Report on the investigation of

the collision between the chain ferry

Bramble Bush Bay

and four

XOD class yachts

at the entrance to Poole Harbour

on 5 May 2001

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Extract from

The Merchant Shipping

(Accident Reporting and Investigation)

Regulations 1999

The fundamental purpose of investigating an accident under these Regulations is to determine its circumstances and the cause with the aim of improving the safety of life at sea and the avoidance of accidents in the future. It is not the purpose to apportion liability, nor, except so far as is necessary to achieve the fundamental purpose, to apportion blame.

CONTENTS

GLOSSARY OF ABBREVIATIONS AND ACRONYMS

IRPCS	-	International Regulations for Preventing Collisions at Sea
kW	-	kilowatt
m	-	metres
PHC	-	Poole Harbour Commissioners
PYC	-	Parkstone Yacht Club
RIB	-	Rigid inflatable boat
RNLI	-	Royal National Lifeboat Institution
RoRo	-	Roll-on roll-off
RYA	-	Royal Yachting Association
UTC	-	Universal co-ordinated time
XOD	-	X one design

SYNOPSIS

On 5 May 2001, four XOD yachts collided with the chain ferry, *Bramble Bush Bay*, which plies between Sandbanks and South Haven Point at the entrance to Poole Harbour. One yacht, *X17,* and her owner's wife were drawn under the ferry. Two RNLI lifeboats rescued two of the yacht's three crew members. The third member was able to climb on to the chain ferry. They were unharmed, but the yacht was a total loss.

A fleet of XODs belonging to Parkstone Yacht Club began racing at 1405 from a start line inside Poole Harbour. Shortly after the race began the fleet encountered the inward bound fast ferry *Condor Vitesse*, which was late arriving. The yachts moved out of the channel to the north to avoid the ferry.

After *Condor Vitesse* had passed, the chain ferry's skipper saw a gap between the leading three XODs and the rest of the fleet, so he manoeuvred the vessel away from the Sandbanks slipway. However, as they approached the chain ferry, the yachts lost the wind and their steerage. Because they were close to the Sandbanks side, a lee had been created from the north-easterly wind. Under an obligation to keep out of the way of all traffic, the skipper reversed the chain ferry to allow the leading group to pass to the south. However, the next four XODs could not avoid the ferry and landed alongside in the strong ebb tide.

Two RNLI lifeboats, which had been close by when the incident occurred, quickly towed three of the XODs away from the chain ferry. A line from a launch was passed to the last yacht, *X17*, and as she was being towed she heeled to starboard and was in danger of capsizing. The line was released and *X17* landed heavily back alongside. With water on board, the pressure of the strong ebb tide and the turbulence, the boat was drawn underneath the chain ferry, together with the owner's wife. The owner and his other crew member hung on to the grab lines hanging down from the sponson on the side of the chain ferry. The owner's wife emerged on the other side and was quickly rescued by one of the RNLI lifeboats; the owner was retrieved with difficulty by the other lifeboat, and the remaining crew member managed to climb on board the chain ferry.

X17's crew members were taken to hospital for medical checks, but they were found to be uninjured.

A safety recommendation has been made to the Poole Harbour Commissioners (PHC) to enhance co-ordination of communications between the PHC's port control, the chain ferry, yacht club race officers and rescue boats before and during racing events.

A further recommendation has been addressed to Parkstone Yacht Club, to review, and if necessary improve, the effectiveness of the rescue boats and their towing capabilities.

Photograph 1

The chain ferry, *Bramble Bush Bay*, crossing from Sandbanks to South Haven Point

SECTION 1 - FACTUAL INFORMATION

Times are UTC + 1

1.1 PARTICULARS OF *BRAMBLE BUSH BAY* AND ACCIDENT

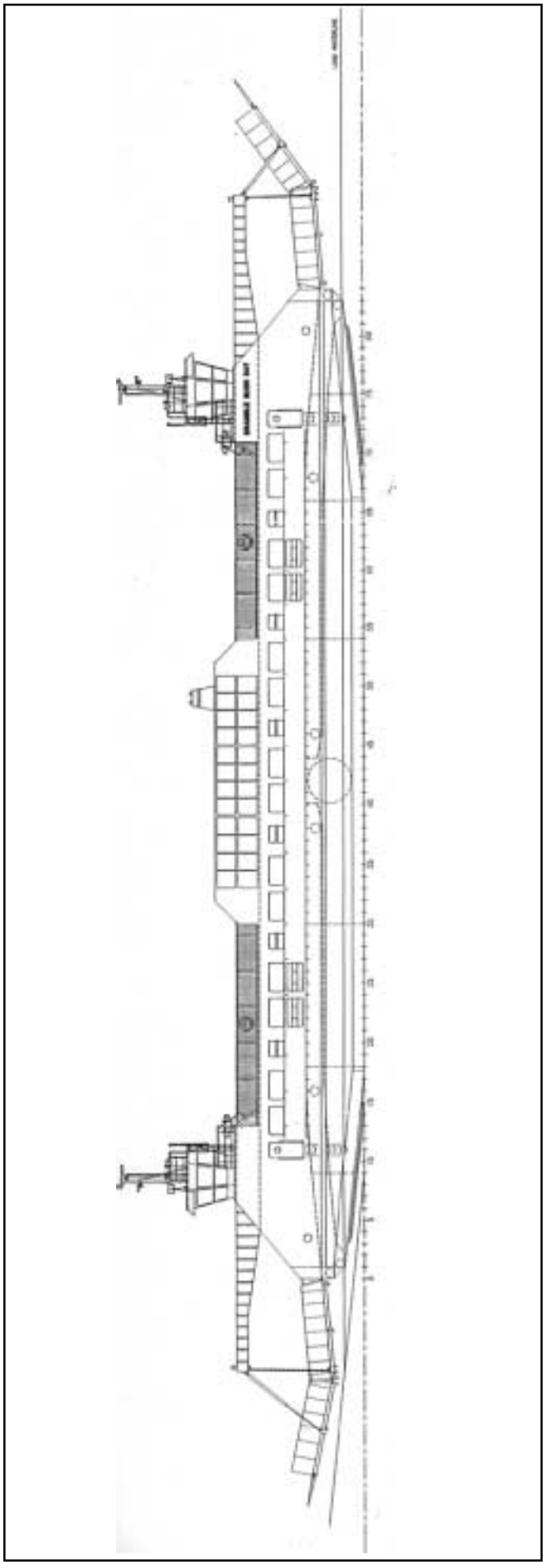
Vessel details

Registered owner	:	The Bournemouth – Swanage Motor Road and Ferry Company
Flag	:	United Kingdom
Type	:	Chain ro-ro ferry
Built	:	1994 in Hessle
Classification society	:	Lloyd's Register of Shipping
Construction	:	Steel
Length overall	:	74.4m
Gross tonnage	:	125
Engine power and type	:	606kW hydraulic

