

Investigation of
the foundering of the 4.26m (14ft) dinghy

SAMPHIRE OF WELLS

on the North Norfolk Coast
with the loss of two lives on
16 December 1999

3/15/2000

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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.

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GLOSSARY

ALB	All weather lifeboat
cm	centimetre
ETA	Estimated time of arrival
ILB	Inshore lifeboat
m ³	cubic metres
MAIB	Marine Accident Investigation Branch
MRCC	Maritime Rescue Co-ordination Centre
RNLI	Royal National Lifeboat Institution

SYNOPSIS

Shortly after 1730 on 16 December 1999 the Maritime Rescue Co-ordination Centre (MRCC) Yarmouth informed the Marine Accident Investigation Branch (MAIB) that a dinghy with two people on board was overdue on a passage from Burnham Overy Staithe to Wells-next-the-Sea. Later that evening the MAIB was informed that one body had been located. An investigation was initiated the next day and was conducted by the Chief Inspector of Marine Accidents, Rear Admiral John Lang.

At approximately 1130 on 16 December 1999, two men manning an open 4.26m (14ft) dinghy, *Samphire of Wells*, left Burnham Overy Staithe on the north Norfolk coast for the 6½ mile passage to Wells harbour. The weather was fine, it was sunny, there was a light to moderate westerly breeze, and high water neaps was predicted shortly before noon. The object of the passage was to take the dinghy to Wells to do some work on it and lay it up for the winter. It had spent the previous few weeks in Burnham Overy harbour.

The dinghy never arrived at Wells. During the early afternoon the partner of one of the occupants became concerned when it didn't appear, and raised the alarm. A search and rescue operation was initiated and at 1850 the Wells RNLI all-weather lifeboat (ALB) found the body of one of the two men floating upright in a pool among shoal water to the west of the Wells harbour channel. He was wearing a fully inflated lifejacket. When eventually landed, he was seen by a doctor and declared dead on arrival.

The second man was found dead 6 days later in the sea some 7 miles to the north of Cromer. He too was wearing a fully inflated lifejacket.

There were no witnesses to the accident. Although one or two pieces of wreckage were found and were thought to have come from the missing dinghy, this could not be proved beyond doubt. Neither the dinghy, nor its remains, have ever been found.

The precise cause of the loss cannot be determined with accuracy. The investigation concludes that the dinghy most probably foundered while making the short open sea passage between Burnham Overy harbour and the entrance to Wells harbour.

The report makes recommendations to improve the chances of survival for occupants of small boats who find themselves thrown into the water.

SECTION 1 - FACTUAL ACCOUNT

1.1 Narrative of events

At approximately 1130 on 16 December 1999 two men manning a 4.26m (14ft) dinghy, *Samphire of Wells*, left Burnham Overy Staithe on the north Norfolk coast for Wells harbour, a passage of approximately 6½ miles.

The weather and visibility were good.

There is evidence to indicate that the dinghy and its occupants were last seen by a birdwatcher at about 1150. He reports seeing a small boat heading east to seaward of the breaking waves on the shoreline and to the east of the Burnham Overy harbour entrance where the River Burn enters the sea. One person was seen on board, but the witness has said that this does not mean a second person was not present; he could have been hidden from view by the first.

The boat's anticipated time of arrival at Wells was about 1300, but when it failed to appear and became overdue, the alarm was raised by the partner of one of the two occupants.

An immediate search of the foreshore was initiated and, at 1530, both Wells RNLI lifeboats (Mersey class all weather boat and a D class inshore boat) were launched by Mr Richard Cracknell, Honorary Secretary of Wells RNLI lifeboats, and also father of one of the missing dinghy's occupants. He also requested the Sheringham lifeboat be launched because, had the accident occurred at the entrance to Wells harbour, the eastgoing tide would have taken the dinghy and any survivors towards Blakeney. The two Wells lifeboats concentrated their search along the stretch of coast between Overy and Wells harbours.

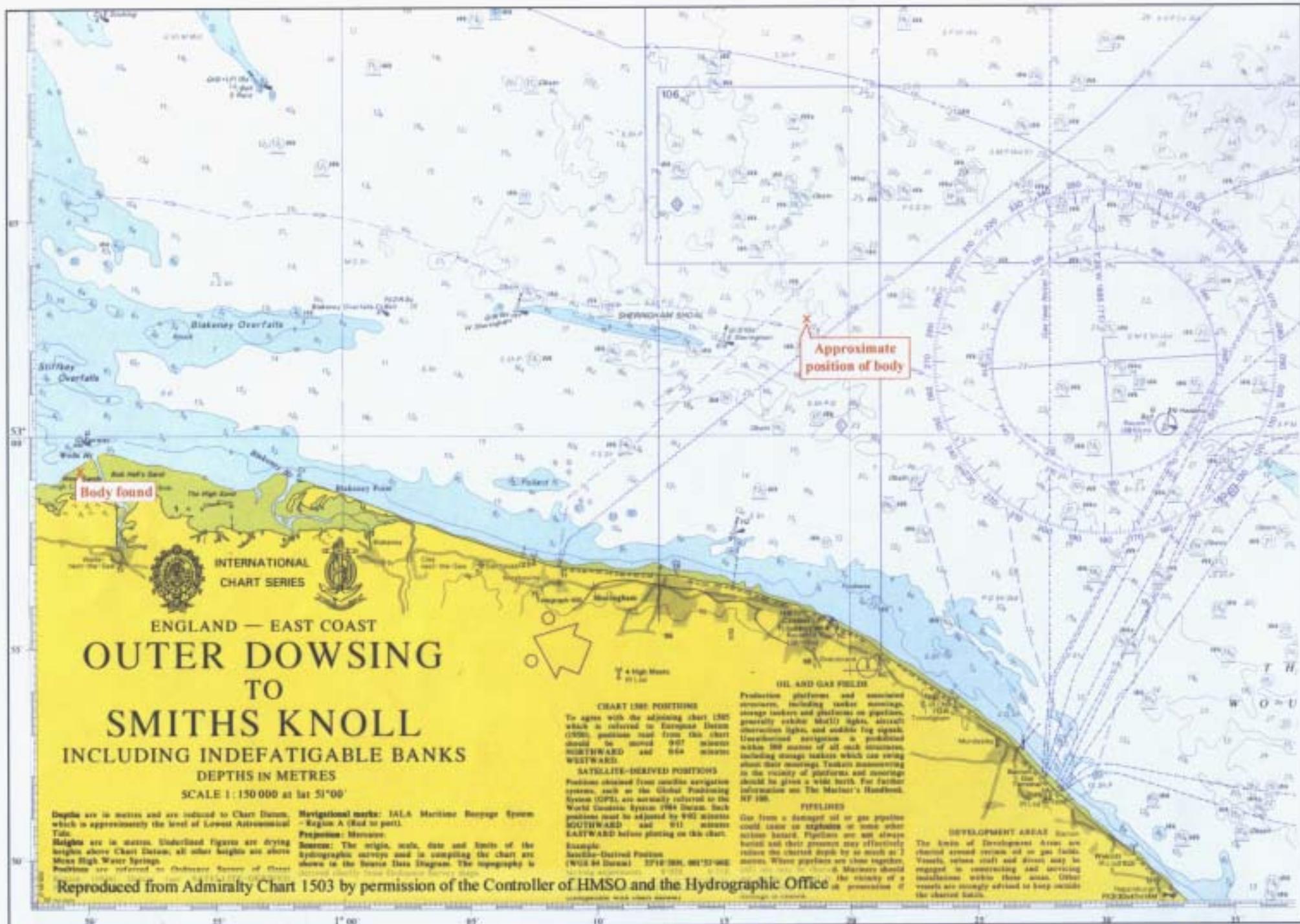
The search was joined by the Cromer lifeboat, an RAF helicopter from Wattisham, Suffolk, and shore search parties from the coastguard.

