

**Administrative Inquiry carried out by
The Marine Accident Investigation Branch
into the loss of the tug
ADHERENCE
in the Bay of Biscay
on 25 October 1996**

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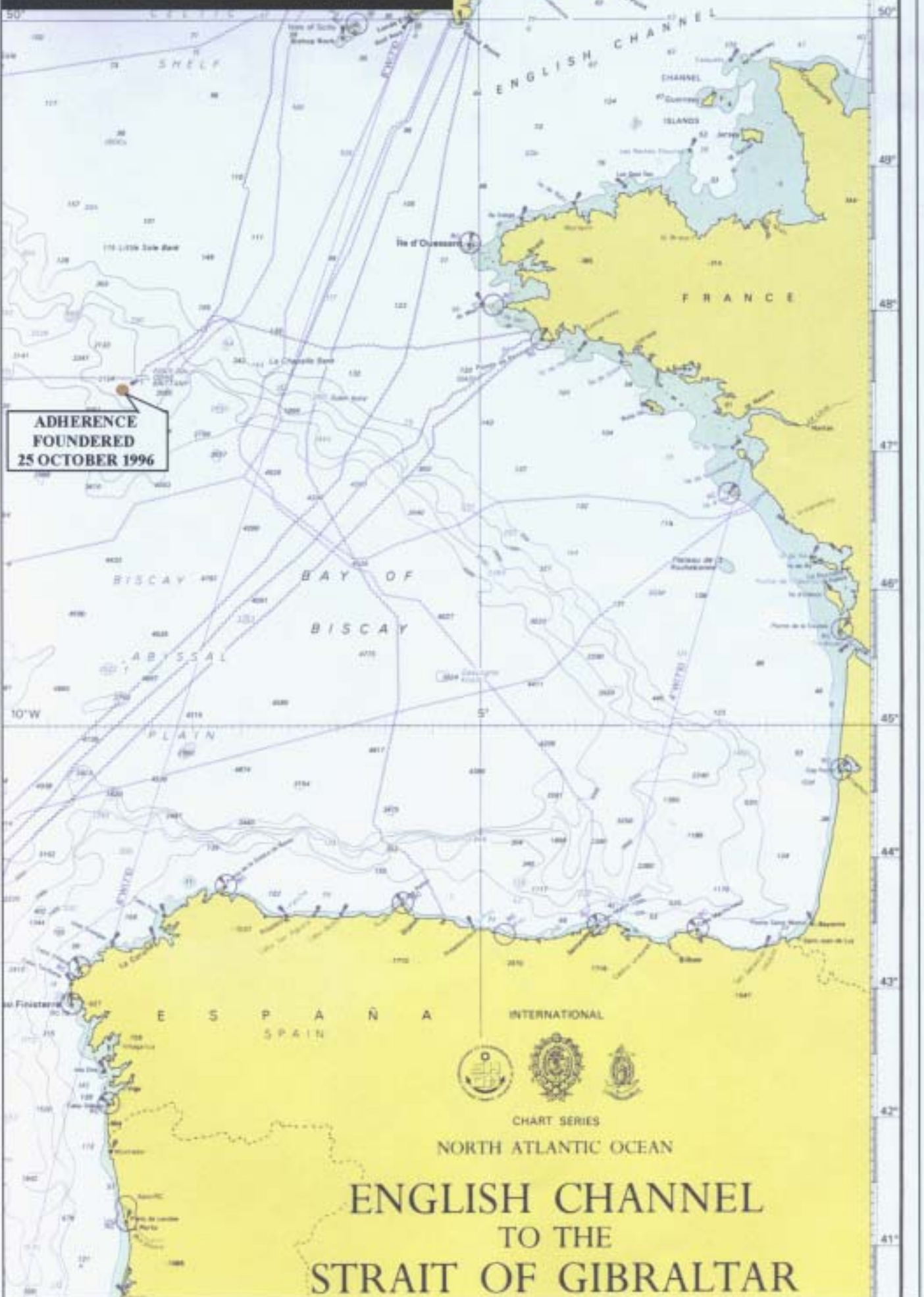
Extract from
The Merchant Shipping
(Accident Reporting and Investigation)
Regulations 1999

The fundamental purpose of investigating an accident under these Regulations is to determine its circumstances and the 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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**ADHERENCE
FOUNDERED
25 OCTOBER 1996**