Accident details

Time and date	:	About 1419 (UTC + 1) 5 May 2001
Location of incident	:	Latitude 50° 40.9'N Longitude 001° 56.87'W between Sandbanks and South Haven Point at the entrance to Poole Harbour
Injuries/fatalities	:	None
Damage	:	Damage to three XOD yachts and loss of yacht *X17*

Diagram 1



Profile of *Bramble Bush Bay*

1.2 ENVIRONMENTAL CONDITIONS

Within Poole harbour, the tidal cycle is abnormal as the flood stream runs for about 5 hours only. The ebb tide runs in two periods, separated by an interval of slack water or weak flood stream, and lasts about 7.5 hours. This phenomenon results in a double high water, with the tide standing at or near high water for approximately 6 or 7 hours. Neap tides are very irregular and may produce a second high water, which is greater than the first. Barometric pressure and strong winds can alter the tidal cycle significantly.

At the entrance to Poole Harbour, the maximum spring rates are 3 knots for flood stream and 4.75 knots for the ebb stream, which is weak during the first 3 hours. Strong rips occur on the north-east side of the entrance, both on the flood and ebb streams.

On 5 May 2001, predicted low water was at 1557 with a height of 0.6m, and the tides were about 2 days before springs.

The wind was north-east, force 3 to 4; the weather was fine and sunny and the visibility was good.

1.3 NARRATIVE

During the afternoon of 5 May 2001, all classes of racing boats belonging to Parkstone Yacht Club were scheduled to race from the start point south of the club to Studland Bay. The aim was to leave the harbour with the ebb tide, race in Studland Bay and return to the finish point with the flood tide. Beginning at 1350, there were 10 races and each race started at 5-minute intervals; the XODs started at 1405. *X17* began the race on a close fetch and as she passed Aunt Betty buoy **(see chart extract 1)**, the crew raised her spinnaker. She then passed the Glovers buoy to starboard. As the race progressed, three of the XODs in front became separated from the rest of the fleet. The next group consisted of *X51*, *X17*, *X77* and *X60*. As the group of four approached North Haven beacon, the inbound ferry *Condor Vitesse* appeared, and they manoeuvred to port towards the north side of the channel to keep out of her way **(see Photograph 2)**.

There were a number of scheduled shipping movements that day:

Barfleur - Bar 1215, Quay 1300;

Condor Vitesse – Bar 1240, Quay 1310;

Barfleur out 1600; and

Condor Vitesse out 1610.

Therefore, *Condor Vitesse* was late arriving at Poole Harbour.


Reproduced from Admiralty Chart 2611 by permission of the Controller of HMSO and the UK Hydrographic Office
POOLE
Parkstone Yacht Club
Parkstone Platform
Aunty Betty
Glovers
North Haven Point Sandbanks
Chain Ferry
South Haven Point

Photograph 2

Condor Vitesse rounding North Haven Point

The skipper began his shift on board the chain ferry *Bramble Bush Bay* at about 1355, and found that the yacht traffic between the havens was very heavy **(see Photographs 3 and 4)**. He saw that there were sailing dinghies of various classes racing out towards the Swash Channel. He made his first crossing to South Haven Point, with several yachts passing close to the ferry. The ferry arrived on the south side and, being aware that *Condor Vitesse* had passed the Bar buoy at 1405, the skipper informed Poole Harbour Port Control that he would wait on the north side until she had passed. The ferry crossed to the north side, arriving at about 1408. At about 1415, *Condor Vitesse* cleared the chains, and the skipper moved *Bramble Bush Bay* off the slipway at slow speed. He could see a line of yachts approaching from North Haven beacon. The first three were ahead of the rest of the fleet, and they appeared to be heading for the middle of the channel to pass ahead of the chain ferry. The skipper moved the chain ferry slowly ahead so that she could pass between the first three and the rest of the fleet.

However, the skipper then realised that the leading yachts had lost the wind, under the lee of Sandbanks, and were drifting with the ebb tide with no directional control. At this point, the ferry was about 80m from the northern slipway. The skipper decided to return and moved the ferry into full astern, allowing the leading XODs to pass the ferry on the south side. However, a group of four XODs was approaching and closing the ferry; they had also lost the wind.

The skipper stopped the chain ferry, which was now about 50m from the slipway and, seeing that collision was inevitable, he called the harbour patrol craft *Venture* for assistance.

X51 landed alongside the chain ferry, but the crew was unable to move the boat along the hull owing to the pressure of the ebb tide. *X60* and *X17* also landed alongside the chain ferry, and then *X77* fell against *X17* but facing in the opposite direction. The Poole RNLI lifeboat, and the inshore lifeboat, were diverted from a previous service to the scene. The inshore lifeboat was able to tow off one of the XODs, and the lifeboat towed off another two.

The Brownsea Island launch, *Castello*, approached the last XOD, *X17*, which was port side alongside, and passed a towline to the yacht's crew. The line was made fast to *X17*'s forward samson post, and *Castello* began to tow the yacht away from the side of the chain ferry. However, as the yacht's bow was turning into the tide, she began to heel to starboard and to take on water quickly. Seeing that *X17* could capsize **(see Photograph 5)**, *Castello* let go the towline and the yacht slew back towards the chain ferry and landed heavily alongside. With water already on board, the pressure of the ebb tide and the turbulence, the yacht flooded up and was drawn underneath the chain ferry **(see Photograph 6)**, taking the owner's wife with her. The owner and his other crew member hung on to the grab lines hanging down from the sponson on the side of the chain ferry.