At 1855 the body of one of the two men, Mr William Cracknell, was found in the sea near the entrance to Wells harbour wearing a fully inflated lifejacket. He was transferred to the helicopter and landed ashore where he was declared dead on arrival. There was no sign of the second man, but a cushion and spar thought to be from the dinghy were recovered.

The search continued into the night but was suspended at 2200, and reconvened at 0645 the next day.

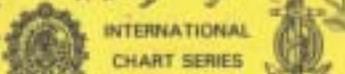
Parts of what appeared to be the missing dinghy were found on the day of, and on the days following, the accident.

The body of the second man, Mr Lionel Fortescue, also found to be wearing a fully inflated lifejacket, was found 10 miles offshore and north of Cromer on 22 December, six days after the accident.



Body found

Approximate position of body



INTERNATIONAL CHART SERIES

ENGLAND — EAST COAST
OUTER DOWSING TO SMITHS KNOLL
 INCLUDING INDEFATIGABLE BANKS

DEPTHS IN METRES
 SCALE 1:150 000 at lat 51°00'

Depths are in metres and are reduced to Chart Datum, which is approximately the level of Lowest Astronomical Tide.
 Heights are in metres. Underlined figures are drying heights above Chart Datum; all other heights are above Mean High Water Springs.
 Positions are referred to Observer Series of Stars.

Navigational marks: IALA Maritime Buoyage System - Region A (Red to port).
 Pronunciation: Metres.
 Sources: The origin, scale, date and limits of the hydrographic surveys used in compiling the chart are shown in the Source Data Diagram. The topography is derived from the Admiralty Survey.

CHART USE POSITIONS
 To agree with the adjoining chart 1307 which is referred to European Datum (ED50), positions east from this chart should be altered 907 metres NORTHWARD and 664 metres WESTWARD.

SATELLITE-DERIVED POSITIONS
 Positions obtained from satellite navigation systems such as the Global Positioning System (GPS), are normally referred to the World Geodetic System 1984 Datum. Such positions must be adjusted by 902 metres SOUTHWARD and 611 metres EASTWARD before plotting on this chart.

Example:
 Satellite-Derived Position
 (WGS 84 Datum) 51°10' 00" N, 001°32' 00" W

OIL AND GAS FIELDS
 Production platforms and associated structures, including tanker moorings, storage tankers and pipelines on pipeline, generally exhibit (MUT) lights, aircraft obstruction lights, and audible fog signals. Unauthorised navigation is prohibited within the limits of all such structures, including storage tankers which can swing about their moorings. Tankers mooring in the vicinity of platforms and moorings should be given a wide berth. For further information see The Mariner's Handbook, NP 106.

PIPELINES
 Gas from a damaged oil or gas pipeline could leak or explode at some other point inland. Pipelines are not always buried and their presence may effectively reduce the charted depth by as much as 2 metres. Where pipelines are close together, mariners should be aware of the possibility of a pipeline crossing.

DEVELOPMENT AREAS
 The limits of Development Areas are shown around certain oil or gas fields. Vessels, whose craft and crews may be engaged in constructing and servicing installations within these areas. Other vessels are strongly advised to keep outside the charted limits.

Reproduced from Admiralty Chart 1503 by permission of the Controller of HMSO and the Hydrographic Office

1.2 The dinghy

Samphire of Wells was reported as being a 4.26m (14ft), clinker built, wooden dinghy with a 10hp Yanmar diesel powered inboard engine owned by Mrs L Grimshaw. It was built by Wright & Son of Ipswich in 1964. Apart from having a small foredeck and an afterdeck, she was otherwise open. Steering was by tiller and a feature of the boat was its wide transom. It was fitted with a bilge pump operated by a float switch. The pump was connected to the battery which was, in turn, connected to a solar charger.

The dinghy's maximum speed was estimated to be between 4 and 5 knots. No additional buoyancy was fitted.

