

Report on the investigation of
a collision between the yacht
Bluebell of Warsash
and an unidentified ship
about 23 miles south of the Needles, Isle of Wight

7 August 1999

MAIB 1/3/169

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Report No 20/2000

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 causes 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.

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GLOSSARY OF ABBREVIATIONS AND ACRONYMS

GPS	Global positioning system
GRP	Glass reinforced plastic
m	metre
MAIB	Marine Accident Investigation Branch
mm	millimetre
RCS	Radar cross-section
RNLI	Royal National Lifeboat Institution
RYA	Royal Yachting Association
UTC	Universal co-ordinated time
VHF	Very high frequency
VMG	Velocity made good

SYNOPSIS

At 2330 (UTC + 1) on 7 August 1999, while on passage under sail from Guernsey to Gosport, the 10.44m long yacht *Bluebell of Warsash* collided with an unidentified ship on a south-westerly course about 23 miles south of The Needles, Isle of Wight. Solent Coastguard notified The Marine Accident Investigation Branch (MAIB) at 0148 (UTC + 1) on 8 August 1999. Captain P Kavanagh carried out the investigation.

Two of the yacht's crew members were down below, the other two were on deck keeping a navigation watch. Although they were steering 038° magnetic, the yacht was making 336° over the ground, due to the westerly-setting tidal stream, and the light to moderate easterly wind. The two watchkeepers saw a brightly illuminated ferry ahead showing her green starboard navigation light. They deduced that she was on a near reciprocal course to their own, and would pass clear down the starboard side of the yacht. They did not have the advantage of a radar set. They also saw a ship on their starboard bow showing her red port side light and deduced that she was crossing ahead. The yacht was approaching the northern edge of the south-west bound recommended direction of traffic flow, between the Dover Strait and the Casquets traffic separation schemes.

The ship passed ahead of the ferry and then closed the yacht very quickly. The yacht's helm was put over to port to lessen the impact. One of the watchkeepers threw himself over the port side just before the ship's bulbous bow struck the yacht on the starboard side amidships. Four minutes after the impact, the skipper of the yacht made a "Pan Pan" message on VHF channel 16. He gave their position, and conveyed details of the collision and man overboard. Solent Coastguard responded to the message. Shortly afterwards, the skipper reported that the yacht was not taking in water and that they would make for The Needles to rendezvous with the Yarmouth RNLI lifeboat.

The lifeboat met the yacht and advised that two crew members be airlifted to hospital. This was carried out at 0258. *Bluebell of Warsash* was then towed by the lifeboat to Yarmouth, arriving at 0651.

The predicted tracks of a number of south-west bound ships, which had reported to Dover Coastguard while passing through the Dover Strait were plotted up to the time of the collision. Some of them were found to have been in the vicinity of the accident. Despite making a number of enquiries, and taking paint samples from one particular ship for comparison with paint left on the yacht, the ship involved in the collision has remained unidentified.

The causes of the accident were that the ship failed to take avoiding action in compliance with her obligation as a give-way vessel under the *International Regulations for Preventing Collision at Sea*, and also that the two watchkeepers on the yacht did not appreciate the ship was on a collision course early enough to take effective avoiding action.

The MAIB has no safety recommendations to make at this time.

Photograph 1



Bluebell of Warsash in a boatyard at Yarmouth, Isle of Wight

PARTICULARS OF *BLUEBELL OF WARSASH* AND ACCIDENT DETAILS

Vessel details (Photograph 1)

Owners	:	Claude and Olga Fielding, Robert and Olive Hathaway, Peter Cooke and Elizabeth Thomas
Built	:	August 1997 at Warsash
Construction	:	GRP
Type	:	Frances 34 Pilot House
Length Overall	:	10.44m
Displacement	:	6 tonnes
Engine	:	Yanmar 3JH2E

Accident details

Time and date	:	2330 (UTC + 1) on 7 August 1999
Location	:	Latitude 50° 17.2' N Longitude 001° 28.1' W Approximately 23 miles south of The Needles, Isle of Wight
People on board	:	4
Injuries	:	Various injuries to 3 of the crew
Damage	:	Large area of damage to the starboard side of the hull and to interior fittings

SECTION 1 - FACTUAL INFORMATION

1.1 NARRATIVE

1.1.1 Events leading up to the collision

All times are UTC + 1

The yacht *Bluebell of Warsash* was on passage from Saint Peter Port, Guernsey, to Gosport (see **Chart extract 1 opposite**). Her charted course was 040° towards the Bembridge Ledge east cardinal buoy, Isle of Wight. At 2300 on 7 August 1999, two of the four crew members on board took their navigational watch, after having had 3 hours of rest below. The relieved skipper and off-watch mate went below, the former retiring to a couch on the starboard side of the pilothouse, and the latter to the main saloon.

The yacht was sailing close-hauled on the starboard tack making a speed of between 4 and 5.5 knots, and steering 038° by the magnetic compass.

The two watchkeepers made a brief alteration of course of 30° to port to avoid a potential collision situation with a ship. They then returned to their original course and engaged the automatic helm. On the starboard side they saw a number of ships showing their port sidelights, indicating that they were travelling from east to west.

The watchkeepers' attention was drawn to a brightly illuminated ship (probably a ferry) ahead and to starboard, showing a green sidelight. They also saw, further to starboard at least 15° on the bow, a second ship, which was showing two white masthead lights and a red sidelight. By this time, the yacht was nearing the northern edge of the south-west recommended direction of traffic flow between the Dover Strait and Casquets traffic separation schemes. The watchkeepers deduced that the ferry, being on a near reciprocal course to their own, would pass clear down the yacht's starboard side, and that the other ship would cross ahead at right angles. They lost partial sight of the ferry for a while, when the second ship passed between themselves and the ferry. As the ferry would pass clear, their attention was turned solely to the second ship, and believing that she would pass close by, they considered taking avoiding action by altering course to starboard. However, they decided not to do so because they thought this would bring them too close to the ferry.