The lifeboat crew had seen the yacht and one of the crew disappear underneath the chain ferry, so the lifeboat went round to the other side of the chain ferry. The owner's wife reached the surface, and the lifeboat's second coxswain went into the water to rescue her. The owner's wife and the second coxswain were recovered from the water by using a strop and a lifting frame.

The inshore lifeboat tried to recover the owner and his other crew member, who were in danger of being swept under, by going alongside the chain ferry **(see Photograph 7)**. One of the crew was able to hold on to the owner and a line was placed around him. The owner's crew member held on to the chain ferry's lifebuoys, which had been lowered to him from above. The lifeboat had returned to the other side and, seeing that the inshore lifeboat was also in danger of being swept under the chain ferry, and could not manoeuvre away from her side, a towline was passed, and the inshore lifeboat was towed off **(see Photograph 8)**. Once free of the chain ferry, the owner was then pulled aboard the inshore lifeboat **(see Photograph 9)**.

The owner's crew member had moved along the grab lines to a side ladder, and he was able to climb on to the sponson and enter the chain ferry through a shell door **(see Photograph 10)**.

X17's crew was taken to hospital for medical checks, but they were found to be uninjured. The other three XODs suffered various damages when they were being buffeted against the side of the chain ferry.

Photograph 3

Photograph 4

Photographs 3-10 are images from a video recording taken at the time of the incident

Photograph 5

Photograph 6

Photograph 7

Photograph 8

Photograph 9

Photograph 10

1.4 POOLE HARBOUR

1.4.1 The harbour

Poole Harbour is a spacious natural estuary, which at high water resembles an inland lake; at low water large expanses of mudflats are exposed **(see chart extract 2)**. The port, fronting the town of Poole, lies on the north side, and is used by commercial vessels, including ferry and ro-ro services to the Channel Islands and the north coast of France. The harbour is an important yachting centre, and contains yacht marinas and moorings for more than 5,000 yachts and other pleasure craft.

The 300m wide entrance to the harbour lies between South Haven Point, which is at the north end of Studland Bay, and the south end of Sandbanks, which is a peninsula extending 1 mile south-west of Poole Head.

1.4.2 Poole Harbour Commissioners (PHC)

The PHC operates a VTS from the port office buildings. Vessels of 25m or more in length transiting the harbour should report to Poole Harbour Port Control on VHF radio channel 14 as follows:

Passing Bar Light No.1

Passing North Haven light beacon

Passing Aunt Betty light buoy

Arriving/leaving berth

The following is advice from the PHC's *Poole Harbour Guide*:

Racing yachts and dinghies tacking across a navigation channel must be considerate when encountering vessels which can navigate safely only within the channel. Crossing or passing dangerously close to such a vessel may be regarded as dangerous navigation and result in prosecution under Harbour Byelaws. Helmsmen must therefore resist the temptation to take any action contrary to the IRPCS Rules in order to gain tactical advantage over other competitors. Such behaviour may also result in disqualification and other penalties imposed by the race organisers.

Race officers setting a race course, which passes through the harbour entrance or across the shipping channels should check with Poole Harbour Control (VHF channel 14) for advice on shipping movements before the race is started.


BOURNEMOUTH
POOLE
POOLE HARBOUR
Brownsea I
CASTLE
South Haven Pt
Hook Sand
South Channel
Holes Bay
CHIMNEY
Arne
Rocks
BUILDINGS
40
104

1.4.3 PHC's risk assessment of activities at the harbour entrance

The following are relevant discussion points from a risk assessment commissioned by the PHC:

There are approximately 150 different race courses and a particular course is chosen on the basis of weather and tidal conditions on any particular racing day. The race officer is responsible for setting the course and advising of any course changes at short notice. Any decision to go outside of the harbour takes into account tidal conditions and time of day. It is usually planned to pass outward on an ebb tide and inward on the flood.

When racing through the harbour entrance, a safety boat is stationed close to the harbour entrance to communicate with the racing fleet and provide immediate assistance if necessary. It is understood that the safety boat does not communicate with the chain ferry.

It seems that when yachts are approaching the harbour entrance, the ferry often attempts to wait for a suitable gap in traffic before proceeding.

One of the causes of collisions appears to be lack of wind around the entrance causing problems with steerage way for sailing vessels. Club yachts would not normally be proceeding through the entrance if winds were light.

1.5 BACKGROUND TO THE CHAIN FERRY

1.5.1 The company

An Act of Parliament legally enabled the Bournemouth - Swanage Motor Road and Ferry Company to be established in July 1923. Money was raised by the issue of shares, and work started on building the slipways, a new road from Studland and an order was placed to build *Ferry No1* in the Isle of Wight.

The first service began on 15 July 1926. The steam-driven *Ferry No1* could carry 15 cars but, after several years, was modified to carry 18. A restricted service was introduced at the beginning of World War II which stopped after the invasion of France. Once the area had been repaired and cleared after the war, the service resumed in 1946. During extended refits to *Ferry No1*, an additional ferry (*Ferry No 2*) was used but, in the mid-1950s, they were replaced by *Ferry No 3*. This was a reliable ferry which had three diesel engines of which only two were used (and one if necessary) at any one time, leaving the third available for maintenance.

At this time, it was decided not to build a bridge, because it would have had to be too high to allow ships to pass, and would have dominated the local landscape. The idea did not gain enough support from the local authorities.

The Raglan Property Company bought the majority of the shares in 1961 but the company was sold to the present owner, Fairacres Group Ltd., in the early 1980s. This owner improved the slipways, office buildings, toll booths and toll system and the road infrastructure.

1.5.2 The chain ferry

The present ferry, *Bramble Bush Bay*, the first to be given a proper name, went in to service in January 1994. She is much larger than *Ferry No 3*, but she still has the same loaded draught of 1.065m. She has a capacity to carry 48 cars, but can take 52 without difficulty.

There are three diesel generators coupled to three power packs, which drive two hydraulic motors for the chain drives.

