bramble Bush Bay. The aim was to help recover lost time by assisting the construction of the rafted canoes and for one of the additional instructors to accompany the safety instructor to provide extra support should the weather conditions deteriorate.

1.5.1 Pre-water preparations

The instructors helped to connect the canoes across the midships sections, using two large wooden spars which were secured by ropes to the seat supporting structures. The canoes' stems and sterns were tightly lashed together using short ropes (**Figure 5**).

The team's buoyancy aids were then checked for correct fitting, and they were advised that the safety boat would remain in close proximity throughout the crossing. No advice was given on the action to be taken in the event of swamping or capsizing. However, Leadership Direct did suggest to the team leader that he should keep close to the coastline during the transit.

1.5.2 Transit

The canoes were launched between 0945 and 0950, at which time the wind strength had increased to about force 5 and the sea surface was disturbed about 200 metres from the shore. Despite this, and being conscious of the delays already incurred, the safety instructor decided to continue with the exercise. None of the team members, Leadership Direct or their client raised any concerns about the conditions.

Figure 5



Rafted canoe arrangement

Following instruction on paddling and steering techniques, the canoes headed across open water towards Green Island, which is to the north of Cleavel Point. The additional instructor advised the team to take this track despite it being outside the 250 metre limit from shore requirement as set out in BOC's canoeing risk assessment.

On passing Jerry's Point, the protection from the lee of the land was lost and, with it, the wind increased from the south-south-west. Now extremely tired, the team made virtually no progress. At about 1020, the canoes started to crab badly and the instructors decided to take them under tow.

A short towing bridle was fitted to the stern of the safety boat, and a towing line was connected between the bridle and the canoes' stem rope by bowline knots. This enabled the towline to move freely along both the bridle and stem rope. The towing arrangement is shown in **Figures 6 and 7**. In an effort to make up for lost time, the canoes were towed across open water towards Goathorn Point. The option to return to Bramble Bush Bay was not considered, despite the obviously deteriorating weather conditions.

Because of the heavy chop on the water surface, the canoes were towed slowly. At about 1030, the canoes started to yaw badly under the influence of the wind and tide; the team shouted to the instructors that the canoes were "taking in water." The safety boat went alongside the canoes and each team was given a bailer to remove the water. In taking "way off" the tow, the canoes started to set towards the South Deep channel. Soon after, the weather conditions began to worsen and the sea state became more confused. Between 1035 and 1040, the windward canoe began taking in more water, its freeboard was reducing and the team appeared to have stopped bailing.

At about 1045, when about 1.5 cables north-west of Jerry's Point, the windward canoe was hit by a succession of three large waves. The rafted arrangement was unable to ride over the waves, and the canoe was quickly swamped. It sank just below the surface of the water. This resulted in the second canoe being pulled down also. By that time, several of the team were swimming in the water and two members were standing up, the water being about 5 – 5½ feet deep. The instructors told the team members to stand up, if they could, and to all remain with the canoes.

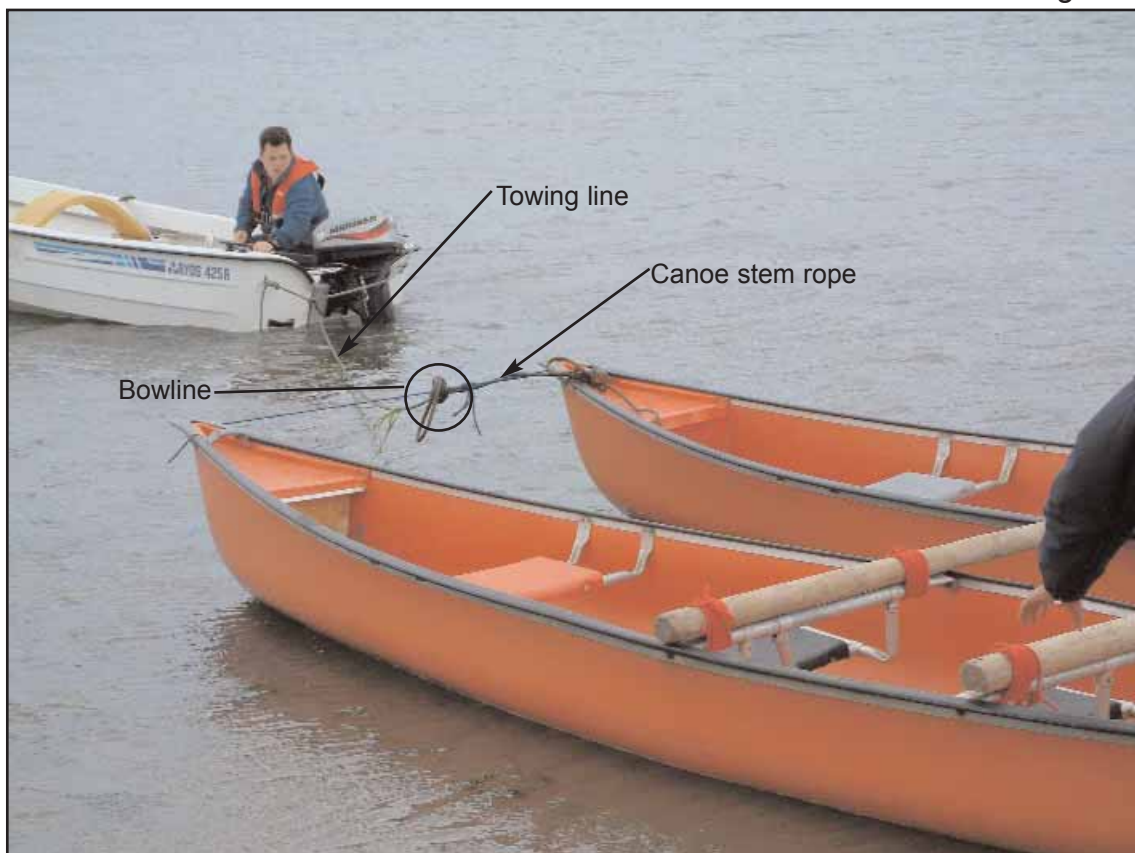
Not overly concerned, the instructors began to treat the situation as a routine canoeing self-rescue. They were, however, surprised at what had happened because the risk of swamping had never been considered, as this was the first time this had happened in 13 years' experience of operating this exercise in the harbour. To empty the canoes of water, the instructors started to untie the connecting spars. As they did so, the safety boat and canoes continued to set northwards towards deep water.