Subsequently the two watchkeepers realised that the second ship was on a collision course and was then too close to take avoiding action, but that an alteration to port would lessen the force of the impact. The starboard bow of the ship struck the yacht's starboard side amidships. Just before the impact, one of the watchkeepers shouted a warning, and then threw himself backwards over the port side into the sea. On surfacing, he swam away from the ship to avoid her propeller.

After the impact, the off-watch mate went to the cockpit, took down the sails and switched on the deck lights. The man overboard was located, hauled into a dinghy, which was being towed behind the yacht, and then helped back on board.



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1.1.2 Events after the collision

At 2334, the skipper of the yacht made a “Pan Pan” message on VHF radio channel 16, which was responded to by Solent Coastguard. His message said that in (Latitude) 50° 17’ N and (Longitude) 001° 28.5’ W they had been hit by a passing vessel; a man had gone overboard and been recovered into the dinghy, and the yacht’s rigging had been damaged. A minute later, the Yarmouth RNLi lifeboat was tasked to go to the yacht’s position. At 2340, the man who had gone overboard was reported to be back on board the yacht. Two minutes later, the skipper said that they did not need medical assistance, and that although the yacht was damaged to the waterline, it was not taking in water. They would make their way towards The Needles, where they would rendezvous with the Yarmouth lifeboat, calling the coastguard every 15 minutes.

They could not engage the engine as the propeller was fouled. At 0025 the skipper reported that the man who had gone overboard was fine. However, the other crew members had minor injuries, and he said that his own back was hurting. The yacht was taking in water, but the manual pumps were coping.

At 0104 the Yarmouth lifeboat came alongside the yacht. On request from the coastguard, the yacht’s crew members were assessed medically by the RNLi personnel. They reported that they had put the skipper on oxygen and that he had had a triple heart by-pass two years before. Another crew member needed stitches to his ear. They recommended that these two casualties be evacuated by rescue helicopter. The status of the “Pan Pan” was cancelled.

The lifeboat took the yacht in tow, and by 0258 the rescue helicopter had evacuated the two casualties. The lifeboat arrived at Yarmouth at 0651.

1.2 ENVIRONMENTAL CONDITIONS

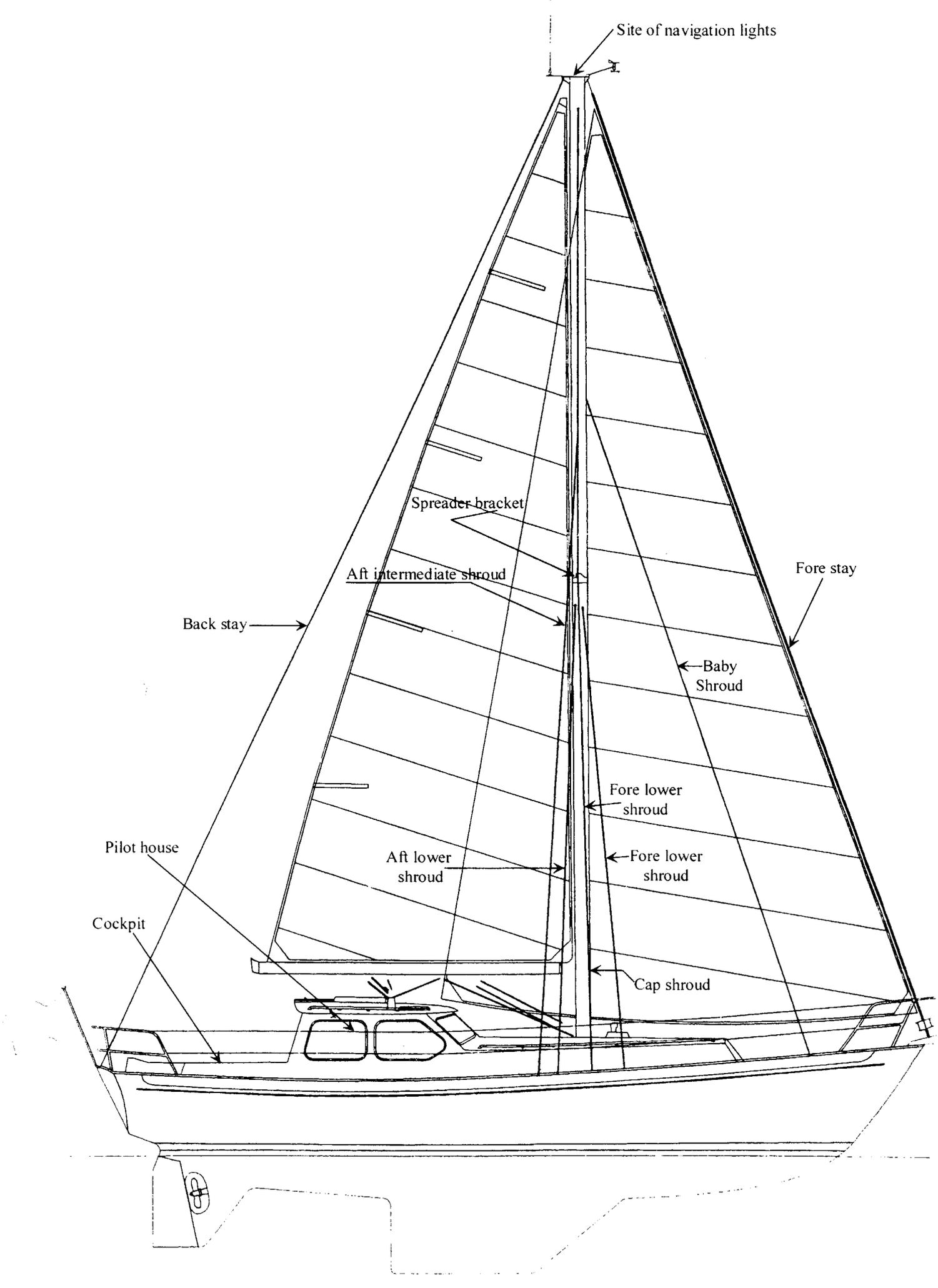
The wind was easterly, between 10 and 15 knots. The weather was fine, and clear with a slight sea. There was no moonlight. The tide was on neaps and the tidal stream had been setting westerly for about four hours before the collision.