The following is an extract from the *Admiralty Sailing Directions Channel Pilot*:

> *The ferry shall give way to all other vessels navigating the harbour. The ferry, when under way, shall:*
>
> *Display a white rotating flashing light from the leading end of the chain ferry to indicate the direction of travel, in addition by day, display a black ball at the forward end of the vessel to indicate the direction of travel.*
>
> *Should the ferry become stationary in the fairway, it shall:*
>
> *By day, display a red flag at one end of the vessel.*
>
> *At night, exhibit a white light at one end of the vessel.*

The ferry crossing times are on the hour, then 20 and 40 minutes past the hour from the Sandbanks side. From South Haven Point the normal crossings are at 10, 30, and 50 minutes past the hour. The ferry runs from 0700 to 2300 hours. The schedules may be varied at peak periods, when a continuous shuttle is run. The crossing takes just under 3 minutes.

The skipper maintains contact with Poole Harbour Port Control by VHF radio to learn of all commercial shipping movements. When the high-speed ferries enter or leave the harbour, the skipper informs them by VHF radio, on which side of the entrance the chain ferry is. When a large conventional ferry enters or leaves, the chain ferry remains at South Haven Point, as she does not protrude into the entrance as much as on the Sandbanks side **(see diagram 2)**.

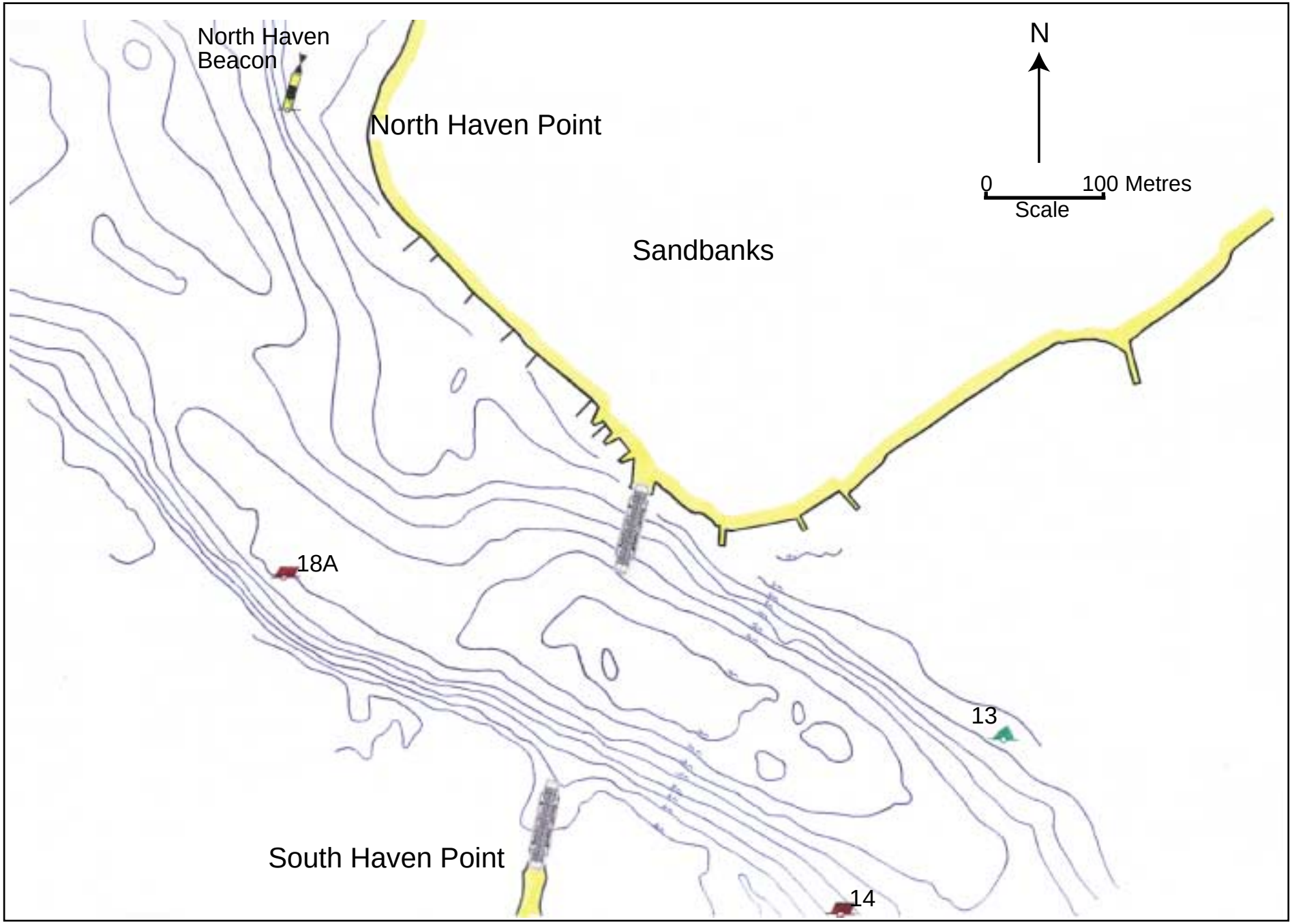

North Haven
Beacon
North Haven Point
N
0
100 Metres
Scale
Sandbanks
18A
13
South Haven Point
14

Diagram 2

1.5.3 The skipper

The skipper was 63 years old and had started his career at sea as a deck apprentice on foreign-going tankers, and subsequently obtained his second and first mates certificates of competency. After 8 years deep sea, he served 8 more years on coastal tankers, 7 years of which were as master, having obtained his Home Trade master's certificate of competency. He became a pilot, with Trinity House and then the Poole Harbour Commissioners, carrying out acts of pilotage in Poole Harbour for 23 years. He left pilotage in 1995, and took up employment in May 1997 with the chain ferry company as relief skipper. He took full time employment about 8 months before the accident.