INTERNATIONAL
CHART SERIES
NORTH ATLANTIC OCEAN

ENGLISH CHANNEL TO THE STRAIT OF GIBRALTAR

Section 1 **FACTUAL ACCOUNT**

1.1 **Details of the Vessel and the Incident**

Name:	<i>Adherence</i>
Official Number:	180239
Port of Registry:	Southampton
Built:	Richard Dunston Ltd, Thorne
Year of Build:	1944
Construction:	Steel
Owner:	See Para 1.4
Operational Control:	HM Customs and Excise
Length:	19.81m
Breadth:	5.19m
Depth:	2.25m
Gross Tonnage:	54.43
Propulsion:	Lister Blackstone Diesel, 298 kW
Crew:	Four
Position of Accident:	47° 27'N 08° 43'W (Approx)
Date and Time:	25 October 1996. 1540 UTC
Damage:	Vessel foundered
Injuries:	Nil

1.2 **Scope of the Investigation**

Many of the details about this particular incident remain confidential but are not, in the opinion of the MAIB, germane to the causes of the foundering. The specific purpose of an Administrative Inquiry is to record the basic facts. This accident was not subjected to a full investigation but, because of the special circumstances, this report is extended to cover the circumstances of the loss, to highlight shortcomings and to make recommendations to HM Customs and Excise to prevent a similar accident happening again.

1.3 **Background to the Voyage**

HM Customs and Excise had grounds to believe that a consignment of cannabis was being carried on board a yacht, *Fata Morgana*, which would be at sea in the Bay of

Biscay in October 1996. An undercover operation was launched to rendezvous with the yacht in the Bay and transfer the cannabis. To achieve this a small vessel, the tug *Adherence*, was specially procured. It was purchased on 18 October 1996, prepared for the operation during the next four days and, probably, renamed *Adherence II*.

The nature of the undercover operation lies outside the scope of this report.

At the time she was purchased, *Adherence* was lying out of commission at Husbands Shipyard, Marchwood, Southampton. She had apparently suffered from flooding some months earlier.

1.4 Narrative of events

Adherence sailed from the United Kingdom for the rendezvous on 22 October and headed for a position to the west of the main shipping route between Ushant and Cape Finisterre. She carried a crew of four, all undercover operatives under the operational control of the National Investigation Service, HM Customs & Excise.

On the day before the rendezvous, the crew were having trouble with the fuel supply to the engine and required additional hydraulic oil. Assistance was provided by an engineer who was flown in by helicopter from the frigate HMS *Chatham*.

The rendezvous with the yacht was made late on 24 October with positive contact being made early in the morning of 25 October. Once visual contact had been made, a transfer of goods by means of a floating line between the two vessels was attempted but aborted in the prevailing weather conditions. The tug's crew then launched an inflatable dinghy and, just before dawn, started transferring the cargo. The weather was not good and the tug's side decks were constantly awash throughout the transfer; sometimes to a depth of 45cm. In the hours that followed some 145 bales of cargo were transferred from the yacht to the tug and stowed in a storage locker in the after part of the vessel. Although the hatches to the locker were opened when loading the cargo, they were shut between consignments. Spray entered the locker but there are no reports of green water finding its way below. Fuel and stores were transferred to the yacht.

On completion of the transfer, the two vessels parted company and the tug began her return passage to the United Kingdom on a north-easterly heading and before a following sea.

In deteriorating weather conditions, and while on passage making about 8 knots, the tug began to ship water. It also appears that the aft peak ballast tank was also full of water. Despite running the bilge pump, it was not possible to empty the ballast tank or reduce the level of water shipped. The bilge pump then failed, could not be restarted and the water ingress increased until such time that *Adherence* eventually foundered. The crew of four took to the dinghy, transmitted a "Mayday" using a portable VHF and were eventually rescued by the cargo vessel *Horncliff*.

Many of the details about the operation and subsequent events are confidential. As the investigation was confined to an Administrative Inquiry, the MAIB is satisfied that the information provided is adequate for that purpose.

Accidents involving UK vessels are required to be reported to the Marine Accident Investigation Branch in accordance with the Accident Reporting and Investigation Regulations 1994. This incident was not.

1.5 Post Accident Events

This report does not cover any operational aspects after the transfer.

Subsequent to the events covered in this brief report, charges were brought against a number of those involved. During the trial the judge made it clear that there should be no disclosures on ownership of the tug. Although for completeness it would be normal in any MAIB report to identify ownership, non disclosure in this instance does not materially affect the findings. The MAIB has therefore observed the directions of the judge.

1.6 ADHERENCE

Adherence was a small harbour tug with wheelhouse and engine casing occupying the forward part of the vessel, the towing hook amidships and an open weatherdeck aft.

Her Certificate of Registry was issued in 1944.

From the evidence available she was seaworthy on sailing from the United Kingdom.

Adherence carried a portable Magellan GPS.

1.7 The Crew

There are few details available about the crew. They were UK government employees and it appears the skipper, at least, was adequately experienced to be at sea in a vessel of this size.