1.3 *BLUEBELL OF WARSASH*

1.3.1 The yacht

The yacht was a type *Frances 34 Pilot House*, built by Victoria Yachts of Warsash for offshore cruising. Its principal feature was a sheltered pilothouse incorporated into the accommodation (see **Figure 1 opposite**). The yacht could also be steered from the open cockpit at the aft end, which was the case at the time of the accident. The hull (Oxford blue in colour, with red anti-fouling) and deck were made of hand-laid fibreglass to Lloyd’s specification.

Figure 1



The yacht was cutter rigged but without a bowsprit. The top of its one mast was about 13.65m above the waterline. This was supported by a forestay and a backstay. On each side of the mast was a cap shroud, which passed through a spreader attached to the mast by a bracket, an after intermediate shroud, two fore and after lower shrouds, and a fore baby stay. All stays and shrouds were stainless steel wires of 8mm diameter.

The navigational equipment consisted of:

GPS interfaced with a *Furuno* colour plotter (from which a print was obtained (see **Figure 2 in Section 2.2**)) and to an autopilot;

Autopilot *Autohelm ST5000* + repeater at external helm position; and

Autohelm ST50 which included a *Tridata* system (log, depth and temperature), wind system, *Tridata* repeater at external helm position, and a VMG (velocity made good)/close hauled repeater.

A radar set was not carried.

A *Firdell Blipper* radar reflector was fitted towards the top of the mast.

A *Shipmate* VHF radio set and a hand-held VHF set were fitted.

Other relevant equipment included a 2.7m dinghy with a small outboard engine, two foghorns, a high intensity spotlight and a six-man inflatable liferaft.

The engine could also be started and controlled from the cockpit helm position, as well as from the pilothouse.

1.3.2 The two watchkeepers

One watchkeeper was 41 years old and had logged 4363 miles of sailing in 76 days, of which 96 hours were at night on board yachts. He had gained the RYA Day Skipper Practical certificate in 1992 and the RYA Yachtmaster Offshore Shorebased certificate in 1994.

The other watchkeeper was 69 years old and held an RYA Coastal Skipper certificate. He had sailed with the skipper in a variety of yachts for over 15 years, and had made several English Channel crossings by night.

The skipper/part owner was 73 years old and the off-watch mate was 57 years old.

1.3.3 The damage (Photographs 2 - 6)

The hull amidships had three major vertical splits from near deck level to the waterline. There were external scrape marks in this area and various small splits, some below the waterline.

Photograph 2



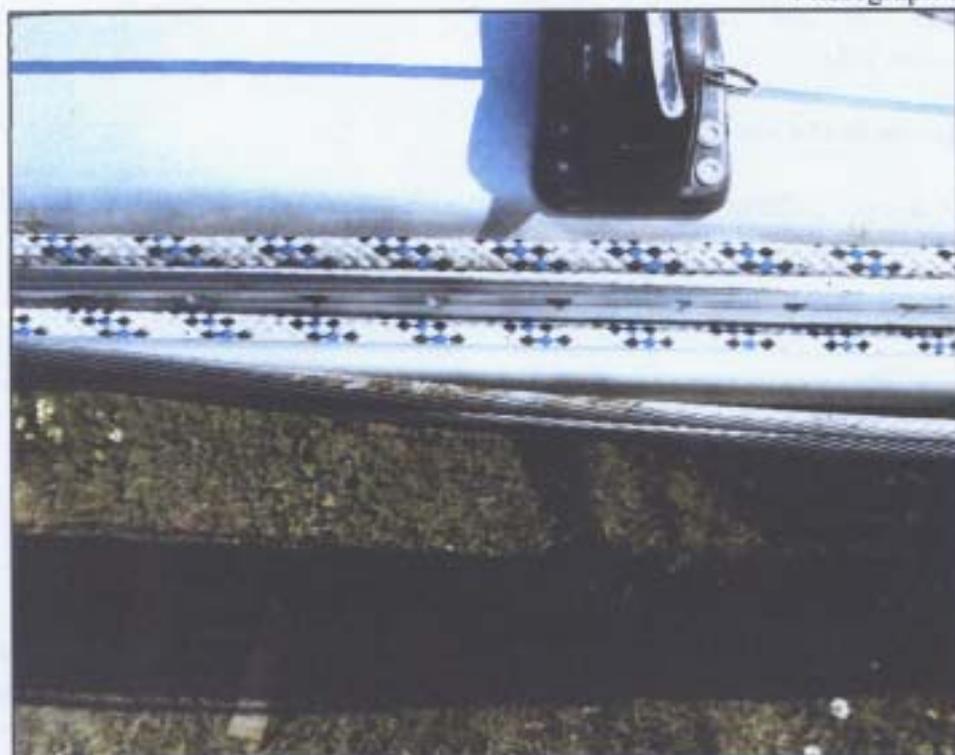
A view of the external damage to the starboard side of the hull

Photograph 3



Another view of the splits, looking aft

Photograph 6



The spreader bracket (above) and the cap shroud (centre)
both of which had pale blue paint deposits on them

On the starboard side, at the after end of the pilothouse, the wooden rubbing strake was split, with deposits of red paint on it (see Sections 1.4 and 2.2).

There was a split along the join between the pilothouse and the deck, in way of the forward end on the starboard side.

The internal damage was extensive; transverse bulkheads had been compressed and distorted. A through-hole fitting from the sink had been displaced.

The starboard side spreader had been snapped off and lost overboard, leaving the bracket, on which there were pale blue deposits. Similar coloured deposits were also found embedded in the starboard cap shroud wire and on the mast itself.