1.5.4 Rescue of swimmers

The following is an extract from the company's Safety Policy:

> *No employee should enter the water in an attempt to rescue a swimmer or other person in difficulties. Every attempt at a rescue should be made from the ferry or the shore by using lifebuoys and the life lines on the ferry. Manoeuvring the ferry itself can also help in effecting a rescue, if possible by stationing the ferry in such a position that those in the sea are brought alongside by the tide and are then able to be helped aboard through the ferry's shell doors. If a rescue attempt of this kind proves abortive, the Skipper must attract the attention of nearby craft in order that they may effect a rescue. If there are no boats in the vicinity then the Skipper will call the emergency services on the marine radio.*

1.6 PARKSTONE YACHT CLUB AND YACHT *X17*

1.6.1 The club

The club was established in 1895 and is situated on the north side of Poole Harbour **(see chart extract 1)**. The club has a membership of about 2,500, comprising of boat and cruiser owners. It regularly hosts national championships and open meetings for various classes of sailing yachts and dinghies, and it runs racing on Mondays, Wednesdays and Saturdays.

1.6.2 Criteria for racing

The following are relevant extracts from an agreement between the PHC and the local yacht clubs, giving advice to race officers:

> *The following guidelines are written for Race Officers who have responsibility for the safe management of yacht races in the Harbour and Poole Bay, specifically those involving racing through the harbour entrance or transiting to race in Poole Bay.*

The harbour entrance is a high-risk area. It is narrow, subject to strong tidal streams and a very choppy sea state in certain conditions; there are many movements of commercial and other leisure craft, particularly at weekends and bank holidays in the summer and uniquely, the Sandbanks Chain Ferry plies across the entrance at the narrowest point.

<u>Guidelines</u>

Obtain a reliable forecast ….. Conditions may be obvious at start time, but what are they likely to be at the finish?

What is the wind direction and strength? They may be similar in the harbour and bay, but sea conditions could vary. Obtain a report from outside.

The Start Line should be located far enough from the harbour entrance so that the craft are dispersed by the time they pass through. Avoid situations where a number of yachts will transit en masse.

Station a safety boat at the harbour entrance. If there are likely to be difficulties with craft making way through the entrance, consider extra safety boats for towing. The safety boats(s) to be in communication with Harbour Control.

Finally contact Harbour Control on VHF channel 14 or telephone. It is important that a telephone link is maintained between Harbour Control and the Race Officer for the duration of the race…..Find our latest shipping movements and ascertain whether the passage of small craft through the harbour entrance, whether racing or transiting, will affect the passage of the larger ship. The Harbour Control officer will also up-date you with any other relevant information, which may affect safety.

The following advice is from the club's sailing instructions:

Boats shall not manoeuvre in such a manner that they interfere with the safe navigation of commercial shipping. Any boat found to be in breach of this instruction is liable to disqualification from the race, races, or series and its actions may be considered by the General Committee under Club Rule 13.

1.6.3 Safety/rescue boats and emergency routine

The following are extracts from the club's instructions to safety boats operated by club members:

The number and types of rescue boats allocated to the various races are:

Monday – dinghy races	*2 RIBs*
Wednesday evening races	*3 RIBs and 1 Nelson (a type of launch)*
Saturday -in harbour races	*4 RIBs and 1 Nelson*
Saturday - Bay races	*4 RIBs and 2 Nelsons*
Day-in-the-Bay races	*4 RIBs and 3 Nelsons*

The main hazards that safety boat crews will have to deal with during club organised events for dinghies and day keelboats are those

arising from the nature of the water sailed upon;

arising from problems within the sailing boat;

arising from actions of other water users; and

weather conditions.

The race officer had taken all the weather and tidal conditions, inside and outside Poole Harbour, into account, and had decided, at about 1215, they were suitable for all classes to race into Studland Bay. The aim was that the boats would leave on the ebb tide and, after racing in the bay, would return on the flood tide. To attend the fleets, there were four RIBs and two launches, of which *RIB2* and *RIB4* were to remain on station near the chain ferry. A launch, *Peggy*, was to escort the XOD fleet through the entrance.

However, *RIB2*'s crew, not appreciating that they should have remained at the entrance, had proceeded into the Swash Channel. They returned to the entrance but only when the incident was taking place. *RIB4* had remained down-tide of the chain ferry and, when the four XODs were in difficulties, she went to give assistance. *RIB4* was swept against the chain ferry, damaging her propeller and allowing her to be swept under the ramp and out into the bay. *Peggy*'s crew had seen the incident, but the strength of the tide was too great for them to give assistance.

Parkstone Yacht Club emergency routine states:

> *The Harbour Master is the Authority within the harbour and up to No.2 buoy outside across to Poole Head. The Coastguard is responsible for all other areas. It is advisable before any major event planned that both authorities are informed and the schedule should include an outline daily programme, which includes racing locations and start and finish times.*

Photograph 11

An XOD class yacht at Parkstone Yacht Club

1.6.4 *X17* and her crew

XOD class keel/day boats **(see Photograph 11)** have the following dimensions:

Length overall	6.31m
Beam	1.83m
Draught	0.84m

They do not have engines and they are open.

This class of yacht was first designed in 1908 and it is still very active in racing. An XOD boat is a carvel-built, half-decked, Bermudan sloop, with a generous after deck. She has a relatively heavy displacement and cannot plane, making her behaviour more like that of a cruising boat. *X17* was built in 1925 and had recently had a major refit.

The owner and his wife, who were in their early seventies, had sailed together since 1948 as members of the Royal Artillery Yacht Club and many other yacht clubs. In the ensuing years, the owner has been an active race officer and sailing secretary of the Royal Motor Yacht Club and his wife had been on a number of protest committees. The owner had been a committee member of the Poole Yacht Association. They had been racing *X17* for the previous 16 years and had participated in 54 races in 2000. Their crew member, who was in his fifties, had been sailing with them for the last 10 years.

1.7 RECOMMENDATIONS BY THE PHC FOLLOWING THE ACCIDENT

- *The harbour master pursues the intended change to the right of way rule for the chain ferry.*

- *Further consultation is carried out with the aim of making the use of engines in the entrance a mandatory requirement for vessels. Other measures, to reduce the risk when non-powered craft need to use the harbour entrance, to be investigated.*

- *The intention to give harbour authorities powers of general direction is closely monitored to ensure the outcome will give PHC the means of controlling racing activity more effectively.*

- *Improvements to the signals indicating the movement of the ferry are investigated.*

- *The use of formal traffic separation in the entrance is considered and the harbour master to produce a report with recommendation within 12 months.*

- *The harbour master continues to seek invitations from local yachts clubs to lecture on safety issues on regular basis.*

- *The Poole Yacht Association/PHC bi-annual liaison meeting considers the matter of risk at the harbour entrance as a standard item.*

- *The agreed guidelines are amended to emphasise that the race control officer must inform the harbour control office if it is intended to race through the harbour entrance.*

1.8 ACTIONS TAKEN AND RECOMMENDATIONS MADE BY PARKSTONE YACHT CLUB FOLLOWING THE ACCIDENT

- Hold training weekends for rescue boat crews to qualify in the RYA Powerboat II and Safety Boat certificates.