Mr William Cracknell, one of the two casualties in the accident, was a local boatbuilder in Wells, and had recently carried out a complete restoration of the craft and had also added some lead ballast. Photographs taken of her after this restoration, demonstrated workmanship of a high order. Mr Clive Drew, a marine engineer of Wells, had also installed a new Yanmar diesel engine. The dinghy had been re-launched on the slipway at Burnham Overy Staithe, on Saturday 18 September. It had been used, successfully, once since then.

It is probable that oars, a bailer and an anchor were carried.

Although it cannot be verified, the freeboard aft with two adult occupants was thought to be in the order of 30 to 40 cms.

The dinghy was kept on a buoy a little upstream from the Boathouse at Burnham Overy Staithe. She floated on her mooring without any trouble, and it can be assumed that her clinker construction had taken up well. Before that she had been kept out of the water and under cover. There is no evidence of serious leaks following her re-launch.

The purpose of the passage on 16 December was to take *Samphire of Wells* from Overy Staithe to Wells, so that Mr Cracknell could continue working on it and lay it up for the winter.

Two options were available for taking the dinghy to Wells:

- putting it on a trailer and towing it;
- making a short sea passage.

The latter was selected. The trip could reasonably be expected to take about 1½ hours, and involved a short stretch in open water.

1.3 The occupants

The two occupants of the dinghy were both local men. Mr Fortescue was aged 64 and was houseman to the Wells lifeboat station. Mr Cracknell was a local boatbuilder and aged 39.



Samphire of Wells

The two men were friends. Mr Cracknell was a competent dinghy helmsman and was well acquainted with the general area, with sufficient experience to 'read' the sea and waves. He was also used to handling dinghies with inboard engines. Because of other commitments, he had not spent as much time afloat in recent months as in previous years, but he loved small boats. Mr Fortescue was less experienced. His knowledge of local waters and the likely conditions was, by all accounts, less good than that of his younger colleague.

Both men were regarded as being careful and conscientious. Mr Cracknell was known as someone who did not take unnecessary risks. This particular passage had already been postponed because of unsuitable weather.

Both men were wearing warm clothing. Mr Cracknell was wearing a waterproof jacket and chestwaders. Mr Fortescue had a fleece, waterproof trousers and wellington boots. Neither man was dressed for immersion in cold sea water.

Mr Cracknell is known to have donned his manually inflatable lifejacket before setting off; it is believed Mr Fortescue did the same. When their bodies were eventually found, both lifejackets were being worn, and were fully inflated. The buoyancy chambers were, in both cases, found high on their heads. Neither lifejacket was fitted with a crotch strap or a spray hood.

Postmortems on both victims indicated they died from drowning.

1.4 The environment

The weather on 16 December was described as good. The wind was westerly force 2 - 3 with a moderate sea and good visibility. It was a sunny day.

The weather on the preceding days had been less good. A north westerly breeze force 3 - 4 had been blowing on 14 December. By 0600 the next day it had increased to gale force and had veered to the north. The shallow waters of the North Sea and the Wash approaches meant that sea conditions quickly followed any increase and subsequent decrease in wind strength. After a blow, the underlying swell tends to lag behind the reducing sea state.

With a westerly wind blowing in the late morning of 16 December, the general conditions at Overy Staithe would, in bright sunshine, have appeared benign.

According to an eyewitness who was walking among the shoreline dunes between the River Burn and Holkham when the dinghy is thought to have foundered: "The sea was neither rough nor smooth, but there was plenty of white water between the beach and the boat".

High water at Immingham on 16 December was at 1128, and at Wells bar was 1148 with a predicted height of 4.8m. It was neaps.

Coastguard readings of the deepwater sea temperature on 16 December was 9°C. The water temperature in Wells harbour at 1330 on 17 December was 5°C.

1.5 The coast, and harbour approaches

The north Norfolk coast in the vicinity of Wells-next-the-Sea, Burnham Overy Staithe and Brancaster Staithe consists of a low lying, marsh studded, pine clad, coastline with sand-dune edged saltings facing the North Sea. These are punctuated by numerous channels, creeks and shifting sands. In good visibility and quiet weather, this stretch of coast is described in *The Tidal Havens of the Wash and Humber*¹ by Henry Irving as “beautiful, hospitable and varied”. The same sailing directions state that at night or in fog “...it must be one of the most inhospitable coasts in England.”

The distance by sea from Overy Staithe to alongside the quay at Wells-next-the-Sea is about 6½ nautical miles. By road it is 4½ statute miles.

The channel from Overy Staithe to sea is not marked, but it is fairly easily defined at the landward end. It is less easily discernible to seaward. It is used during the summer months, but less often in winter. Although navigable by small craft, it dries at low water, and local knowledge is recommended. Its most notorious feature is the bar at the northern end. The very narrow channel across it is not easy to define, and the sea conditions are known to be very deceptive. In rough weather the breaking water at the bar is very obvious, but can be less so in calmer conditions. Those familiar with these waters state that some very steep seas can appear without warning. A 20ft clinker built boat had foundered close by some months previously, and had broken up rapidly after being pounded by breaking waves. The wreck of this craft still lies above the high water mark to the east of the channel.

Once the bar at the entrance to Burnham Overy has been crossed, a boat making for Wells would alter course to the east, and steer a straight course slightly to seaward of the buoys marking the harbour channel entrance. The buoys would be visible throughout, and care would be taken not to close the shoreline and breaking water to starboard.

The shoreline between the two harbours is a shallow bay, featuring extensive sands backed by dunes and pine trees.

The approach to Wells harbour is well marked. The main channel, known as the Run is about two miles long. It is marked by lit port and starboard hand buoys. The actual channel and water depths are subject to frequent changes, and the buoys are moved accordingly. The southern end of the channel is bordered by a dyke on its western side. The seaward approaches are marked by the Wells Fairway buoy.

¹ “The Tidal Havens of the Wash and Humber” by Henry Irving is published by Imray, Laurie & Wilson.