A section of the cap shroud wire, the spreader-bracket, and a section of the wooden strake, were sent to the Home Office's Forensic Science Services for analysis (see Section 1.4).

1.3.4 Injuries to the yacht's crew

The skipper suffered extensive bruising to his back, and swelling over his right kidney. He also sustained a fractured left shoulder blade and muscular damage.

The off-watch mate had a cut and a bruise to his head.

One watchkeeper had a laceration to his right ear.

The other watchkeeper had no injuries but was tired from being in the sea.

1.4 THE SEARCH FOR THE UNIDENTIFIED SHIP

The accident occurred towards the northern edge of the south-west recommended direction of traffic flow, between the Dover Strait traffic and the Casquets traffic separation schemes (see Chart extract 1). The main direction of traffic flow between these two schemes is about 072°/252°. From the yacht's watchkeepers' description of the direction of travel of the colliding ship, it is reasonable to assume that she might have passed through the Dover Strait earlier in the day.

On 1 July 1999, a mandatory reporting system CALDOVREP was introduced for all vessels over 300gt. In this scheme:

north-east bound traffic is required to report to Gris Nez Traffic via VHF radio channel 13 when abeam the Bassurelle lightbuoy; and

south-west bound traffic is required to report to Dover Coastguard via VHF radio channel 11 not later than crossing a line drawn from North Foreland to the Belgian and French borders.

Photograph 4



A general view of the interior damage to the starboard side

Photograph 5



Damage to the wooden strake with red paint deposits

All south-west bound vessels are tracked by the coastguard's radar sets and entered into its computer database. When vessels reach the western end of the traffic separation scheme near the Greenwich buoy, the radar computer will drop the vessels' echo, noting the last positions.

The coastguard's *Full Ship Reports* of a number of ships that had passed through the area that day were sent to the MAIB. Given each ship's approximate course and speed, their predicted tracks were plotted from their last radar positions to the time of the collision. The distance from the Greenwich buoy to the collision position is about 58 miles. A number of the south-west bound ships had also reported to Portland Coastguard before entering the Casquets traffic separation scheme. This is about 40 miles from the collision position. These ships' positions were plotted since the time of the collision.

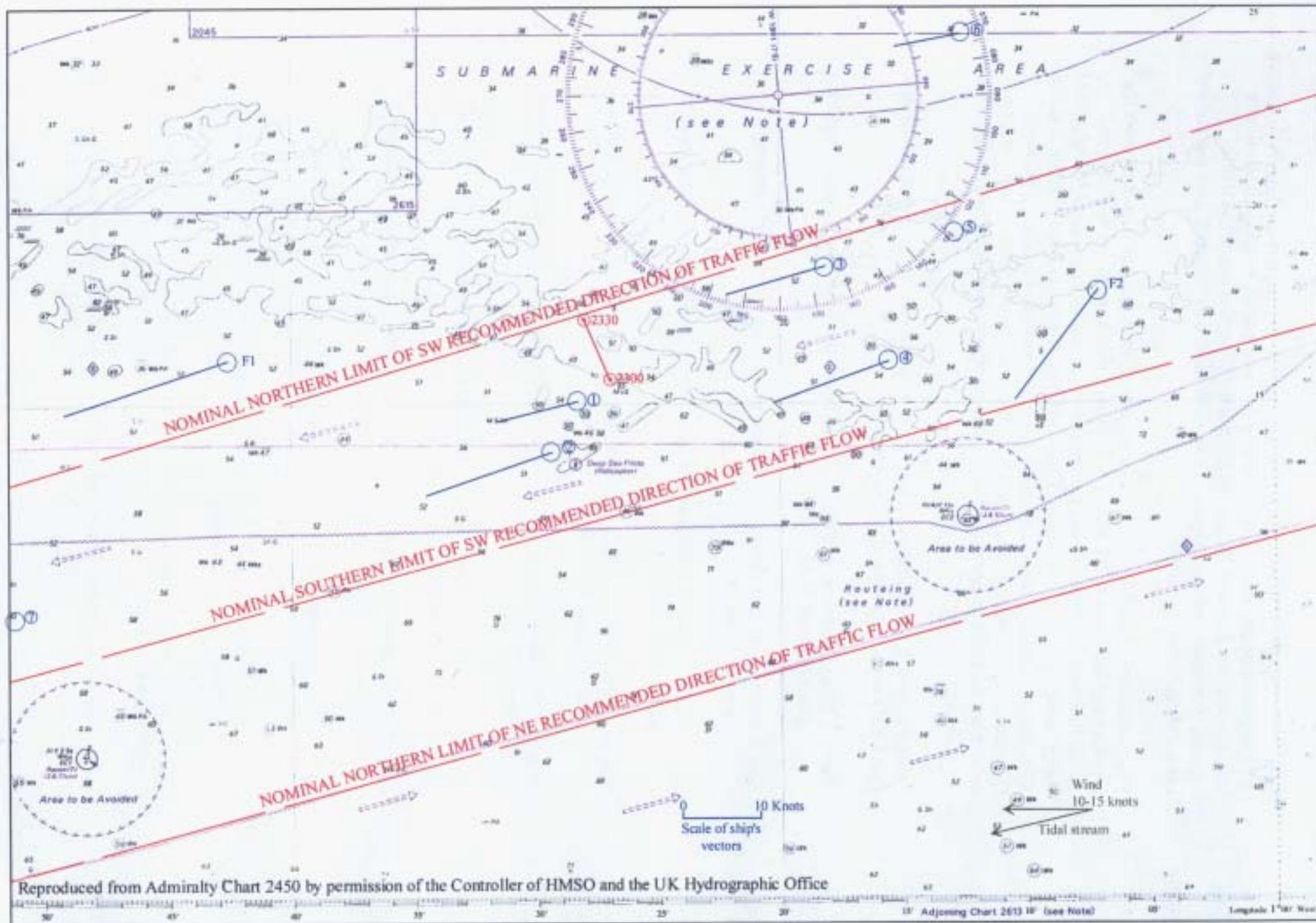
From the plots, it was found that a number of ships were in the vicinity of the collision (see **Chart extract 2 overleaf**). These were:

- Ship 1. a laden general cargo ship of 2,061gt bound from Germany to Spain, making a speed of about 11 knots;
- Ship 2. a laden container ship of 9,548gt bound from Antwerp to Italy, making a speed of about 15 knots;
- Ship 3. a laden tanker of 1,088gt bound from Norway to Nantes, making a speed of about 13 knots;
- Ship 4. a bulk carrier of 15,932gt in ballast bound from Norway to Gabon, making a speed of about 15.5 knots;
- Ship 5. a laden general cargo ship of 536gt on passage to Runcorn, making a speed of about 12 knots;
- Ship 6. a laden general cargo ship of 1,272gt on passage from Antwerp to Ireland, making a speed of about 9 knots; and
- Ship 7. a laden general cargo/container ship of 6,310gt on passage from Rouen to Morocco, making a speed of about 16 knots.

From further enquiries, it was established that at 2330, two passenger ferries were in the vicinity:

- F1. was in position Latitude 50° 16.6' N Longitude 001° 42.6' W on a course of 250° making 25 knots; and
- F2. was in position Latitude 50° 18' N Longitude 001° 07' W on a course of 215° making 17 knots.

Of the nine ships identified above, ship 1 seemed to best fit the description given by the two watchkeepers, since it was similar in type and size, and had a bulbous bow.



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Approximate positions of ships plotted to 2330

Adjoining Chart 2613 (see Note)

Longitude 1° 00' West

An MAIB inspector visited ship 1, and received full co-operation from the master. Paint samples were taken from the blue sections of the hull, as well as the boot topping. They were sent to Forensic Science Services for comparison with the deposits left on the parts taken from the yacht, as mentioned in **Section 1.3.3**. Forensic Science Services determined that the blue paint samples did not match.

An extract from the ship's logbook was obtained, and the entries for various timed positions were plotted on the chart. The last entered position before the time of the collision was 2300, and using the previous position of 1840, the 2330 position on the chart extract is an estimated one.

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.

This section firstly examines how the yacht and a ship collided in good visibility and weather, and secondly the difficulties in identifying a ship, which has not stopped after being involved in an accident.

2.2 THE COLLISION

2.2.1 *Bluebell of Warsash*

To summarise the two watchkeepers' evidence:

- they were steering 038° magnetic;
- they saw a ship ahead and to starboard, which was brightly illuminated and was assumed to be a ferry, showing a green sidelight;
- the ferry was on a near reciprocal course and would pass down their starboard side;
- they saw another closer ship, about 15° on the starboard bow showing a red side light and two white masthead lights;
- this ship was assumed to be moving from east to west and crossing their bow at right angles;
- the ship passed in front of the ferry; and
- shortly afterwards, realising that a collision was imminent, the watchkeepers on board the yacht altered course to port.

At the time of the collision only two ferries, for the purposes of this report known as F1 and F2, were in the vicinity; F1 was moving away and F2 was crossing the shipping lane. F2 was on passage from Portsmouth to Saint Malo. Given the position of F2 and projecting her course, the ferry would have entered the "Area to be Avoided" and closed the EC2 buoy. Furthermore, the projected course line would not have brought her to Cap de la Hague, but much further to the east on the northern coast of the Cherbourg peninsula. However, if the track line of 215° is shifted 10 miles to the west, so that it rounds Bembridge Ledge (off the east coast of the Isle of Wight) and passes off Cap de la Hague, it represents the usual route taken by ferries between Portsmouth and Saint Malo (see **Chart extract 1**). The shifted track places the ferry close to the

accident scene and fits in with the watchkeepers' evidence. Therefore, it is concluded that F2's reported position was incorrect.

The yacht's course made good over the ground, was about 336° during the 30 minutes before the collision (see **Figure 2 overleaf**). A reconstruction of the collision has been made (see **Figure 3 overleaf**). It has been assumed that the bearing of the ship did not alter. A relative bearing line of 15° has been drawn from the 2300 position and a course line of 252° (the recommended direction of the traffic flow) has been assumed for the ship. These two lines cross at A. The distance between 2330 and A is about 5.5 miles, which makes the speed of the ship about 11 knots.

An alternative scenario is that the ship was, in fact, crossing ahead and altered course towards *Bluebell of Warsash* at the last minute, possibly in an attempt to avoid a collision with the yacht.

The difference between the yacht's heading, and the course made good over the ground, was about 60°. This is substantial. When a crossing ship is relatively fine on the bow, it could be assumed that she would safely pass ahead. However, if the great difference between the heading and the actual course made good over the ground is not taken into consideration, the assumption is incorrect, and the yacht could be on collision course with the ship. The standard method used to determine whether an approaching vessel is on collision course is to take a series of compass bearings of the vessel. If the bearings remain constant or do not substantially change, a risk of collision exists. One of the two watchkeepers was monitoring the bearing of the approaching ship against a shroud or stanchion and was initially of the opinion that the ship would cross ahead.

Without radar, assessing the range of an approaching vessel can be difficult at night because the points of reference to the observer's eye are limited to the navigation lights. By day this task is much easier because the observer has more visual references by which to make a judgment.