Figure 6



Safety boat bridle and towing line arrangement

Figure 7



Canoe stem rope and towing line arrangement

One lady, who suffered from asthma, began to feel unwell and was pulled into the safety boat, where she soon recovered. In an effort to stop the vessels drifting, one of the safety boat's anchors was let go, but it failed to grip the mud bottom.

At 1050, the additional instructor contacted BOC's director by mobile telephone and advised him of the situation, indicating that he was hoping to get the team ashore. He did not explain how he would achieve this, and the safety instructor was unaware of this intention. The conversation was relayed to Leadership Direct who was also talking to BOC's director in an attempt to locate the team.

The instructors managed to release the canoe joining spars but left the canoes connected by the stem rope. Now very cold, the team members clung to the sides of the safety boat as one of the canoes was partially emptied of water and righted. Unfortunately, in the absence of instructions to the contrary, the team members immediately started to climb back into the canoe, causing it to capsize and tipping the team back into the water.

The option of towing the canoes closer to shore, although difficult, was not discussed, but the safety instructor did consider tying the canoes either side of the safety boat. He hoped that this "trimaran" configuration would improve stability. Before he could do this, a second anchor was let go from the safety boat which snagged on the moorings of a racing mark known as the "Natwest Buoy" just to the south of the South Deep channel. Fortunately this stopped the drift of the safety boat and canoes.

1.5.3 Rescue

At 1056, the second instructor advised BOC of the deteriorating situation and that they now required assistance. Neither BOC's director, nor the instructors, contacted the coastguard despite a shared realisation that the situation had worsened. Instead, BOC's director contacted instructors who were operating two of the Centre's RIBs at Ridge Wharf, on the River Frome, which was about 7 miles away. He instructed them to proceed immediately towards the canoes, having been informed by the instructors that they had been seen by the oil rig supply vessel, *Furzey Squirrel* (**Figure 8**). The vessel was making her way from Furzey Island to British Petroleum's Emergency Response Base in Poole Harbour. As it rounded number 11 stake in the South Deep channel, the master saw BOC's safety instructor standing in the safety boat. He was waving his arms to indicate distress. The master immediately contacted Poole Harbour Control to advise them of the situation. They, in turn, contacted HMCG at Portland, who activated the Poole main and inshore lifeboats.

The wind by that time was south-westerly force 5-6, the sea was getting choppy, and, although in good spirits, the team were becoming very cold. The safety instructor, confident that *Furzey Squirrel* had seen them, instructed the



Supply vessel *Furzey Squirrel*

whole team to get into the safety boat to warm them up and to aid transfer to *Furzey Squirrel*. In doing so, he far exceeded the boat's 4-man capacity. Overloaded and shipping water, the safety boat capsized, plunging the team members, their personal kit, instructors and mobile telephone into the water.

At about 1110, *Furzey Squirrel* manoeuvred alongside the group, who were by now in the South Deep channel. Within 5 minutes, everyone had been recovered, accounted for and given hot drinks and some dry clothing and blankets.

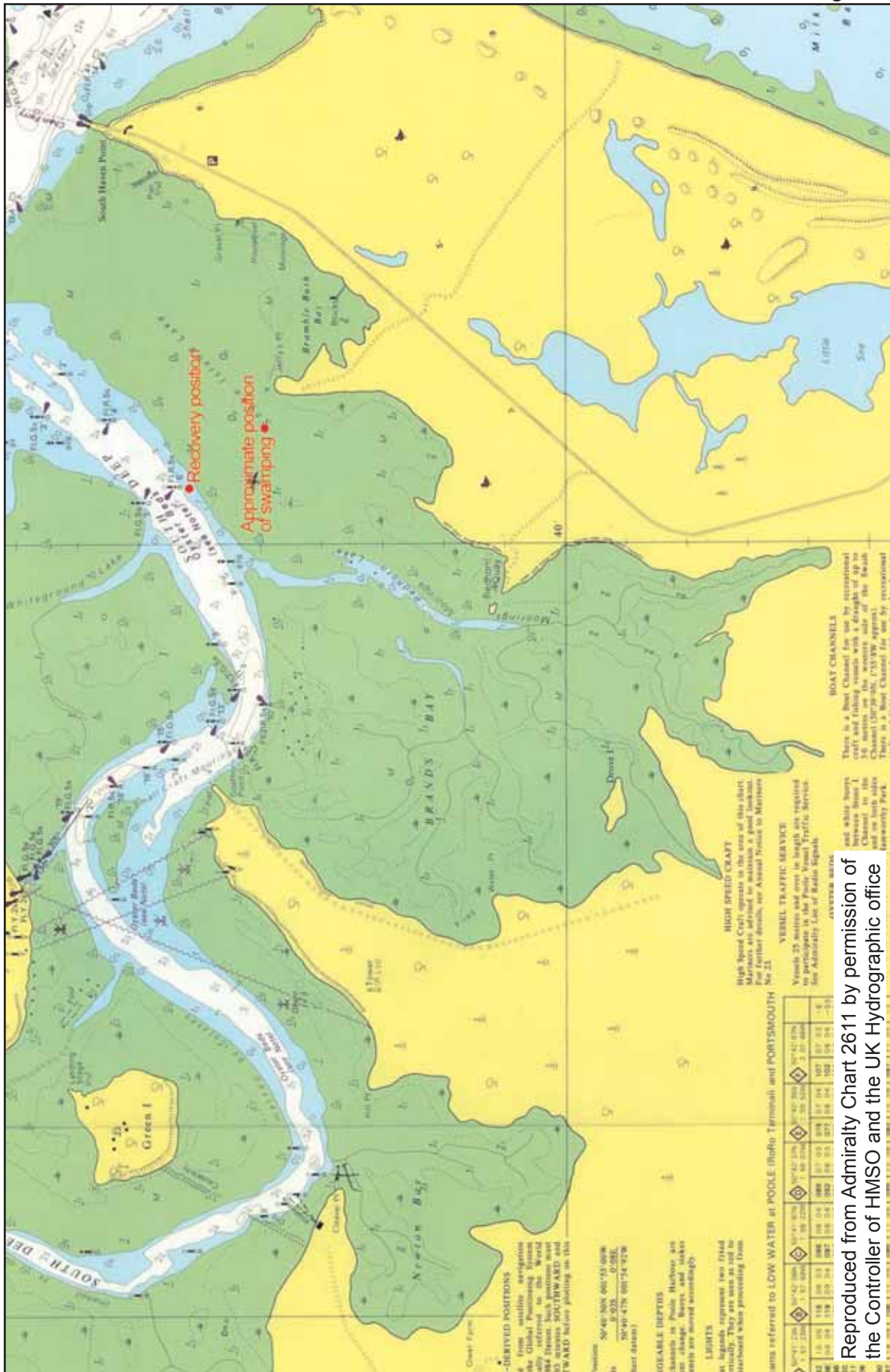
As the safety instructor advised BOC's director of the situation, the master of *Furzey Squirrel* confirmed with the lifeboat coxswains that the group had been accounted for. At 1128, the group were transferred to the Poole lifeboat and, shortly after, they were landed at Poole Bridge and then taken to Poole General Hospital for medical checks.