- Placed a mobile telephone and a marine VHF radio, dedicated to channel 14, on the race platform.

- Yacht crews, participating in races and passing through the harbour entrance, to be made aware that the black ball signal on the chain ferry does not necessarily indicate that she is moving.

- A procedure to be considered whereby any rescue boat, observing the approach of a large commercial vessel, should report it to the race officer, who can advise any race fleets that they may be approaching a possible danger zone.

- The shipping movements forecast procedure should be updated by the race officer either before his or her going afloat or from the race platform. (This recommendation has been carried out with proactive dialogue between PHC and PYC.)

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, if any, with the aim of preventing similar accidents occurring again.

2.2 THE RACE

A contributory cause of the incident was the arrival of the fast ro-ro ferry *Condor Vitesse*, which set off a chain of events.

For operational reasons, the inbound *Condor Vitesse* arrived over an hour late, by which time the races had already started. The race officer had obtained the scheduled ferry arrival and departure times at 1000 that morning. However, she did not obtain the current shipping movements just before the start of the races. The criteria for racing guidelines required the race officer to obtain the "latest" shipping movements, but it is unclear whether "latest" meant scheduled or actual shipping movements. This ambiguity has since been resolved **(see Section 1.8)**. The race officer would have realised that *Condor Vitesse* was late when she heard on her VHF radio the fast ferry reporting to Poole Harbour Port Control that she was passing the Bar Light No.1. It would have been too late to reschedule the races for *Condor Vitesse*'s arrival as they had already started, and the fast ferry would arrive as the fleets were leaving the harbour.

The safety/rescue craft attending the races did not inform the race officer and the fleets that *Condor Vitesse* was approaching. The XOD crews were surprised by the incoming ferry, and had to sail to one side of the channel to avoid her. This brought them to the north side of the channel nearer to Sandbanks, and out of the normal view of the chain ferry's skipper, who had not been informed of the Parkstone Yacht Club races. Being the start of the race season, combined with Bank Holiday visiting boats and general users, and good weather for the weekend, there was a heavy density of traffic at the entrance to Poole Harbour.

The race from the start point to the entrance was nearly down-wind, which meant that each fleet remained relatively close together when they reached the entrance. If they had been sailing (beating) against the wind, by the time they had reached the entrance, the boats probably would have been more spread out. Therefore, with start-times only 5 minutes apart, concentrated groups of boats were passing through the entrance **(see guidelines at Section 1.6.2)**. Given the direction and strength of the wind, the race officer could have given more thought to preventing the bunching-up of yachts as they passed though the entrance.

2.3 THE INCIDENT

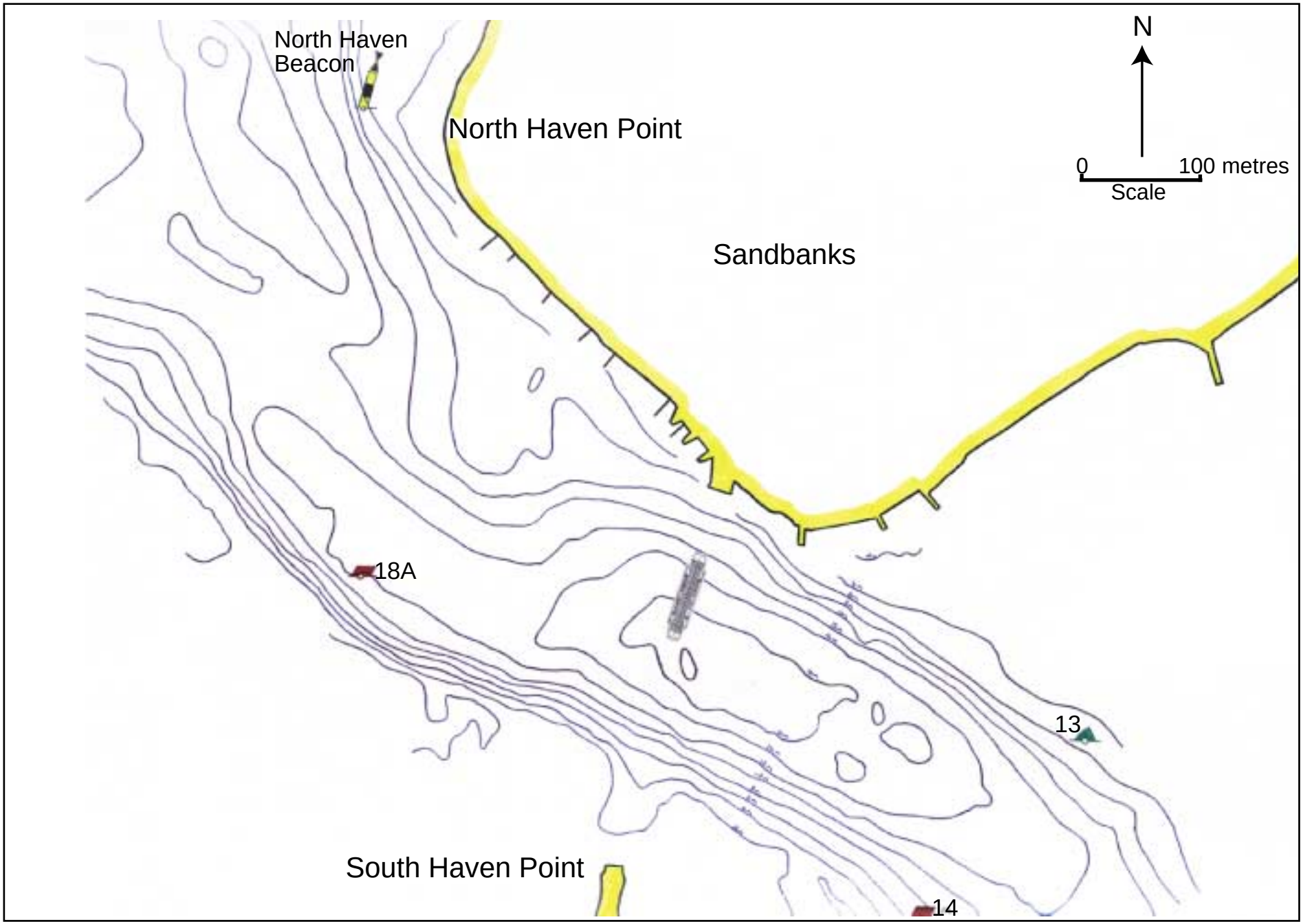
The distance from the North Haven beacon to the chain ferry is about 0.25 mile and it took several minutes for the XODs to travel between the beacon and the chain ferry. With the XODs having to sail close to the Sandbanks side of the channel, to keep out of the way of *Condor Vitesse*, they encountered the chain ferry in two distinct groups. The wind direction was off Sandbanks, creating a lee close to the land. As the chain ferry moved off the slipway, the second group of XODs could see a gap, between the chain ferry and the slipway, through which they hoped to pass. However, the gap was effectively closed when the skipper decided to reverse the chain ferry out of the way of the leading group. As the second group entered the lee of Sandbanks, the XODs lost steerage and they drifted with the ebb tide, which was strong at the entrance **(see Section 1.2)**. There was no effective alternative means to steer the yachts away from the chain ferry. Had the XODs been in the centre of the channel, or even on the southern side, where the tide is stronger for racing purposes, they would have maintained steerage and travelled faster, making their passage safer and quicker past the chain ferry.