Mariners are warned that in heavy weather, and especially if there “is even a suspicion of north in the wind”, the bar can be treacherous with heavy breaking seas and surf. The skipper who has no familiarity with Wells is strongly advised not to attempt an approach in such conditions. The sea state at the bar is more pronounced when the ebb is running out of the channel.

Like the entrance to Wells harbour, a bar with very similar characteristics marks the seaward end of the Burnham Overy harbour channel. It is treated with great respect by users, and is avoided when the wind is blowing from the north. Mr Irvine’s sailing direction states: “The sand-bar outside the harbour moves so frequently that even the local boatmen have difficulty in keeping up to date with its leading features.....and even moderate weather from anywhere in the north causes murderous breaking swell which is intensified by the fierce ebb which runs out of the harbour mouth.”

A strong east going tidal stream sets across the harbour entrance from about 2 hours before high water. At neaps this is weaker, and on 16 December was judged to be running at a maximum rate of 1 knot.

1.6 Bars

A characteristic common to the approaches to the harbours to both Wells-next-the Sea and Burnham Overy is that the seaward ends to both channels features a bar.

A bar is a shoal or a bank of sand, shingle or gravel thrown up by the opposing actions of the sea and a river at a river mouth or harbour entrance. It can be permanent, but will often change, especially after severe weather. Both water depths and the overall extent can vary with the passage of time.

Bars can act as breakwaters, and will usually contain relatively calm water on the inshore side. A feature of bars is that at certain states of the tide (particularly when there is an ebb outflow), and in certain weather conditions involving onshore winds, severe water turbulence and short sharp seas will be generated. Such phenomena are usually well documented in most sailing directions, and sometimes, but not always, referred to on the appropriate charts. It is generally accepted that local sources provide the best advice on when to cross, or when to avoid doing so.

Few seamanship or navigation textbooks explain the inherent dangers of crossing bars at certain states of the tide and weather. Bars can be very deceptive following bad weather.

Crossing a bar in calm, settled conditions, with enough water under the keel is straightforward and perfectly safe. At other times it can be extremely dangerous. Telling the difference between the two is not necessarily straightforward as the sea conditions can be very deceptive.

1.7 The search and rescue

Having left Overy Staithe at about 1130, the dinghy and its two occupants were expected to arrive at Wells at around 1300. The first time anyone suspected a problem was at about 1400, when Mr Fortescue's partner began to feel anxious when he didn't appear for lunch. She made a few inquiries, and because both men had direct connections with the Wells lifeboat station, she contacted the Hon Secretary, who was also the father of one of the two occupants. One of the first questions to arise in several people's minds was whether either occupant was carrying a mobile telephone. They weren't.

The Hon Secretary contacted MRCC Yarmouth shortly after 1520 and requested that both the class D inshore lifeboat (ILB) and the all-weather Mersey class lifeboat (ALB) be paged. A search and rescue operation was initiated immediately.

The two Wells lifeboats were later joined by those from Sheringham and Cromer, and an RAF Sea King helicopter from Wattisham, Suffolk. Local coastguards were tasked to conduct a search of the shoreline.

There was no sign of the dinghy, no indication as to what might have happened, and no idea as to where she, or her occupants, might be. The search area extended from Scolt Head in the west, to Blakeney in the east. With daylight fading fast nothing was found.

At 1850, the Wells ALB using lights saw the reflective tape on a lifejacket. As the lifeboat got closer, it was found attached to one of *Samphire of Wells*' occupants; Mr Cracknell. He was found floating vertically, with the lifejacket around his head. He was discovered to the west of the Wells Harbour channel and in a pool among the shoals that would dry as sandbanks at low water. The victim was picked up by the Wells ILB, and then transferred to the helicopter, but a doctor declared him dead on arrival ashore.

The search was suspended that evening at 2232 and reconvened at 0700 the next day. Another full search of the marshes, mudflats, and inshore waters was made for the other occupant, but without success.

The search was terminated at 1632 on 17 December. Some further wreckage was discovered but could not be positively identified as coming from the missing dinghy. The second occupant was not found.

On 22 December a small merchant ship passing some 7 miles off the Norfolk coast north of Cromer, spotted a man in the sea wearing an inflated lifejacket. He appeared to be dead. The Cromer lifeboat was launched to recover him and subsequently transferred the deceased to the Wells lifeboat. It was Mr Fortescue. Once again the lifejacket was found to have ridden up over the ears. He was recovered in a position some 22 miles from the Burnham Overy Harbour bar.

Postmortems on both victims revealed the cause of death as drowning.

1.8 Wreckage

The wreck, or the hull, of *Samphire of Wells* has never been found. Some items, almost certainly thought to have come from her, have been recovered. They include two cushions, a bilge keel strake, part of the foredeck coaming, components of what appears to be the engine cover and a boat cover spar. These have been locally identified as almost certainly coming from *Samphire*, but absolute identification has not been possible. There was greater doubt about other items, including a broken oar.

The state of the items that were recovered suggested that they might have been ripped off the parent boat with some force.

Mr Cracknell's unopened lunchbox and an 'instant' camera were also recovered.

1.9 Lifesaving apparatus

So far as it has been possible to establish, the only lifesaving equipment to be carried, were two lifejackets. It is known that at least one of the occupants was wearing his lifejacket before departure, and it is highly likely the other did the same.

Both victims were wearing fully inflated lifejackets when discovered. This shows the lifejackets functioned as designed. They were equipped with whistles, and had reflective tape fitted, but were not fitted with crotch straps or spray hoods. These latter items were optional extras on the type of lifejacket worn.

There is no evidence to show that either flares or any means of radio communications were being carried. No liferaft was embarked.

1.10 Post-accident events

A tragedy of this nature will inevitably hit any community very hard. The effect is even greater when it occurs to a small, close-knit town such as Wells-next-the-Sea. It is inevitable that the media will take an immediate interest, particularly when local families are involved. In such circumstances there is a natural tendency for the media to encroach on the grief, pain and suffering of the families, friends and local community.