Although they were in the cold water for about 20 minutes, only the asthmatic lady suffered ill effects as her panic attack partially affected her breathing. Despite this, she and the rest of the team were able to resume their training activities later that afternoon.

At about 1120, BOC's RIBs arrived from Ridge Wharf and assisted the Poole inshore lifeboat to recover the team's personal effects, canoes, and safety boat and transfer them to Bramble Bush Bay.

The accident location and recovery points are indicated at **Figure 9**.

Figure 9



Reproduced from Admiralty Chart 2611 by permission of the Controller of HMSO and the UK Hydrographic office

1.5.4 Client's reaction

The client decided, in agreement with Leadership Direct, to terminate the course, and the delegates left BOC during the afternoon of 7 April 2005.

1.6 BOC STAFF

1.6.1 Staff

There are five full-time instructors at BOC who have been with the company for between 5 and 7 years. They provide expertise across the full range of activities. All hold nationally recognised qualifications and can be considered specialists in their respective disciplines.

To cope with the busy summer programme between April and October, up to 12 appropriately qualified seasonal staff supplement the core team of instructors.

1.6.2 Safety instructor

The 21 year old safety instructor had spent three seasons as an instructor at BOC and, although he had previously accompanied other instructors on this particular exercise, it was the first time he had assumed full responsibility. However, he had wide waterborne experience, having been kayaking from an early age. He held a BCU Level 2 Kayak Coach certificate, and had passed the BCU's Kayak 3 Star and Sea Kayak 4 Star tests. He had also passed the BCU's Canoeing Safety Test and was awarded the RYA's Safety Boat certificate in March 2004. He also held a number of other adventure activities qualifications.

The instructor left BOC in September 2004 to join Calshot Activities Centre near Southampton. He re-joined BOC as one of the full-time instructors at the end of March 2005. Apart from minor administrative adjustments, little had changed at BOC during the intervening period, and it was agreed with the Centre's director that there was no need for further mentoring.

1.6.3 Additional instructor

The additional instructor in the safety boat had previously spent 24 years in the British Army, leaving as a staff sergeant. Throughout that time, he had been involved in adventure training. He joined BOC in 1998 and was the Centre's Activities Manager. He held a BCU Level 2 Canoeing Instructor certificate with 4 Star endorsement and a Level 2 Powerboat coxswain qualification. A number of other adventure activity qualifications were also held.

The instructor had been previously involved with courses managed by Leadership Direct.

1.7 WATERBORNE ACTIVITY QUALIFICATIONS

The minimum qualifications required to conduct waterborne activity training, and instructor to trainee ratios, are laid down in the Health and Safety Commission's "Guidance to the Licensing Authority on The Adventure Activities Licensing Regulations 1996". Relevant extracts are at **Annex B**. Evidence of competence can also be demonstrated through equivalent qualifications issued by European or other nations, and through appropriate "in-house" training and experience.

Water area definitions and minimum qualifications guidance are provided in the BCU Coaching Directory and in the BCU's publications CG/005/02/1 – "Check List for the Guidance of Relevant Authorities" and in CG/002/02/2 – "Tests and Awards Synopsis". Relevant sections of the latter two publications are at **Annex C** and **Annex D** respectively.

1.8 CANOES AND SAFETY BOAT

1.8.1 Canoes

The two canoes used for the exercise had been purchased by BOC, secondhand, 8 years prior to the accident. They were plastic, 17 feet long Coleman Canadian canoes with a beam of 3 feet. They weighed 80 lbs, were of open construction and fitted with small buoyancy tanks at the stem and stern. There were four seats, and the canoes were propelled using single paddles. When the canoes are fully loaded with four adults, the freeboard is approximately 7 inches.

1.8.2 Safety boat

The GRP safety boat was a model RYDS 425R constructed in Norway – (**Figure 10**). It was 4 metres in overall length and had a beam of 1.6 metres. The identification plate (**Figure 11**) stated that the boat had a maximum capacity of four persons and a maximum power of 7.4kW. The vessel was fitted with a Mariner outboard engine developing 11.2kW. However, this made no contribution to the accident as, during towing, the boat's speed was slow. The boat was purchased locally in June 2004, and this was the first time it had been used as a safety boat for this type of exercise.

A small aluminium boat of similar dimensions to the RYDS 425 and a Ribeye 750 Sport - MCA Coded Cat 4 RIB for 12 persons, had previously been used as safety boats. When Leadership Direct became aware that the RIB was unavailable on this occasion, concerns regarding the RYDS 425's suitability as a safety boat were raised with BOC. BOC assured Leadership Direct of the boat's fitness for purpose, and this was passed on to Leadership Direct's client.