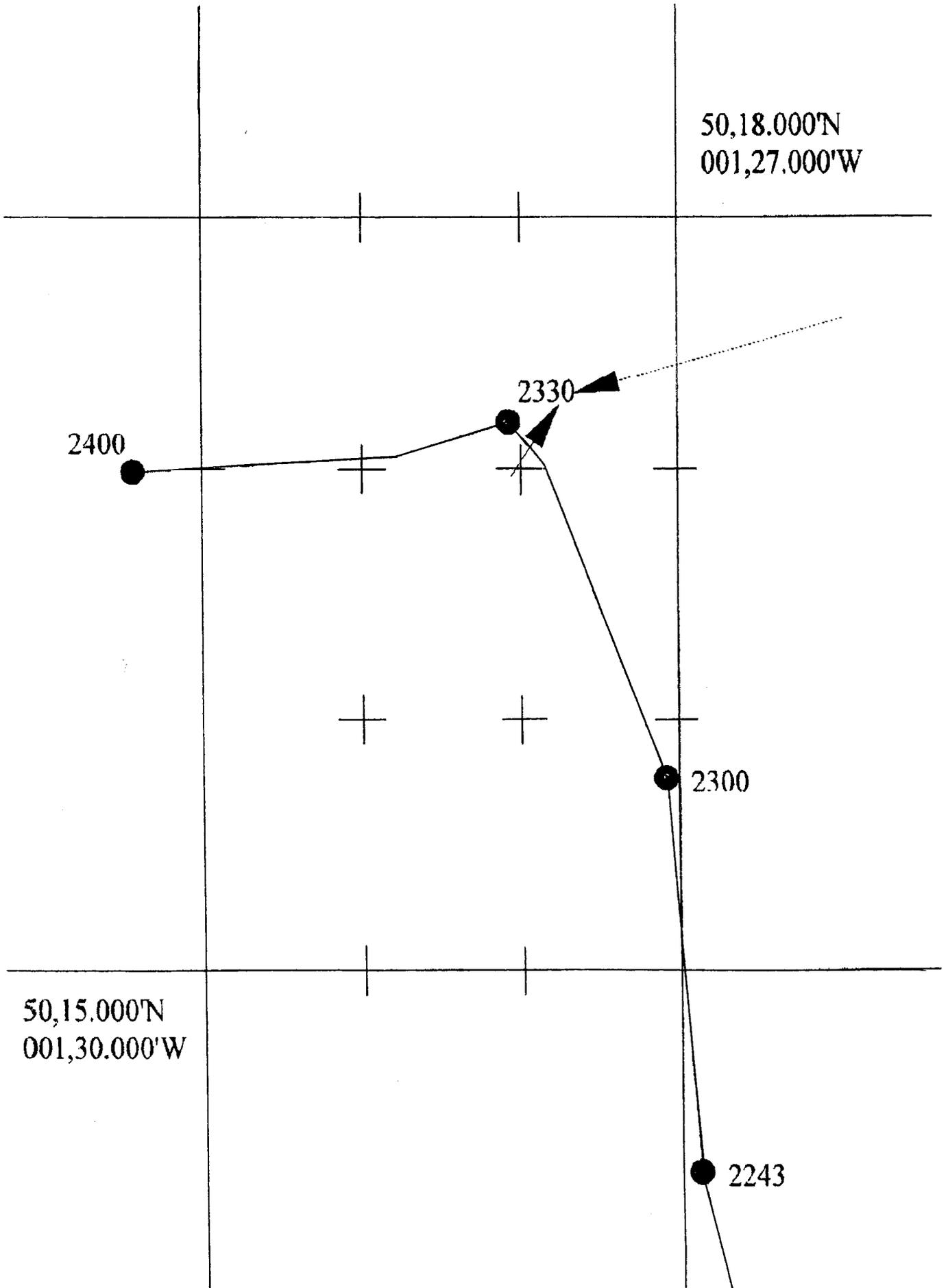
The two watchkeepers on the yacht could have illuminated their sails with a powerful light or directed the light towards the ship to indicate the yacht's presence to those keeping watch on the ship.

Despite the closeness of the ferry on the starboard side, the yacht could have altered course to starboard to avoid a collision with the ship. An alteration to starboard into wind and tide would have brought the yacht to a stop (or into *stays*) in a very short distance. Such action would have been in accordance with Rule 2(a) of the *International Regulations for Preventing Collisions at Sea*, which states:

Nothing in these Rules shall exonerate any vessel, or the owner, master or crew thereof, from the consequences of any neglect to comply with these Rules or of the neglect of any precaution which may be required by the ordinary practice of seamen, or by the special circumstances of the case.

Although the watchkeepers considered altering course to starboard, they decided not to do so because they thought this would bring them too close to the ferry.