Reporters will always want to know the basic facts of what occurred. They will wish to be briefed about the search and rescue activity, and to have photographs of any wreckage, the rescue units, and the victims in happier times. Such demands can be very intrusive on the families of victims. If an inaccurate report about what occurred is printed, or there is speculation about the causes, it can be deeply distressing to the families. Nothing can possibly take away the enormity of what has occurred, but families can gain some measure of comfort if someone, or an

organisation acting on their behalf, can provide a degree of protection from the media, and prepare an authoritative and full press brief about what has happened. If the brief can include details of the basic circumstances, the search and rescue effort, and family statements about the victims, together with recent photographs, it will go a long way to ensuring the subsequent reporting will be accurate. If it can be disseminated at an arranged press conference at a time that will enable copy deadlines to be met, it will do much to prevent any unwanted intrusion on family grief.

In this accident such a service was provided and was greatly appreciated by the families of the victims. It was provided by officials of the RNLI.

The media reporting was accurate.

SECTION 2 - ANALYSIS

2.1 General

There were no witnesses to this accident and no survivors. The investigation concentrated on trying to establish why two competent and careful men lost their lives on a fine day, while making a short passage in waters that at least one of them knew well. The prime aims of the investigation have been to identify any lessons to prevent something similar happening again, and to make recommendations to improve safety afloat.

A feature of this accident was that although both the victims were wearing lifejackets, the cause of death was drowning.

2.2 The boat

All the evidence indicates that *Samphire of Wells* was suitable for use in sheltered waters. On the other hand her low freeboard, open structure and lack of any built-in, or added, buoyancy made her very vulnerable to being swamped in rough seas, breaking swell or surf. With a fixed propeller and a modestly powered engine, she would not have responded rapidly to a tiller movement. Any attempt to change course would have been slow compared with what might be expected in a racing dinghy.

The flat transom would have made her vulnerable to rough or following seas, especially if they were breaking.

The engine was relatively new. It is not known how often, or how recently, it had been used. The engine has never been found so it has not been possible to inspect it. It cannot be established when she was last refueled, or how long unused fuel had been lying in the fuel tank. An engine breakdown, from either a mechanical defect or fuel problems cannot be ruled out.

2.3 The occupants

Both victims were familiar with handling small boats. Mr Cracknell in particular had acquired extensive experience in local waters, sailing dinghies. He was a boatbuilder and well acquainted with handling small motor boats.

Several people who knew Mr Cracknell well, have stated that it would be totally out of character for him to take a risk if he perceived one to exist.

Someone with extensive dinghy experience may not have the same instinctive feel for how a relatively heavy displacement craft might perform in the open sea. A capsize or broach in a performance sailing dinghy usually involves no more than a wetting, and the familiar task of uprighting the craft in a well practiced and established manner. Likewise, dinghy crews usually

dress in clothing suitable for such an eventuality. Mr Cracknell was a dinghy sailor, and had he been sailing one, would have dressed appropriately. But finding himself in a craft that gave every appearance of being more stable and drier, it is unlikely he would have considered dressing in anything that anticipated a capsize.

He would also have been used to the handling characteristics of a small sailing craft, and may have made assumptions about what he could expect from a powered dinghy. He may well have been disappointed at the slowness of response to any attempt to alter course rapidly. Likewise, he may not have appreciated the effect on the dinghy's stability if substantial quantities of water were to be shipped. Even a small amount can have adverse effects.

2.4 The decision to sail and passage to sea

Although a trailer capable of transporting the dinghy by road was taken to Overy Staithe that morning, they had already planned going by sea, and were carrying lifejackets. It was a fine and sunny day; they would have been sheltered from the light westerly wind and it was near high water. At face value the conditions would have been ideal for a short sea passage.

There is nothing to suggest that either man had thought it necessary to seek local advice about their intended plan, or indeed, to have walked out towards the harbour entrance to visually inspect the bar or sea conditions. There is no evidence to indicate they considered the likely effect of a northerly gale the previous day on the prevailing sea conditions. In short, neither man appears to have perceived that in the seemingly benign conditions, there was a high degree of risk in what they were proposing. They were not wearing clothes that would have suggested they anticipated trouble.

It is presumed they were confident that their engine would not let them down.

They sailed at about 1130, and were by all accounts in a cheerful, confident mood as they set off. They were seen putting to sea and were thought to be chatting amicably while doing so. One man, a birdwatcher on the shore to the east of Gun Hill, saw what he identified as a small dinghy heading east beyond the breaking waves on the shoreline. He recalls seeing one person on board, but acknowledges a second could have been hidden from view. The sighting was timed at about 1150. This might have been *Samphire of Wells*, but it cannot be proved beyond doubt. If so, it was the last time the occupants were seen alive. There is no record or evidence of any other craft being at sea in that vicinity at that time.

The investigation concludes that neither of the victims perceived there was any risk involved by making a short sea passage on 16 December.

2.5 The conditions

The weather on 16 December was relatively moderate. The wind was light and would have seemed to be nearly calm in the sheltered waters of Burnham Overy harbour.

Only 30 hours previously, however, there had been a much stronger northerly breeze blowing with gale, or near gale force winds blowing directly onshore. Although the wind had dropped by the morning of 16 December, there would have been some residual swell, and even at high water neaps, this would have broken when it reached the bar and shoreline. An eye-witness recalls seeing a great deal of white water along the shoreline which confirms this judgment.

A local Wells fisherman putting to sea that same afternoon reported the Wells bar that day as “very frightening” with some very steep seas.

It is concluded that although the sea surface would have reflected the wind state prevailing at the time, there would have been a residual swell remaining from the previous day’s strong northerly winds. This would have been breaking on the shoreline and the harbour bars of both Burnham Overy and Wells. It is known that there was much ‘white water’ in evidence along the shoreline that day. This would reflect the swell ‘tripping’ as it came in contact with the shoal water.