Figure 10



Safety boat - RYDS 425R

Figure 11



Safety boat identification plate

The GRP safety boat was equipped with the following, in accordance with BOC's risk assessment in force at the time:

15 hp Mariner engine	Mobile phone
Fuel tank	Buoyancy aids for crew
Oars and rollocks	2 anchors and cables (only one required by the risk assessment)
Tool kit	Cut-off cord
2 x 10m towlines	Bailers
Knife	Waterproofs
Survival tent	First-aid kit

Note:

The risk assessment stated that either a VHF radio or mobile telephone was to be carried. The carriage of emergency flares was not included.

1.9 BOC TRAINING ARRANGEMENTS

1.9.1 Individual training

On joining BOC, instructors are required to provide evidence of their National Governing Body (NGB) awards and an in date first-aid certificate. Each instructor is then allocated a mentor who is experienced in the activity and the local conditions. Following a period of mentoring, completion of BOC's "Practical Training and Assessment Form" and discussion with senior staff, an instructor, where appropriate, is awarded a BOC endorsement to his NGB qualification. The endorsement serves as BOC's approval for an instructor to lead sessions in that activity.

The training arrangements were clearly laid out in BOC's "Staff Induction Booklet" and in the company's Code of Practice and Safety Policy 2005. A copy of those activities requiring BOC endorsement from the Code of Practice is at **Annex E**.

Every instructor was required to record each training activity in his/her "Personal Training Log".

1.9.2 Staff continuation training

Staff continuation training was undertaken on an occasional basis, however there was no record of a structured training programme, especially with respect to water-based activities.

1.10 CODE OF PRACTICE AND SAFETY POLICY

1.10.1 Documentation

BOC had a comprehensive Code of Practice and Safety Policy, the updated version of which was published on 30 March 2005. Each activity is identified with the associated:

- Significant hazards
- Relevant qualifications
- Ratio of instructor to student
- Activity site details
- Activity equipment details
- Session outline
- Specific briefing/session details.

1.10.2 Rafted canoes – risk assessment

The rafted canoe exercise was considered by BOC to be a canoeing activity. However, Leadership Direct interpreted it to be a rafting exercise.

Neither the canoeing/kayaking, nor the rafting risk assessments covered this particular exercise. Copies of the assessments, including those for the safety boat, which were in force at the time of the accident, are at **Annex F**.

The implications of a non-specific risk assessment and related issues associated with the rafted canoe activity are discussed in Section 2.

1.11 POOLE HARBOUR COMMISSIONERS

Poole Harbour Commissioners are responsible for the management of marine safety in Poole Harbour. Paragraph 1.2.1 of the Port Marine Safety Code states:

“Harbour authorities have a duty to take reasonable care, so long as the harbour is open for public use, that all who may choose to navigate it may do so without danger to their lives or property”.

Many local organisations regularly use Poole Harbour for waterborne activities. Although it was not BOC’s practice, other organisations do submit their risk assessments to the harbour authorities, who are able to comment and provide expert advice on local conditions.

1.12 LICENSING REQUIREMENT AND INSPECTIONS

1.12.1 Regulation

The Activity Centres (Young Person's Safety) Act 1995 required providers of certain adventure activities to undergo inspection of their management systems and become licensed. Licensing applies to those organisations who offer activities to under 18 year olds and who operate in a commercial manner.

Following on from the above Act, The Adventure Activities Licensing Regulations 1996 were brought into force. These were superseded on 9 June 2004 by The Adventure Activities Licensing Regulations 2004 under Statutory Instrument 2004, No 1359.

1.12.2 Adventure Activities Licensing Authority

The Adventure Activities Licensing Authority (AALA) is charged with inspecting activity centres and other activity providers on behalf of the Department of Education and Skills. AALA is guided on the interpretation of the regulations by the Health and Safety Commission's "Guidance to the Licensing Authority on The Adventure Activities Licensing regulations 1996 – The Activity Centres (Young Persons' Safety) Act 1995."

Activity providers are inspected and re-licensed at least every 3 years. However, AALA has the option of reducing the inspection frequency. In view of the complexity of BOC's operation, the inspection frequency has been reduced to every 2 years, in common with many other providers who offer a similar range of activities.

BOC was last inspected on 30 March 2005. A copy of the Inspection report is at **Annex G**. There were no issues identified during the inspection. A copy of the licence in force at the time of the accident is at **Annex H**.

1.12.3 Purbeck District Council inspections

Purbeck District Council is required to undertake a health and safety inspection of BOC adventure activities in accordance with the Health and Safety at Work Act 1974.

It last inspected BOC in October 2003. The company was given a Risk Category of B4, which identified a 3-yearly inspection requirement. With the exception of the need to update the H&S posters, no other issues were identified. A copy of the report dated 7 October 2003 is at **Annex I**.

1.13 OUTDOOR ACTIVITY FORUMS

There are two main influential forums that promote outdoor activity best practice and education. Both the following organisations and AALA are best placed to take forward recommendations which have an impact on the industry.

1.13.1 Association of Heads of Outdoor Education Centres (AHOEC)

The AHOEC was formed in 1963. Membership includes managers of multi-activity centres, including those in urban areas and centres that are equipped for those with special needs. Membership of the Association is widely regarded as a hallmark of ethical and quality management of the service and facilities provided.

1.13.2 Outdoor Education Adviser's Panel (OEAP) and Scottish Advisory Panel for Outdoor Education (SAPOE)

The OEAP and SAPOE comprise nominated representatives of Chief Education Officers, universities and colleges of England, Wales and Northern Ireland and Scotland respectively. The panels provide a forum for identifying, sharing and developing good practice in outdoor education. In both cases, a number of project working groups take forward specific tasks on behalf of the panels.

SECTION 2 - ANALYSIS

2.1 AIM

The purpose of the analysis is to determine the contributory causes and circumstances of the accident as a basis for making recommendations to prevent similar accidents occurring in the future.

2.2 CAUSE OF THE ACCIDENT

The accident was caused because BOC failed to recognise the risk of rafted canoes being swamped. It had been assumed that the configuration was inherently stable, so no control measures were in place to minimise the chances of swamping when the rafted canoes were being paddled or towed by another boat.

The accident was compounded because the instructors did not appreciate the risk of embarking ten adults into the four man capacity safety boat. This resulted in the boat becoming swamped and plunging the occupants into the water.