View from yacht's plotter



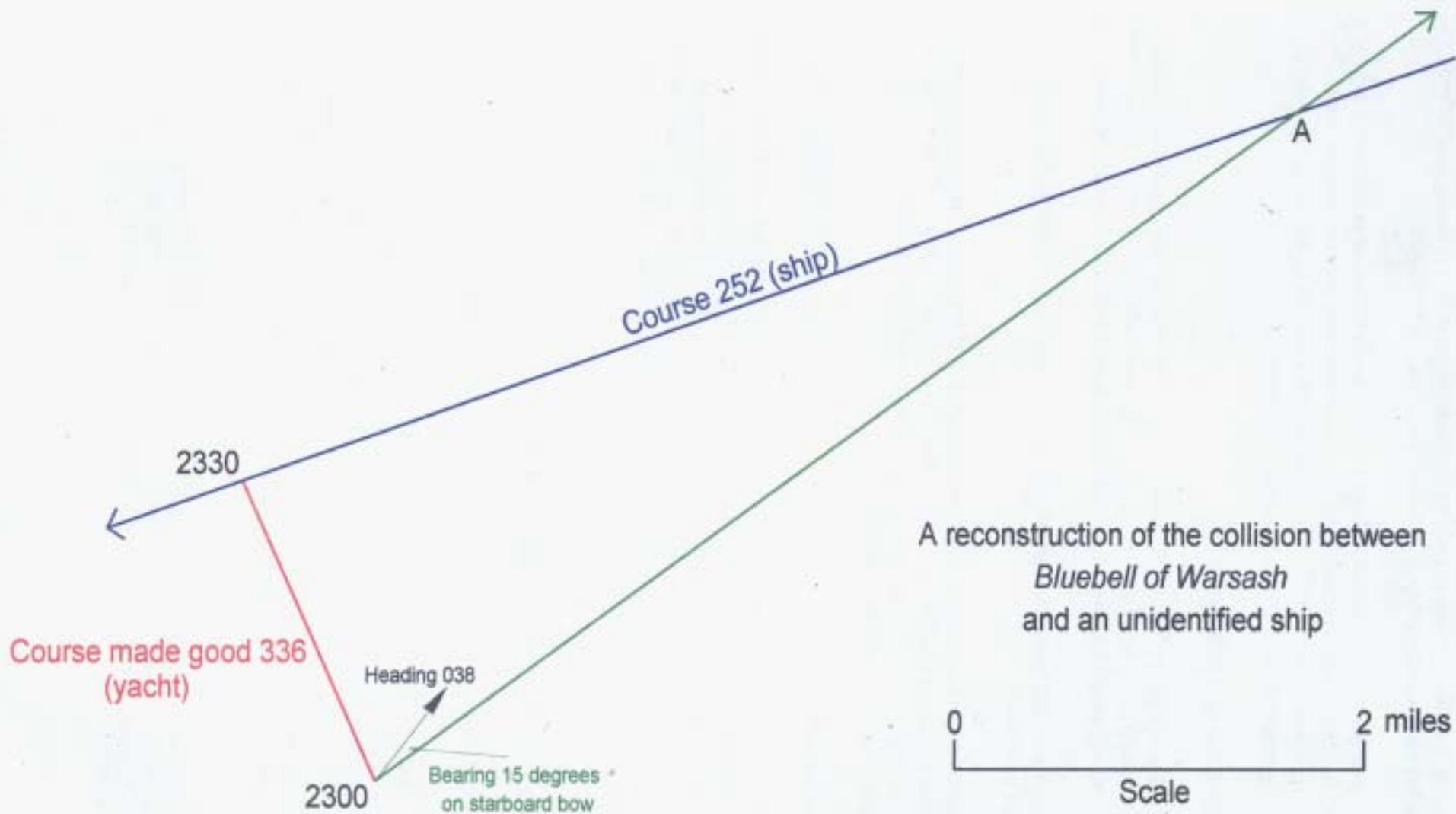


Figure 3

Assuming that the ship was already on a collision course at this stage, such action would have been in compliance with Rule 17 (a) (ii) which states:

that the vessel required to keep her course and speed may however take action to avoid collision by her manoeuvre alone, as soon as it becomes apparent to her that the vessel required to keep out of the way is not taking appropriate action in compliance with these Rules.

In accordance with Rule 17 (b):

When from any cause, the vessel required to keep her course and speed finds herself so close that collision cannot be avoided by the action of the give-way vessel alone, she shall take such action as will best aid to avoid collision.

Although avoiding action was eventually taken by the yacht, it was far too late to prevent a collision.

The watchkeepers decided to alter course to port, and the yacht was struck on the midships section of the starboard side. The scrape marks suggest that the alteration to port was effective in deflecting the forces of the impact. Had the impact been full-on, the consequences might have been far worse.

2.2.2 The unidentified ship

The ship was a power-driven vessel underway as defined in Rule 3 of the *International Regulations for Prevention of Collisions at Sea*. Except where Rule 9 (Narrow channels), Rule 10 (Traffic separation schemes), and Rule 13 (Overtaking) apply, a power-driven vessel underway by Rule 18 (Responsibilities between vessels) shall keep out of the way of a sailing vessel, when in sight of one another. This did not occur, the reason for which is unknown.

2.3 THE SEARCH FOR THE UNIDENTIFIED SHIP

Referring to the ships in **Section 1.4** and to **Chart extract 2**:

Ship 1 closely matched the description given by the yacht watchkeepers, and the plot of her estimated position at 2330 was calculated from a position fixed 30 minutes before. The 2330 position assumes that she did not deviate from her course in the interim period. If so, she was several miles to the south at the time of the accident, but, so far as the accuracy of the plotting allows, she was the closest. Her speed was within 0.5 knot of the estimation made in the reconstruction.

Ship 2 was distinctive in that she was a container ship and was easily recognisable as such. She had reported to both the Dover and Portland Coastguards, and the position on the chart is fairly accurate. Her hull was

black, and her speed was 15 knots, which was somewhat different from the estimated speed of the ship in the reconstruction.

Ship 3 was a small tanker, and her plot derives only from the Dover Coastguard information; the accuracy is only moderate. Her hull was red.

Ship 4 was a moderate-sized bulk carrier. She reported to both Dover and to Portland, and the accuracy of her plot is fairly high. She was too far behind and to the south to be involved in the incident, and her speed was too high - 15.5 knots.

Ship 5 was a small coaster and reported only to Dover. She was on passage to the west coast of England. The plot on the chart extract assumes that she kept to the traffic lane once she had left the Dover traffic separation scheme. However on these passages, coasters usually keep to the coast, and she was probably further to the north, as was the case with ship 6. For this reason the plot of this ship is highly dubious, and no vector has been assigned to her. The colour of her hull was grey.

Ship 6 was another small coaster well to the north of the incident, but had reported to Solent Coastguard in response to the yacht's "Pan Pan" broadcast.

Ship 7, is shown on the chart extract simply because she was within the area, but she was too far ahead.

The pale blue paint deposits were located high up on the yacht's mast. They were probably left there by the upper section of the bow of the ship, when the yacht heeled over on impact. The Forensic Science Services could not match the darker blue paint samples from ship 1 with the pale blue deposits from the yacht. However, the red paint on the wooden strake looks similar to that of the boot topping of ship 1.

With regard to ship 1's 2330 position, it is speculated that ship 1 altered course to starboard (to the north) for the crossing ferry and to avoid a collision situation developing. Once she had passed around the ferry's stern, she altered course to port to resume her original heading. This placed her to the north and in carrying out her actions she may have altered course back into the path of the yacht. However, this contradicts the watchkeepers' evidence, in that the ship, with which the yacht was in collision, passed in front of the ferry. Furthermore it has not been determined which ferry was in that exact area, as discussed in **Section 1.4**.