Breaking waves were evident at around 1200 on 16 December, and were quite capable of swamping a small open dinghy. A 1.4m (4ft) breaking wave travels at about 9 knots, and 1m³ of sea water weighs 1 tonne. This is more than enough to capsize a small open boat and cause extensive damage.

2.6 The accident

Nobody saw this accident and there were no survivors. Therefore what happened, where it happened and how, must be a matter of speculation.

Three general locations of the accident have been considered: the bar at the entrance to Burnham Overy Harbour, the bar at the entrance to Wells harbour, and on the open sea passage between the two. There are no grounds to suspect it occurred while in the sheltered water of the channels to either harbour.

Crossing any bar is potentially dangerous. Almost without exception the dangers are well recorded in the relevant sailing directions. They will certainly be well-known to the local small craft community. An assumption is made, but cannot be confirmed, that one or both the dinghy occupants in this instance were at least familiar with the basic dangers, if not the detail, of crossing these bars following an onshore breeze.

The height of tide at high water neaps is, in essence, the lowest level of high water likely to be experienced, and given the underlying swell following strong northerly winds, was evidently

insufficient to ensure calm water close to the shoreline. No matter what course of action selected by the occupants, they would have been obliged to pass through breaking waves.

Crossing the bar would have been their first challenge. There is no record of what the waves were actually like, but they would have been steep, breaking and probably unpredictable. Such waves have the power to be very destructive. There is a very real possibility that while crossing the bar she shipped a quantity of water. This would have reduced her stability, and the occupants would have had no option but to bale it out as soon as they could.

It is not known for certain if they carried a bailer, and if so, whether it was still on board at this time. She is known to have had an electric bilge pump, and for want of any evidence to indicate otherwise, it is assumed to have been functioning correctly. But large quantities of water take time to clear and it is possible the amount of water already onboard, or the rate at which it was shipped, was such that even a fully functioning pump could not cope sufficiently fast. A makeshift bailer was also at hand, the lunchbox, but it was found with the lid attached. This suggests that whatever happened, occurred too rapidly to prevent it being used.

If while heading towards the open sea the occupants had second thoughts about the wisdom of continuing, and tried to return to the sheltered water of Burnham Overy harbour, they would have faced the same conditions in reverse. The significant difference would have been that instead of facing the oncoming waves with the bow, the seas would have approached the lower freeboard aft and the wide transom from astern. She was particularly vulnerable to seas breaking from this direction, and this would have been known to the occupants. In view of the indication that they had been seen to seaward of the bar and heading eastwards, it is thought unlikely they attempted to turn round and seek the sheltered water of Burnham harbour.

The third scenario visualises her foundering while on passage. With no witnesses to see what actually happened, any view about her foundering must be a matter of speculation. It is possible that having made the open sea, the two men concluded the safer option would be to cut the corner, and head direct for a point to landward of the Wells harbour channel entrance buoys. There is such a channel, known locally as the Cockle Hole, and given the height of tide they might have judged it safe to head towards it.

At some stage while on passage, they might have started to roll particularly heavily, and with any additional water already present, the combination of the two factors might have dipped the gunwale into the sea. Or they may have been steering too close to the line of breakers and found themselves confronting a steep fronted wave unexpectedly. It would only have required one breaking wave to come inboard to destroy the dinghy's stability and deposit the occupants into the sea.

The alternative to finding themselves in breaking waves by their own actions, would be for the engine to have failed. This may have been caused by either a mechanical defect, fuel starvation, or through the effects of excess water sloshing around on board after shipping it while crossing the bar, or at some other time. There is nothing to suggest that this did happen, but without evidence to either prove or disprove it, the possibility remains. Even though it is thought oars were

available to them, it is possible the dinghy could have drifted into the 'white water', shipped a sea and capsized.

It is also possible the dinghy struck an underwater object, which damaged the hull and caused a leak. This however would be unusual in such a small craft in these circumstances.

One of two events is most likely to have occurred at the moment of capsize. A breaking wave would either have struck the dinghy with such force that it capsized without warning, leaving the two occupants swimming in the water, or a sea would have been shipped to partially fill it. If the dinghy had shipped water while crossing the bar, and the occupants had insufficient time to bale it out with whatever means they had at their disposal, it may not have needed much more to destroy the remaining stability. Either of these two scenarios is possible, but on balance, the second is the more likely.

It would be most unusual to be sitting in a boat wearing an inflated lifejacket unless the occupants had good cause to do so. It is reasonable to assume that neither occupant had inflated his lifejacket until something disastrous had already happened, or they became aware it was about to happen. Had they been pitched into the sea unexpectedly, they would have had to manually inflate their lifejackets while in the water. This may well have happened, but the more likely explanation would be that when they realised their craft had taken a large quantity of water, they assessed they were at risk from capsizing, and took the precaution of inflating their lifejackets while still onboard. This would have been a sensible and logical step.

A dinghy full of, or even partially full of, sea water, requires very little leverage to capsize it. This can happen very slowly, but when it starts to roll there is virtually nothing that can be done to prevent it. Although there is nothing to show that this is what actually happened, it is one of the more common occurrences, and might account for what occurred on this occasion.

Once the dinghy had foundered, it would have been at the mercy of the waves, and without buoyancy, it probably sank. It would have been vulnerable to breaking up.

There would have been nothing reliable for a survivor to cling on to.

Apart from the few items recovered, there has been no sign of the wreckage. Very little can be read into this, but on balance, it suggests the event might have occurred somewhere other than close inshore where some additional sign of wreckage might have become evident when the tide went out.

2.7 Survival

In the water, the two men would have been on their own and almost certainly having to contend with breaking waves.

Since Mr Cracknell was wearing chestwaders, and Mr Fortescue wellington boots, swimming would have been very difficult.