2.3 HUMAN FACTORS – DECISION-MAKING

2.3.1 Decisions

The MAIB analysed this accident to try to establish how human factors might have been a contributory factor. Untimely decision-making, inadequate assessment of the inherent risks, confusion over management responsibility in the safety boat, and a degree of mutual complacency between the instructors, all led to the escalation of the incident.

2.3.2 Pre-departure decisions

It was clearly understood that BOC had responsibility for exercise safety while the team were on the water. But, despite having obtained a marginal weather forecast the evening before the accident, the instructor did not raise any concerns over possible safety implications, or the suitability of the east to west transit route.

A lack of understanding of the possible consequences of the deteriorating weather led to the initial human factors failure that contributed to the accident, in that the instructor decided to attempt to complete the exercise by making the open-water transit. It is relevant that, when this decision was taken, BOC were aware that the wind conditions were not favourable and that the transit would require the canoe crews to make progress against strong winds across open, choppy water. The wind condition was the primary reason why the Director of BOC tasked a second instructor to accompany the safety instructor for the duration of the exercise.

The safety instructor appears to have failed to make an appropriate assessment of the risks associated with the planned transit. Owing to the earlier delays he had experienced, the decision to continue was made at a time when he believed he was under pressure to regain the schedule for the exercise. Moreover, he was not in a position to offer an alternative activity, believing that Leadership Direct may object to the cancellation. In fact, Leadership Direct had emphasised the importance of safety in the written brief for the exercise, and had agreed on previous occasions to abandon or modify exercises on the advice of other safety instructors.

In this case the written brief for the exercise (**Annex A**) did not include the circumstances when it would be necessary to adopt an alternative plan. Had it done so, and if the alternative had been specified, then the instructor might have reconsidered his options.

The instructor's anxiety was probably compounded by the fact that this was his first course as co-ordinator, and the first time he had assumed the full role of safety instructor for this exercise. It is possible that the arrival of the second instructor provided him with a degree of reassurance, and contributed to his decision not to abandon the exercise.

2.3.3 Second instructor's decisions

The second instructor joined the group as they were preparing for the crossing. In despatching him to join the exercise, BOC had not specified what his role was to be. He was of the opinion that decision-making responsibility for the activity lay with his colleague, although he did not discuss the issue with him. He was also reluctant to cancel the exercise. This might have stemmed from an uneasy working relationship with the course manager, and a consequent concern that he might subsequently be accused of cancelling the exercise unnecessarily.

2.3.4 Post departure decisions

The risk inherent in the exercise could have been reduced by ensuring that the raft remained within 250 metres of the shore, as was required by a recent change in BOC's procedures. However, it is likely that the instructors felt that this would have compounded the delays they had already suffered and felt pressure to choose the most direct route.

It is possible that they had already considered that, although the direct route would be challenging for the team, they still retained the option of taking them under tow to prevent additional loss of time. This represents a further failure to appropriately judge the risks, given that towing in the open water, in the prevailing weather conditions was later found to be an unsuitable option.

The final opportunity to avoid the accident was as the raft rounded Jerry's Point and the crew attempted to make progress without the protection of the lee. At that point, the instructors could have chosen to abandon the exercise and make directly for the shore. However, it appears that, for the reasons discussed above, they were reluctant to take this decision and felt committed to making the crossing. There is no evidence to suggest that they discussed abandoning the exercise at this point.

2.3.5 Post swamping decisions

It appears that the instructors consistently underestimated the level of risk throughout the planning and progress of the exercise. The evidence suggests that at no point, even after the second capsize, did they consider the situation to constitute an emergency. Because of this, and their high workload following the swamping, they were late in raising the alarm and did not alert the coastguard themselves, despite having access to a mobile telephone.

Throughout the accident, the instructors restricted their contact to their BOC colleagues. Moreover, BOC management did not gain a full understanding of the situation based on those calls because there was no management procedure in place to deal with the situation or ascertain its severity. Had there been, the emergency services would have been alerted to the deteriorating situation by management themselves. As it was, BOC was content to alert their own RIB crews, who were operating some 7 miles away, to provide assistance. By that time, the team had been in the water for 10-15 minutes; had they awaited assistance from the RIB, this time would have extended to 30 minutes, putting them at risk of hypothermia and possible fatalities. The emergency services only became involved when alerted by the master of the oil support vessel, *Furzey Squirrel*.

Neither instructor appears to have taken full control of the incident management. They were clearly working hard in an attempt to recover the situation without calling on outside assistance. It appears that, during the period that they were dealing with the swamping, they did not consider the possibility that, without external assistance, they would be unable to cope. Team decision-making and management of responsibility during the accident was fragmented, with both instructors reacting to the situation as it developed. Satisfactory resolution of the accident relied on the timely arrival of *Furzey Squirrel*.

2.4 SAFETY INSTRUCTOR'S EXPERIENCE AND QUALIFICATIONS

The safety instructor held the BCU Level 2 Kayak Coaching award and had passed the BCU's Kayak 3 Star and Sea Kayak 4 Star tests. These qualifications were appropriate, and complied with both AALA's and BCU's guidelines, for him to lead this exercise.

While he had acted as the second instructor on previous exercises of this type, he had not taken the lead before. Leadership Direct and its client recognised this, and had previously raised their concerns with BOC. BOC did attempt to reduce the risk by despatching the extra instructor to accompany him, but this was only after the weather had deteriorated. Team management procedures should have identified the need to provide a mentor at the outset, instead of assuming that the safety instructor's previous, limited experience was sufficient. In the event, the presence of the second instructor might actually have reduced the likelihood of the safety instructor amending or cancelling the exercise due to a likely subconscious perception of shared responsibility.

2.5 RISK ASSESSMENT AND VALIDATION

2.5.1 Risk assessment – rafted canoes

Comprehensive risk assessments are an essential tool in identifying appropriate control measures that need to be put in place to reduce risk to a level as low as is reasonably practicable. In the case of outdoor activities, the risk assessments are, by necessity, frequently dynamic and are often made "on site" by the instructor. However, it is important that the baseline limits are set so that the instructor has information on which to base his judgment.