An uninterrupted run across the entrance takes the chain ferry about 3 minutes. With a distance of about 250m to travel, this gives a speed of about 83m per minute. The direction of the crossing is at right angles to the main flow of craft entering and leaving the harbour.

Once the fast ferry had passed, the skipper decided to leave the slipway, albeit at slow speed. From the wheelhouse on the starboard bow (when travelling from north to south), the skipper could see the racing XODs approaching and the gap between the leading yachts and the main body of the fleet. It was through this gap that he attempted to take the chain ferry. The chain ferry skipper did not realise the effects that the lee of Sandbanks would have on the XODs' steerage way. However, realising that the leading XODs had lost the wind, he had to reverse the chain ferry, allowing the leading group to pass to the south. This action brought him into a situation where four XODs were set on to the side of the chain ferry, at which point he stopped the ferry **(see Diagram 3)**.

The skipper was faced with a difficult decision. He had a responsibility to maintain a timely and regular service, while simultaneously fulfilling his obligation of keeping out of the way of numerous craft. Although, in hindsight, it would have been more prudent to have waited for the XOD fleet to pass, to do so might well have resulted in an unnecessary delay to the ferry service.

When the chain ferry began her service, the Act made her give way to all vessels. This is still the case. When the Act came into force, it was not envisaged that about 8,500 pleasure craft (including permanently moored and visiting craft) would be using Poole Harbour, as at present. At that time, the majority of vessels were commercial, with only a small number of pleasure craft. However, today's commercial shipping movements are significantly less than those of pleasure craft, especially so in the summer season.



The position of *Bramble Bush Bay* when the incident occurred

Diagram 3

The MAIB supports the PHC's recommendation **(see Section 1.7)** *to pursue the intended change to the right of way rule for the chain ferry*.

In the past, there have been a number of incidents involving the chain ferry and pleasure craft, including near-misses and collisions. Some yachts and motor boats have caught the chain ferry's ramp, or drifted alongside, when she was on the slipways. Some craft have collided with the chain ferry, when the latter was stationary in mid-channel waiting for other craft to clear. Jet-ski riders and wind-surfers have been clinging to the chain ferry's grab lines, which were put there for that very purpose. There have also been several other collisions each year with motor boats and yachts reported alongside the chain ferry. While none of the incidents have had serious consequences, there is a potential for more serious accidents to happen.

Because of these incidents, the company installed grab lines along the sponsons on either side of the chain ferry to augment the fixed ladders to the shell doors **(see Diagram 1)**. These were used to effect in this incident as *X17*'s two crew members were able to hold on to them until the owner was rescued, and the other crew member was able to move to the fixed ladder and to safety through the shell door.

While a significant number of collisions occur when the chain ferry is stationary at the slipways, it is when she is underway that the more serious accidents could happen. If doubt could be removed as to the intentions of the chain ferry's skipper while making the crossing, the crew of passing craft could make a better judgment as to how best to avoid the ferry. However, if the chain ferry had the right of way (except for commercial shipping) it would have to be more readily apparent that she was about to leave the slipways and become underway. A more visual and audible system of warning would be needed on the ferry so that craft would have warning of the chain ferry's impending departure and when she was underway.

The PHC's recommendation **(see Section 1.7)** for *improvements to the signals indicating the movement of the ferry are investigated* is supported by the MAIB.

The PHC's risk assessment **(see Section 1.4.3)** identified that there was risk of collision owing to the lack of wind at the entrance to the harbour. The PHC had considered this issue and would like to see the use of engines, where so fitted, be made obligatory. It would be desirable for craft without an engine to carry a small one, or for boats to be towed through the entrance. However, the PHC predicted that this issue would be contentious and would generate opposition, which would delay any change in the bylaws to solve this problem.

2.4 THE FOUNDERING OF *X17* AND THE RESCUE

Parkstone Yacht Club's safety boats had difficulty in effecting a rescue of the XODs, in that one of the RIBs damaged one of her propellers, and the crew of one of the launches thought that the tide was too strong. It was opportune that the RNLI lifeboats were close by at the time of the incident, and were able quickly to tow away three of the four XODs from the side of the chain ferry. However, while the last yacht, *X17*, was being towed away from the chain ferry and into the water turbulence, she nearly capsized over to starboard and took on board a great deal of water.