Although they were wearing warm clothing before immersion, the insulation provided would have been destroyed within seconds. The theoretical survival time for someone immersed in water with a temperature of 9°C is between about 45 minutes and 3 hours, but in practice it has been repeatedly found that actual times are invariably measured in minutes. Internal body temperature drops rapidly when someone is exposed to the chilling effects of cold water. The initial immersion will have a major impact, and heat loss is aggravated if the victim starts to expend a lot of energy such as might be expected with any attempt to swim. It has also been found that people will start to hyper-ventilate when suddenly plunged into cold water. Hyper-ventilation in breaking waves will almost certainly lead to a person swallowing a quantity of sea water. In this accident, there was nothing to prevent the seas from either splashing, or covering, the faces of the crew.

Breaking waves would also have had another effect; a tendency to push the victims under water. As the waves tried to push them under, the lifejackets would have acted in the opposite direction. This would have led to the buoyancy forces pulling the lifejacket up towards the head unless constrained. When the bodies were eventually discovered, they were both found with the lifejackets riding around their heads. Neither lifejacket was fitted with crotch straps.

Faced with almost overwhelming difficulties, the survival of the two men now depended on their being able to attract someone's attention to their predicament.

Apart from a whistle attached to the lifejackets, neither man had any means of attracting attention. Both whistles were discovered in their lifejacket stowage pockets and had not been used, but given the circumstances prevailing at the time, it is thought most unlikely that they would have been of any use.

So far as is known, no flares were being carried on board *Samphire*, but even if they were, they would probably have been of little use once she had foundered. The chances of the victims being able to find any flares, let alone operate them in the immediate aftermath of such a situation, would have been remote.

Neither man was carrying personal flares, and with one or two exceptions, very few lifejackets are provided with any means of attaching them. They had no other means of attracting attention, and it is unlikely that anyone would have seen them struggling in the water, even if they had been close enough.

A radio or mobile telephone carried in a waterproof container, can be a useful last resort for alerting someone of a problem, although in this situation they probably could not have been used. It is concluded that in this incident neither man had an effective means of attracting attention.

Normally the search and rescue services discourage the use of mobile telephones to draw attention to an emergency at sea. They cannot be used as a direction finding source, they deny access by units that might be in a position to render help very rapidly, and they cannot be used as

an open channel of communication. Their use is, nonetheless, officially recognised as a last resort of communication, and they have the obvious advantage of probably being the ONLY form of communication held by someone in a small dinghy. If either man had been carrying a mobile telephone, it is just possible that he may have been able to alert someone to their predicament either immediately before, or shortly after, they foundered.

It is impossible to predict what might have happened had a flare been used. Its effectiveness depends on it performing as designed, and then being observed by someone who has the comprehension, and means, to alert the emergency services. The investigation has learned that whenever a flare is released anywhere along this particular coastline, the “coastguard’s switchboard is swamped by people reporting it”. The problem is not usually so much a failure to report it, as misidentifying the colour. The use of a flare will do much to attract attention, and there is a good chance it will be seen and reported. The adjacent shoreline is regularly used by people walking and bird watchers, and it is known that some people were walking along the shore at the time the accident is believed to have occurred. The time taken to raise the alarm is an unknown quantity but, once the coastguard has been alerted, the response time to initiating a search would be minimal.

Precisely what occurred in this tragic accident remains unknown, but both men died from drowning.

The two men were found about 18 miles apart. Although the second victim was found 6 days after the first, there is no obvious explanation to account for them not being found together. An assumption is made that they were together when they first entered the water. Thereafter one of them, possibly Mr Cracknell, may have tried to swim ashore to raise the alarm, but he would have been greatly handicapped by his clothing and chestwaders. Nevertheless it is a possible explanation for him being found closer inshore.

Alternatively a quirk of wind, waves, tide and the shoreline topography might have divided them by a sufficient distance to ensure one drifted inside a shoal to be trapped there, and the other did not. It is unlikely a clearer explanation will emerge, but when Mr Cracknell was found, Mr Fortescue’s body was probably to seaward and drifting eastwards just offshore.

2.8 The search and rescue

Although the accident probably occurred while on passage between the two harbours, it could have happened at the entrance to Burnham Overy harbour. A factor that tends to support the view the accident occurred at, or near, the Burnham Overy harbour bar was the discovery of Mr Cracknell’s body to the west of the Wells harbour channel and in a pool among the sandbanks lying to the north of High Cape. With an east setting ebb tide, any object would have drifted eastwards during the interval between about 1230 and 1850 when the body was discovered. These timings and the predicted drift rate would have been consistent with an accident occurring at the bar to Burnham Overy harbour and the sighting of the body in the location described. It is

unlikely that it would have been found here had the accident occurred either at the entrance to, or in, the Wells harbour channel.

None of this would have been known at the time the dinghy was reported overdue. It is almost impossible to lay down any hard and fast rule about when an overdue craft should be reported. In this instance however, the alarm was raised at 1525 after preliminary inquiries had been made revealing that there was no sign of either *Samphire* or its occupants.

The subsequent search and rescue operation was initiated without any delay, and covered the area most likely to contain any survivors. The discovery of Mr Cracknell's body at 1850, within the anticipated search area, confirms the accuracy of the predicted drift rates, but was ultimately too late to save him. According to the doctor who first saw the victim, he died some time before he was discovered.

The reflective tape on the lifejacket greatly helped to locate the body.

The second body was not found for a further 6 days and begs the question as to whether the initial search was sufficiently thorough.

An assumption is made that although both victims were found some miles apart, they entered the water at the same time and place. Predicting individual drift rates is not an exact science, and although a general search area can be predicted with reasonable accuracy, it can vary widely for any number of reasons. It is very likely that following the foundering, Mr Fortescue's body edged away from Mr Cracknell's, and was so far displaced to the north that instead of being trapped inside the most seaward sandbank, it floated to the north of it and stayed to seaward thereafter. It would then have been subjected to the influences of the tide off the north Norfolk coast and would have become much harder to see.