Notwithstanding this accident, BOC is a very safety conscious organisation. The company's Code of Practice and Safety Policy risk assessments are regularly reviewed and are comprehensive. The AALA and Purbeck District Council inspections carried out on 30 March 2005 and 9 October 2003 respectively, did not identify any shortcomings in the company's risk assessments.

During the course of the investigation, there was confusion as to whether this exercise was a canoeing or a rafting exercise. BOC believed it to be a canoeing exercise, Leadership Direct considered it to be a rafting exercise. Discussions with AALA, BCU and other activity centres revealed a variety of opinions.

The canoe/raft configuration is a hybrid one. As such, it is even more important that it has its own dedicated risk assessment. To consider it to be covered under other assessments, because it is convenient to do so, prevents the risks being properly evaluated. Had the assessment defined wind force, sea state, and possibly freeboard limits and the risk of swamping, then at least the safety instructor would have had information to help his decision-making. He might then have revised the intended plan, possibly conducting the exercise in sheltered waters or aborting it altogether.

2.5.2 Risk assessment – notification of changes

While BOC reviews its risk assessments annually, promulgation of changes appears to be less co-ordinated. The investigation found that the canoeing risk assessment (which BOC used for this exercise) had been reviewed during the winter period; although it had been printed shortly before the accident, it had not

been promulgated to the staff. The limit for canoeing activities from the shore had been reduced from 400 metres to 250 metres. The safety instructor was not aware of this. Staff should be notified quickly and effectively of any changes. Armed with such knowledge, the instructor might have chosen a different route, thus exposing the exercise team to more benign conditions.

2.5.3 Validation

It is all too easy to compile a risk assessment from a broad set of guidelines, or to contract consultants to do so. It is important to validate the risks. Harbourmasters can provide very useful local expert opinion, and can advise on the suitability of assessments. Undertaking scenario-based training is an effective way to validate a risk assessment.

There is no evidence that a practical validation had been made of the risk assessment on this occasion. Had BOC conducted canoe towing and rescue training sessions, using the safety boat, it is likely the risk of swamping and limitations of the safety boat would have been identified. The instructors would then have been better prepared to deal with the accident.

AALA's "Infolog Entry No 1 of Feb 1999", which is available on its website, identifies and sets out the need and value in practising recovery drills.

2.6 THIRD PARTY INVOLVEMENT

Leadership Direct and its client were valued BOC customers. BOC staff were well aware that they were demanding customers, and were extremely keen that the programme schedule be maintained. As a result, there was a perception among BOC's staff that they needed to "keep the customer happy".

Course programming was Leadership Direct's responsibility, with BOC providing some of the safety instructors. There was consultation between both parties during daily meetings being held between Leadership Direct and BOC, but BOC's instructors felt there was little opportunity to influence the programme. Had BOC staff been more involved in planning the exercise, it is possible the safety instructor might have recommended an alternative transit, or examined the option of a different exercise altogether.

Leadership Direct mentioned to the safety instructor that there was an alternative exercise plan. The safety instructor's interpretation from this brief discussion was that the transit was, nevertheless, expected and he did not pursue any other option. This was possibly due to his inexperience or his reluctance to upset or confront the customer. Either way, it was understood by all concerned that BOC had responsibility for safety during this exercise and, as such, they should have exercised more authority, including the option of cancellation, and should have been more influential in its planning.

2.7 SUITABILITY OF CANOES

2.7.1 Rafted arrangement

The 4 seater canoes were purchased secondhand over 8 years ago. Discussions with the manufacturers confirm that the original arrangement was for 2 seats, with an option for a third. A comparable, modern 17 feet Coleman canoe is also fitted with only 3 seats, and this suggests that the canoes in use had been modified at some time prior to purchase, to take an extra person. If so, it would explain the very low freeboard of only 7 inches. It is noted that BOC has now imposed a limitation of 3 persons in the canoe.

The rafted canoe configuration is recognised by BCU, AALA and activity centres as being a very stable platform. It is widely used, mostly in sheltered waters, for children, clients with special needs and for those who feel less confident on the water.

Although stable, the arrangement is rigid, and is less able to roll under the influence of water movement and strong winds than a single canoe. This is especially the case in open tidal waters, when seas and wind combine to affect canoes on the beam. They then become susceptible to swamping, especially if the canoes have a low freeboard. The situation is exacerbated if the canoe stems are not “toed”¹ in, as waves can generate between the hulls and also swamp the vessel.

The BCU canoeing syllabi touches on rafted canoes, but only when used in conjunction with a sail. Both BCU and AALA confirm that the general arrangement was appropriate, but that they considered the weather conditions to be outside the safe limits for an exercise of this type.

2.8 SUITABILITY OF SAFETY BOAT

2.8.1 Purpose of the safety boat

The RYA Powerboat Practical Course documentation states that:

“Safety boats primarily exist to save life”.

While this definition is aimed mainly at the yachting leisure industry, it is reasonable to accept its applicability in this case. This is especially so as teams in the canoes usually have little or no open water canoeing experience. BOC’s Safety Boat risk assessment also clearly states that its role is for canoe/kayak rescue in Poole Harbour, River Frome to Wareham Bridge.

¹ The bows of the canoes are closer together than the stems

2.8.2 Suitability

The safety boat had a maximum capacity for four people. The related risk assessment in force at the time of the accident, advised that two staff should be in the boat whenever practicable, leaving space for only two others. If there is a need to conduct a rescue, it is likely that the whole team would be in the water. If that is the case, a number of trips would be required to take the casualties ashore. Meanwhile those in the water could easily drift and become dispersed, making rescue even more difficult, lengthy and risky.

During interviews, it was suggested that the safety boat was suitable, on the premise that some of the canoe crew would be able to walk ashore. This is a dangerous and unacceptable assumption. Walking ashore could be extremely difficult, especially for those who may be injured, have ingested water, are unfit, tired and cold. They may also be struggling with high winds, choppy water and a muddy sea bed.