The skipper's qualifications, and that of the crew, are unknown.

During the transfer of cargo, all members of the crew became extremely wet and very tired.

1.8 The Weather

It has not been possible to establish precisely the weather conditions on 25 October but there is a general consensus that the wind was south-westerly force 6-7 with a commensurate sea state. It was described as 'rough'.

It was cloudy, visibility was good and there were rain showers.

The weather synopsis for 24 October, the day before the rendezvous, was “a secondary low, western approaches, front passing over Bay of Biscay.”(sic)

1.9 Bay of Biscay

The topography of the Bay of Biscay and its position on the eastern side of the Atlantic Ocean make it peculiarly susceptible to high seas, most especially in the vicinity of the 100 fathom contour.

The Admiralty Sailing Directions for the Bay of Biscay (NP22) draw attention to the incidence of swell waves in October coming predominantly from the west and north-west and that sea waves generated locally by the wind are much more variable, but the heaviest seas are from between south-west and north-west.

The Directions also refer to the presence of depressions which can ‘very quickly develop into vigorous systems and give rise to very strong winds or gales’.

On winds generally, the Directions refer to “ the marked variables of both wind direction and speed; seldom do steady wind conditions persist for as much as a day”. In autumn and winter it is stated that “strongest winds are experienced at this season with December the stormiest month when some 15% to 18% of observations report force 7 or greater.”

Gales can be expected at any time of the year with the greatest frequency occurring between November and February.

1.10 The Flooding

As *Adherence* proceeded north-east, once the transfer had been successfully completed, she found herself running before high seas and breaking waves. With a speed through the water of about 8 knots, these waves were advancing faster than the vessel was proceeding. The after deck became very wet and water was present at all times.

The crew became aware that some of the water was beginning to find its way below decks to both the after storage space and the engine room. The tug was turned to head into the seas and the bilge pump was started but, after a while, it failed and could not be restarted.

Those on board *Adherence* were aware of the hazardous situation developing and sought assistance from HMS *Chatham* at 1432, in the form of a radio request for an emergency pump. By then the situation had deteriorated further. The water level increased and her freeboard aft began to reduce further. The increased draught was aggravated by the carriage of about 4 tonne of additional cargo in the hold space aft.

It is not known why the bilge pump failed.

It is assessed *Adherence* finally sank at about 1530 in approximate position 47° 27'N 08° 43'W.

The crew did not use the liferafts but managed to launch a dinghy, a Zodiac Futora, that was being carried for this specific operation. One man was struck by the mast as the tug foundered but managed to make the surface where he was rescued by his colleagues.

The liferafts failed to release. No EPIRB was carried.

As far as it has been possible to ascertain the first "Mayday" message was transmitted at 1540 from a handheld portable VHF radio carried in the dinghy.

No information about what happened after *Adherence* sank stern first has been made available to the MAIB except the four-man crew was rescued by the *Horncliff* (Horn Line of Hamburg, Germany), at 1715 in position 47° 29.3N 08° 47.2W.

The search and rescue operation did not, unusually, feature on normal marine traffic broadcasts or schedules.

The crew were eventually transferred to the Royal Naval frigate HMS *Chatham*. They eventually returned to the United Kingdom.

1.11 Reporting the Accident

The accident was not reported to the MAIB.

The Accident Reporting and Investigating (ARI) Regulations 1994 state, "...when an accident occurs the master shall send a report to the Chief Inspector as soon as is practicable by the quickest means available," "Where a ship is lost, presumed lost or is abandoned, then such a report shall be sent by the owner, the master, or a senior surviving officer as soon as is practicable by the quickest possible means". None of this was done. The MAIB first became aware that an accident had occurred on 9 June 1997 and, following various enquiries, received formal notification that the tug *Adherence* had been sunk by HM Customs and Excise. The Incident Reporting Form was received by the MAIB on 19 August 1997.

Regulation 16 of the ARI state "If a master, owner, or officer fails without reasonable cause to report an accident....., he shall be guilty of an offence". Such an offence is triable summarily, not an indictment.

The MAIB investigated the reasons why no report of the accident was made and established that there was genuine confusion about whose responsibility this was. HM Customs and Excise who undertook the operation were unaware they had any duty to report the matter, the others involved assumed that 'someone else' had made the report. They were mistaken.

Section 2

ANALYSIS

The purpose of the analysis is to identify the causal factors of the accident with a view to drawing conclusions so that recommendations can be made to prevent the same thing happening again.

This particular incident was unusual in that much of the evidence was confidential and that some of the actions taken reflected a need by HM Customs and Excise's National Investigation Service to protect its operating methods and sources. While this complicated the conduct of the investigation it has not prevented the relevant findings being made.