On the evening of 16 December, the actual search for the second victim was concentrated in a tight area centered on the first body datum. With the benefit of hindsight, Mr Fortescue's body was in fact probably further to seaward, but even had it been located at about the same time, it is highly unlikely the subsequent outcome would have been any different. It is concluded that in both cases the victims died fairly soon after being thrown in the water.

The fact that both men were wearing lifejackets, greatly aided their discovery. Very often when somebody not wearing one drowns, the body is never found, and this greatly adds to the distress of the bereaved family.

SECTION 3 - CONCLUSIONS

3.1 Findings

- (i) There was no overwhelming reason why it was necessary to transport *Samphire of Wells* by sea. Road transport was available and practical. [2.4]
- (ii) *Samphire of Wells* was suitable for use in sheltered waters but was vulnerable to being swamped in rough conditions such as might be experienced when crossing a bar or coasting after bad weather. [2.2]
- (iii) The weather on the day of the accident was good with a westerly force 2-3 blowing. On the preceding day a strong breeze to gale force northerly, and therefore onshore, wind had been blowing. [1.4]
- (iv) Both the occupants had sufficient knowledge to handle small craft competently but it is thought that specific knowledge of handling an open dinghy at sea with an inboard engine was less well established. [1.3, 2.3]
- (v) The dinghy was believed to have been equipped with oars and an anchor but there is no evidence to indicate that flares or any form of radio were carried on the 16 December. It is probable a bailer was onboard and it is thought the electric bilge pump would have functioned. [1.2]
- (vi) The wreck, or hull, of the dinghy has never been found and has not, therefore, been examined, but it is probable that it shipped water before capsizing. [1.8]
- (vii) Both men were regarded as being careful and conscientious. Mr Cracknell had a reputation for being someone who did not take unnecessary risks. [1.3]
- (viii) *Samphire of Wells* sailed from Burnham Overy Staithe at about 1130 on 16 December and was, quite possibly, last seen to the east of the harbour entrance and heading eastwards. [1.1]
- (ix) A bar lies across the entrance channel to Burnham Overy harbour. Sailing directions and those familiar with the harbour advise against crossing the bar if there is any northing in the wind. [1.6]
- (x) There was breaking water at the Burnham Overy Harbour bar when *Samphire of Wells* crossed it. [1.1]
- (xi) 'White water' was observed along the shoreline at about 1150 on 16 December. [1.4]

- (xii) Both men were able to inflate their lifejackets either before, or very shortly after, being immersed in the sea. They would have found swimming very difficult with the clothing and footwear being worn. [1.3, 2.7]
- (xiii) Neither man had any suitable means to attract attention to their predicament once they were in the water. [2.7]
- (xiv) Both men would have been subjected to the effects of cold water and would have found it difficult not to swallow sea water. [2.7]
- (xv) There was nothing on either of the two lifejackets to prevent them riding up over the heads of the victims or to prevent water splashing over their faces. [2.7]
- (xvi) Both men died from drowning. [2.7]
- (xvii) The alarm was raised once it was realised the dinghy was overdue and that initial inquiries had failed to identify her whereabouts. [1.1]
- (xviii) Once the alarm had been raised there was no delay in mounting a search and rescue operation. [1.1]
- (xix) The body of Mr Cracknell was located afloat among shoal water to the west of the Wells harbour channel about 7 hours after the dinghy sailed. Mr Fortescue's body was discovered 6 days later floating in the open sea, north of Cromer. [1.1]
- (xx) Both bodies were being kept afloat by fully inflated lifejackets. Had the lifejackets not been worn, there must be doubt about whether they would have been found so easily. The reflective tape on Mr Cracknell's lifejacket greatly assisted the Wells RNLi all weather lifeboat's ability to find it at night. [2.8]

3.2 CAUSES

3.2.1 Primary cause

Because there were no survivors, physical evidence, or witnesses to this tragic accident, it is not possible to state with certainty what caused it. The investigation concludes, however, that the most likely cause was that she foundered in breaking waves at some stage while on passage between Burnham Overy and Wells-next-the-Sea harbours.

3.2.2 Underlying causes of the accident

- (i) The decision to take *Samphire of Wells* around to Wells harbour by sea and not by road.

- (ii) The unsuitability of *Samphire of Wells* to weather broken water in the open sea. Even if partially swamped she would have been vulnerable to capsize.
- (iii) The dinghy occupants' lack of awareness of the sea state likely to be encountered during the passage.
- (iv) The possibility that the engine failed while on passage.

3.2.3 Underlying reasons why neither of the occupants of the dinghy survived

- (i) Lack of any inbuilt buoyancy in the dinghy.
- (ii) The difficulties both victims would have found swimming in the clothing and footwear being worn.
- (iii) Inability to preserve body heat once immersed in cold water.
- (iv) Lack of any means to prevent breaking water covering the victims' faces.
- (v) Lack of any means to prevent lifejackets from riding up over victims' heads.
- (vi) Inability to attract anyone's attention once they were in the water.

SECTION 4 - RECOMMENDATIONS

The RNLI Sea Safety Liaison Working Group² is recommended to:

1. Review its existing advice on the preservation of life for anybody finding themselves inadvertently in the water. Such a review should look at all small craft users including those who only go afloat occasionally. It should cover:
 - suitable clothing for the anticipated conditions;
 - preserving body heat;
 - the importance of having the most suitable lifesaving jackets for the intended activity;
 - ensuring lifejackets are properly fitted and secured;
 - effective means of attracting attention by a survivor in the water.
 - informing a responsible and knowledgeable person or coastguard of intentions, including the ETA, prior to departure and reporting the safe arrival on completion.
2. Review the means of promulgating basic safety advice to the occasional small boat user.

² The RNLI's Sea Safety Liaison Working Group is made up of representatives of the British Marine Industries Federation (BMIF), the Maritime and Coastguard Agency (MCA), the Royal Lifesaving Society UK (RLSS UK), the Royal National Lifeboat Institution (RNLI) and the Royal Yachting Association (RYA).