It is inappropriate to stipulate hard and fast rules for the lifesaving capacity of a safety boat, for any particular activity, because of the wide-ranging, dynamic situations involved. The suitability of a safety boat will depend on such issues as the prevailing and predicted weather conditions, the proximity to land and the experience of the instructors and canoeing teams. It is therefore essential that risk assessment control measures be identified which reduce the risk to a level as low as is reasonably practicable. Once these have been validated, the size of safety boat required can be determined to suit the prevailing circumstances.

2.8.3 Safety boat equipment

The safety boat was equipped in accordance with the RYA's guidance notes and Safety Boat Handbook, with the exception that no distress flares or VHF radio were carried. These should be included when operating out of sight of the shore base, and would have given the instructors the opportunity to more easily raise the alarm.

The only form of communication on the safety boat was the BOC's mobile telephone, held by the extra instructor. It is well known that mobile telephone reception and transmission signals can be unreliable. Had the mobile signal been lost, and *Furzey Squirrel* not arrived on the scene so opportunely, there would have been no way of alerting anyone of the developing events. The outcome of this accident could then have been very different.

2.8.4 Safety boat engine

The engine fitted to the safety boat was rated at 11.2kW. The maximum designed output for the boat was 7.4kW as indicated on the identification plate at **Figure 11**. While the excessive engine power did not contribute to this accident, propulsive power should be matched to the boat's specification, or power limitation devices fitted.

2.9 TOWING ARRANGEMENTS

2.9.1 Suitability

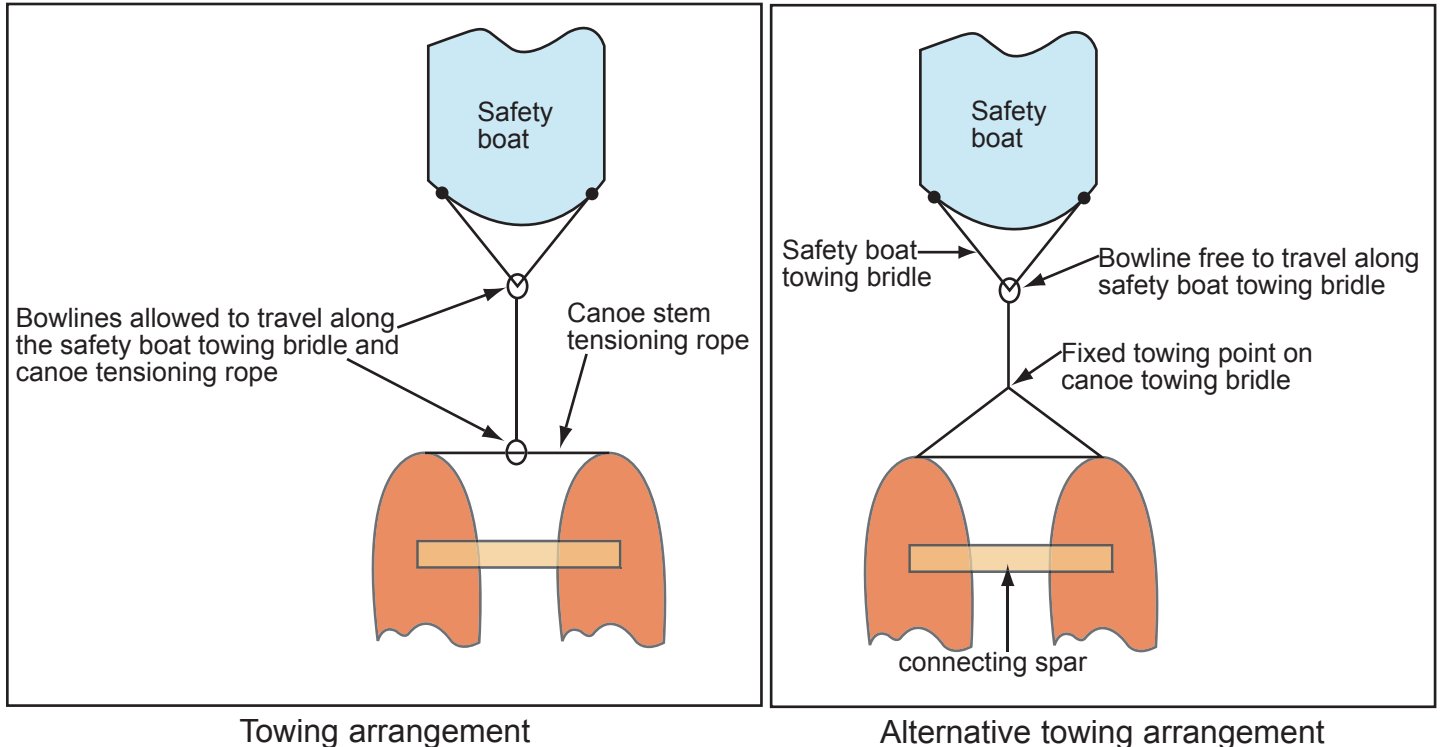
Proficiency in connecting and conducting an effective tow is a fundamental requirement of a safety boat and its crew. This is particularly important when dealing with tired crew in canoes in open water situations. It may be the last opportunity to prevent a dangerous situation from degenerating, and demands a good knowledge of safe towing techniques.

Swamping only occurred after the canoes were taken under tow. The towing arrangement permitted too much transverse movement of the towing line along the canoe stem rope and the safety boat towing bridle, which created a yawing movement. The canoes were beam on to the sea and wind, resulting in them being swamped. Using a towing bridle fixed to the stems of the canoes, as shown in the schematic at **Figure 12**, would have given greater control.

2.9.2 Training

Both the RYA powerboat, and the BCU syllabi, cover various towing techniques, but the rafted canoe configuration is not covered, despite it being in widespread use. Appropriate towing techniques to suit the particular circumstances can be learnt through “on the job” training. Inclusion of rafted canoe towing techniques in the RYA and BCU syllabi would provide a very helpful baseline.

Figure 12



Prior to this accident, the safety instructor had not used the RYDS 425R safety boat for towing, neither had this particular safety boat been used for towing manned, rafted canoes before. The instructor, therefore, had no experience on which to base the best method of towing and safety boat handling. It is likely that this inexperience and lack of familiarity contributed to the accident.