Although no further information is available, there is a possibility that another ship was involved. Only ship 6 and F2 responded to the "Pan Pan", but it would have been apparent to listening stations that the yacht's predicament had stabilised quickly and that it was for the emergency services to act upon. Nevertheless, watch officers on ships in the area should have noted down the position given by the yacht, and calculated how far they were from her. If the unidentified ship had done this, the officer of the watch might have realised that his ship could well have been involved in the collision. Even if the officer had come to this conclusion, he did not inform the coastguard.

The lack of positive evidence, together with too many inconsistencies, has meant that it has been impossible to positively identify the ship involved in the collision.

SECTION 3 - CONCLUSIONS

3.1 FINDINGS

3.1.1 *Bluebell of Warsash*

1. A collision occurred between the yacht, *Bluebell of Warsash*, and an unidentified cargo ship at about 2330 (UTC+1) on 7 August 1999, in a position about 23 miles south of The Needles, Isle of Wight. This position is on the northern edge of the south-west recommended direction of traffic flow between the Dover Strait and the Casquets traffic separation schemes. [1.1.1]
2. There were four crew members on board; two were down below resting and the other two were on deck keeping a navigational watch. [1.1.1]
3. The yacht was close hauled on the starboard tack and steering 038° magnetic to shape a course for the Bembridge Ledge cardinal buoy. The course over the ground was about 336°. [1.1.1, 2.2.1]
4. It was night with good visibility, the weather was fine and the wind was easterly 10 to 15 knots. The tide was on neaps and the tidal stream had been setting westerly for about 4 hours before the accident. [1.2]
5. The two watchkeepers saw a ferry on a near reciprocal course showing a green sidelight, and also a crossing ship showing a red sidelight. [1.1.1]
6. They deduced that the ferry would pass safely down their starboard side that the ship would cross ahead. [1.1.1]
7. The ship passed between the yacht and the ferry and then the two watchkeepers realised that a collision was about to occur with the ship. [1.1.1]
8. They altered course to port to lessen the impact. [1.1.1]
9. Just before the impact, one of the watchkeepers threw himself into the sea. [1.1.1]
10. The impact, mainly from the bulbous bow of the ship, was to the midships section of the starboard side of the yacht. [1.1.1, 1.3.3, 2.2.1]
11. A “Pan Pan” message was broadcast by the skipper of the yacht at 2334 and was responded to by Solent Coastguard. [1.1.2]
12. It became apparent, within 10 minutes of the accident that the yacht would not founder, the crew were not badly injured and that the crew member, who had gone overboard had been recovered. [1.1.2]
13. Only two ships responded to the “Pan Pan” message. [1.1.2, 2.3]

14. When the yacht rendezvoused with the Yarmouth lifeboat, the RNLI personnel decided, because two of the yacht's crew members needed medical attention, they should be evacuated by helicopter. [1.1.2]
15. The evacuation took place at 0258 and the lifeboat, with the yacht in tow, reached Yarmouth at 0651. [1.1.2]
16. The yacht sustained extensive damage to her hull on the starboard side and to internal fittings and fixtures. [1.3.3]
17. Pale blue and red paint deposits were left on the yacht's mast and on the wooden strake respectively. [1.3.3]

3.1.2 The unidentified ship

1. The ship involved in the collision was south-west bound and had probably passed through the Dover Strait earlier that day. [1.4]
2. Dover and Portland Coastguards had recorded information of ships which had reported to them that day. [1.4]
3. The predicted tracks of the ships were plotted up to the time of the accident [1.4]
4. Seven ships were identified as being in the vicinity of the accident at the time. [1.4]
5. One of the ships resembled the description given by the two watchkeepers on the yacht and was the closest to the yacht at the time of the accident. [1.4]
6. Paint samples were taken from the hull of this ship but forensic examination could not match them with paint deposits left on the yacht. [1.4]
7. Further enquiries established that there were two ferries in the vicinity. [1.4]
8. Doubt has been raised as to the position given by one of the ferries and it is believed that she may have been further to the west and may have been the one which was observed by the two watchkeepers. [1.4, 2.2.1]
9. It is possible that the ship altered course towards *Bluebell of Warsash* at the last minute, possibly in an attempt to avoid a collision with the yacht. [2.2.1]

3.2 CAUSES

3.2.1 *Bluebell of Warsash*

1. The watchkeepers on the yacht did not appreciate the ship was on a collision course in sufficient time to take effective avoiding action. [2.2.1]

3.2.2 The unidentified ship

1. The ship failed to take avoiding action in compliance with her obligation as a give-way vessel under the *International Regulations for Preventing Collisions at Sea*. [2.2.2]

3.3 CONTRIBUTORY CAUSES

3.3.1 *Bluebell of Warsash*

1. The substantial difference between the heading and the course made good over the ground. [2.2.1]
2. The two watchkeepers did not take a series of compass bearings to determine if the ship was on a collision course. [2.2.1]
3. The difficulty of assessing, at night, the range and relative movement of an approaching ship by sight alone. [2.2.1]
4. The disadvantage of not having a radar set. [2.2.1]
5. The two watchkeepers could have illuminated their sails with a powerful light or directed the light towards the ship to indicate the yacht's presence to those keeping watch on the ship. [2.2.1]
6. Despite the closeness of the ferry, the yacht could have altered course to starboard into wind and tide, which would have brought her into stays and thereby avoided the collision with the ship. [2.2.1]
7. The possibility that the ship was, in fact, crossing ahead and altered course towards *Bluebell of Warsash* at the last minute, possibly in an attempt to avoid a collision with the yacht. [2.2.1]

3.4 OTHER FINDINGS

1. The evidence, from the various sources, has been insufficient and inconsistent to establish positively which ship was in collision with *Bluebell of Warsash*. [2.3]

SECTION 4 - RECOMMENDATIONS

The MAIB has no safety recommendations to make at this time.

**Marine Accident Investigation Branch
June 2000**