The combination of probable reasons, which caused *X17* to nearly capsize, are:

- the towline was too short;
- the towline was made fast to a point on the yacht which was well aft of the stem, producing a turning moment; and
- the direction of tow away from the chain ferry made the yacht heel to well over to starboard.

This caused alarm and the towline was quickly released and the force of the ebb tide pushed *X17* back alongside the chain ferry.

The strong ebb tide was causing a great deal of turbulence, and hence buffeting of the yacht against the side of the stationary chain ferry. The yacht heeled over to starboard, and took in even more water and, as she foundered, was drawn under the chain ferry, taking with her the owner's wife, who had not managed to hold on to the grab lines. The RNLI lifeboat had seen the owner's wife go under, and went quickly round the ferry to rescue her after she had surfaced on the other side. She was in the water for a shorter time than her husband and the crew member, who were still hanging on to the grab lines and being subjected to breaking waves.

The inshore lifeboat had trouble retrieving the two men from alongside the ferry, because of the strong tide and the buffeting of the waves, which placed the boat in danger. However, with the lifeboat's co-operation, the inshore lifeboat was towed away from the chain ferry, together with the owner, who was being held alongside by her crew. Once the inshore lifeboat had gone, and with the assistance of the skipper, *X17*'s crew member was able to move along to a side ladder and climb on board the chain ferry and enter through the side shell door.

SECTION 3 - CONCLUSIONS

3.1 CAUSES AND CONTRIBUTING FACTORS

3.1.1 The collision

1. *Condor Vitesse*'s late arrival after the races had started, which surprised the XOD crews and caused them to move to the north of the channel nearer to Sandbanks. [2.2]

- The race officer did not obtain the current shipping movements just before the start of the race. [2.2]

- It would have been too late to reschedule the races for the late arrival of C*ondor Vitesse* as they had already started, and would arrive as the fleets were leaving the harbour. [2.2]

- The safety/rescue craft attending the races did not inform the race officer and the fleets that *Condor Vitesse* was approaching. [2.2]

- The XOD crews were surprised by the incoming fast ferry and had to sail to one side of the channel to keep out of her way. [2.2]

2. The north-easterly wind caused a lee close to the Sandbanks shore and the XODs to lose steerage way, while approaching the chain ferry. [2.3]

3. The chain ferry's skipper's decision to leave the slipway and to head for a gap between the leading group of XODs and the rest of the fleet. [2.3]

- Given the direction and strength of the wind, the race officer could have given more thought to preventing the bunching-up of yachts as they passed though the entrance. [2.2]

- The race from the start point to the entrance was nearly down wind, which meant that fleets stayed close together. [2.2]

- With start-times for each class of yachts only 5 minutes apart, there would have been concentrated groups of boats passing through the entrance. [2.2]

- The skipper had a responsibility to maintain a timely and regular service, while simultaneously fulfilling his obligation to keep out of the way of numerous craft. [2.3]

4. The chain ferry skipper did not realise the effects that the lee of Sandbanks would have on the XOD's steerage way. [2.3]

5. As the second group entered the lee of Sandbanks, the XODs lost steerage way and drifted with the ebb tide. [2.3]

6. Realising that the leading XODs had lost the wind, the skipper had to reverse the chain ferry, allowing the leading group to pass to the south. [2.3]

7. The gap between the ferry and the Sandbanks slipway was effectively closed when the skipper decided to reverse the chain ferry out of the way of the leading group. [2.3]

8. There was no effective alternative means to steer the yachts away from the chain ferry. [2.3]

9. The action of reversing brought the skipper into a situation where four XODs were set on to the side of the chain ferry. [2.3]

3.1.2 The foundering

1. While the last yacht, *X17*, was being towed away from the chain ferry, she took onboard a great deal of water and nearly capsized over to starboard. This aggravated the situation when *X17* landed back alongside the chain ferry and into the turbulence. [2.4]

2. The attempt to tow *X17* off the chain ferry failed for the following possible reasons:

   - the towline was too short;
   - the towline was made fast to a point on the yacht which was well aft of the stem, producing a turning moment; and
   - the direction of tow away from the chain ferry made the yacht heel to well over to starboard. [2.4]

3. *X17*, on open boat, took in water, from the turbulence of the strong ebb tide against the side of the stationary chain ferry, heeled over to starboard and took in even more water and was drawn under the chain ferry, taking with her the owner's wife. [2.4]

3.2 OTHER FINDINGS

1. The criteria for racing guidelines required the race officer to obtain the "latest" shipping movements, but it is unclear whether "latest" meant scheduled or actual shipping movements. [2.2]

2. Had they been sailing against the wind, by the time they had reached the entrance, the boats would have been more spread out. [2.2]

3. If doubt could be removed as to the intentions of the chain ferry's skipper while making the crossing, the crew of passing craft could make a better judgment as to how to avoid the ferry. [2.4]

4. If the chain ferry had right of way (except for commercial shipping) it would have to be more readily apparent that she was about to leave the slipways and that she was underway. [2.2]

5. Parkstone Yacht Club's safety boats had difficulty in effecting a rescue of the XODs, in that one of the RIBs damaged one of her propellers and the crew of one of the launches thought that the tide was too strong. [2.4]

6. It was opportune that the RNLI lifeboats were nearby and were able quickly to tow away three of the four XODs from the side of the chain ferry. [2.4]

7. The inshore lifeboat had difficulty retrieving the two men from alongside the ferry, because of the strong tide and the buffeting of the waves, which placed the craft in danger. [2.4]

8. The grab lines along the sponsons were used to effect as *X17*'s two crew members were able to hold onto them until the owner was rescued and the other crew member was able to move to the fixed ladder. [2.3]

9. The PHC's recommendations to pursue the intended change to the right of way for the chain ferry, and to investigate improvements to the signals indicating the movement of the ferry, will contribute to the prevention of a similar accident. [2.3]

SECTION 4 - RECOMMENDATIONS

Poole Harbour Commissioners (PHC) is recommended to:

1. Enhance co-ordination of communications between the PHC's port control, the chain ferry, yacht club race officers and rescue boats, before and during racing events.

Parkstone Yacht Club is recommended to:

2. Review, and if necessary improve, the effectiveness of the rescue boats and their towing capabilities.

Marine Accident Investigation Branch
June 2002