2.10 POOLE HARBOUR COMMISSIONERS

Many organisations using Poole Harbour advise the harbourmaster's office when they are about to enter and leave the water. In doing so, the harbourmaster is able to advise on vessel movements, and other safety aspects that may affect the activity. It also enables him to discharge his duty in accordance with the Port Marine Safety Code.

It had not been BOC's normal practice to inform the harbourmaster when they intended to use the harbour for exercises. Had BOC done so on this occasion there was a chance that the harbourmaster might have advised against making the open water crossing. It is prudent, for safety reasons, to inform the harbour authorities when using the harbour, especially where inexperienced water users are involved. In doing so, the harbour authorities can advise the emergency services of the situation in the event of an accident.

2.11 FATIGUE

The BOC instructors and canoe crews were all well rested prior to the start of the exercise. Fatigue is not considered to be a causal factor in this accident.

SECTION 3 - CONCLUSIONS

3.1 SAFETY ISSUES

The following safety issues have been identified by the investigation. They are not listed in order of priority:

1. Brenscombe Outdoor Centre failed to recognise the risk that the rafted canoe arrangement was susceptible to swamping. [2.2. 2.7.1]
2. The instructors did not make an appropriate assessment of the risks associated with the planned transit, and consistently underestimated the risk. [2.3.1, 2.3.4, 2.3.5]
3. The option of an alternative exercise was not properly considered. [2.3.2]
4. Uneasy working relationships might have affected decision-making. [2.3.3]
5. The instructors did not recognise that the initial swamping had developed into an emergency situation requiring external expert assistance. [2.3.5]
6. Neither of the instructors appeared to take proper charge of the situation. [2.3.5]
7. BOC's management did not have procedures in place to ascertain the severity of accident reporting. [2.3.5]
8. Lack of clarity in the relative roles of the two instructors, might have led to a decision to amend or cancel the exercise not being taken, due to the perception of shared responsibility. [2.4]
9. There was confusion whether this was a canoeing or rafting exercise, and therefore which risk assessment was appropriate. [2.5.1]
10. Risk assessments in force at the time of the accident did not specify any environmental limits. [2.5.1]
11. The safety instructor was not aware of the new 250 metre operating limit from shore because the risk assessment revisions had not been promulgated. [2.3.4, 2.5.2]
12. Risk assessments had not been validated by scenario-based exercises, neither had the Poole Harbourmaster been consulted. [2.5.3]
13. There was minimal input and influence on Leadership Direct's planning, despite BOC providing safety instructors for various exercises. [2.6]

14. The safety boat was inadequate for its role and was not equipped with distress flares or a VHF radio. [2.8.2, 2.8.3]
15. The safety boat engine power output of 11.2kW exceeded the boat's designed output of 7.4kW. [2.8.4]
16. The safety instructors were not familiar with towing techniques involving rafted canoes. [2.9.1, 2.9.2]
17. It was not normal BOC practice to inform the Poole Harbour Authorities when entering or leaving the water. [2.10]

SECTION 4 - ACTION TAKEN

4.1 BRENSCOMBE OUTDOOR CENTRE

Brenscombe Outdoor Centre has:

1. Revised the risk assessments relating to canoeing and canoe rafting in a single assessment as follows:
 - Reduced the number of adults in each canoe from 4 to 3.
 - Force 1-3 - normal canoeing and kayaking sessions under BCU self rescue guidelines. Maximum distance from shore – 250 yards.
 - Force 4-5 - no kayaking. Canoes to be rafted, safety boat in attendance. Maximum distance from shore - 250 yards.
 - Force 5 and above – no canoes or rafted canoes allowed in harbour.
2. Revised the safety boat risk assessment to include:
 - Provision of distress flares and VHF radio for safety boat activity within the harbour confines.
 - Provision of sufficient rope for securing the canoes' stems and sterns, and for making up bridles for centre point towing.
 - Carriage of additional warps for use as springs for alongside towing.
3. Manufactured quick release canoe joining spars that can be quickly removed in a swamping/capsize situation.
4. Conducted a limited scenario-based training session to better understand the properties of swamped canoes and towing arrangements.
5. Included "Canoe Rafting" within the Code of Practice Risk Assessments for canoeing and kayaking.
6. Taken management action to ensure that:
 - Operational staff read the assessments covered in the Code of Practice at the beginning of the season.
 - Alterations during the season are published as amendments, and promulgated through regular staff meetings.
7. A master training log was established following the accident. This log is intended to record all individual and group training in a central database.

SECTION 5 - RECOMMENDATIONS

Brenscombe Outdoor Centre is recommended to:

- 2005/213 Compile a separate risk assessment for rafted canoes, identifying the risk of swamping and validate the control measures by further scenario-based training.
- 2005/214 Be influential in programme planning when a “third party” is involved in course management. In particular, have prior agreement for an alternative programme in the event of the need to abort an exercise.
- 2005/215 Develop management procedures to ensure that when an emergency situation develops, it is properly assessed and the appropriate level of notification to the emergency services is given.

Adventure Activity Licensing Authority, Association of Heads of Outdoor Education Centres, The Outdoor Education Advisers Panel, Scottish Advisory Panel for Outdoor Education and the Royal Yachting Association are recommended to:

- 2005/216 Advise outdoor activity providers:
- Of the benefits of validating risk assessments by scenario-based training.
 - That despite being a stable platform, rafted canoes risk being swamped while under paddle or under tow.
 - Of the need to be fully engaged in programme planning, especially when a “third party” is involved in course management. In particular, have prior agreement for a revision of the original plan or for an alternative programme in the event of an exercise being aborted.
 - That there should be unambiguous mutual recognition of a safety instructor/technical expert’s authority to cancel an exercise if he/she considers conditions warrant such action.
 - Of the need to clearly stipulate who has control of an exercise in order that effective decision-making can be achieved.
 - Of the importance of an instructor being able to recognise when a “normal” recovery situation develops into an emergency situation, and that he is empowered to alert the emergency services.

RYA and BCU are recommended to:

2005/217 Include in powerboat and canoe training courses syllabi instruction on appropriate techniques for towing rafted canoes.

**Marine Accident Investigation Branch
December 2005**

Safety recommendations shall in no case create a presumption of blame or liability