2.1 Preparations

For operational reasons, HM Customs and Excise sought to acquire a vessel in circumstances which it was hoped would not be conspicuous nor have attention drawn to the transaction.

There was confusion over the transfer of ownership that eventually led to misunderstandings about who was responsible for reporting that an accident had occurred.

There is nothing in the evidence to suggest that *Adherence* was unseaworthy for the operation. While capable of operating on the high seas, she was primarily a harbour or estuary tug and her low freeboard made her an unsuitable vessel for this type of operation in the notoriously rough seas of the Bay of Biscay in October.

While, clearly, the operating authority cannot dictate the timing of an operation of this sort and can, in practice, expect them to take place in difficult conditions, the choice of vessel must be one capable of operating in the conditions envisaged.

In the MAIB's opinion, the decision to use *Adherence* was marginal. A more seaworthy vessel would have been suitable.

2.2 The Crew

The inquiry had no grounds for believing the crew were other than competent, although probably not holding the required certificates, but there was clearly a conflict between operational imperatives and the safety of personnel and the seaworthiness of the vessel being used.

At least one of the crew appeared to have extensive experience in sailing vessels. His qualifications or experience in power driven vessels is unknown.

Any undercover operation involves taking risks, often substantial ones. These have to be balanced against sensible precautions to ensure that those involved are not put to unnecessary risk. Had, for instance, one or more of the crew lost their lives when

Adherence sank, searching questions would have been asked and the future of similar operations might have been placed in jeopardy. All four crew survived and this, in itself, does them credit but the lessons must not be ignored.

The first duty of the crew or the master or skipper of any vessel is to ensure the safety of those who sail in her. This includes making sure the vessel is safe and seaworthy before she sails, that a proper lookout is kept, that she is safely loaded, that all weathertight doors and hatches are properly secured and that she is handled in whatever way is appropriate to ride the prevailing weather conditions.

During the passage to the rendezvous, the tug was subjected to a severe battering by the rough seas and was rolling some 20° either way. This would have been very tiring for the crew. On the morning of the transfer, the four man crew started work very early. Throughout the transfer they became very wet and extremely tired. By the time the transfer was complete they were faced with a new predicament, flooding. And the rough weather continued.

Under these conditions, even the fittest, most experienced and dedicated seamen would have been hard pressed to cope with a steadily deteriorating situation. Although it has not been possible to analyse what each member of the crew was doing in the hours before the tug foundered, it is likely that the extent of the flooding in the early stages was not noticed and no steps were taken to either prevent it or contain it. It is also probable that upperdeck weathertight hatches and vent covers had not been properly secured by the crew for the return passage.

2.3 Loading at Sea

Loading cargo at sea is normally only carried out by specialist vessels such as fishing boats and dredgers, and naval vessels embarking stores, ammunition and fuel. The practice requires careful thought, planning and an eye on the stability implications.

Adherence was loading an estimated 3-4 tonne of additional weight and the decision was taken to place the entire consignment aft. The effect on both freeboard and trim would have been relatively small but a more sensible approach would have been to distribute the weight throughout the vessel.

The decision to load the entire cargo aft contributed to the ease with which water accumulated in the after part of the vessel.

2.4 The Foundering

The nature of this administrative inquiry did not extend to carrying out detailed analysis of how the water entered the after hold and engine room.

The evidence indicates that with her low freeboard, following sea and rough weather, water managed to access engine room and hold through openings that should have been firmly closed. At least some of the water entered through the engine room vents and the aft locker hatch. Once her stern had submerged, the rest of the vessel filled

rapidly through various openings. Once the engine had stopped, she was no longer able to head into the seas and lay beam to. There was nothing to prevent further seas breaking over her.

Although *Adherence* was theoretically capable of standing up to rough seas, she was not designed for the type of operation she was engaged in, including the embarkation of a cargo at sea with its effect on freeboard and stability. She was vulnerable to the conditions she encountered.

It has not been established why the bilge pump failed.

The crew had difficulty untying the liferaft.

Adherence sank once she had foundered. Although she was beam to sea before sinking the flooding was progressive from aft and led to her sinking stern first. Once she had foundered no danger to shipping was posed.

Conducting an operation in the Bay of Biscay in October is bound to have a weather dimension. This should have been foreseen. There is no reason why a small craft, such as a fishing vessel, could not have withstood the conditions encountered and been able to take on additional weight at sea. *Adherence* was an unsuitable vessel for this type of operation in the Bay of Biscay in October.

2.5 Post Foundering

A “Mayday” was transmitted by the crew at 1540, some 10 minutes after *Adherence* foundered. It was made from the Zodiac dinghy using a hand-held VHF radio. Its range would have been severely limited and, depending on the height of the receiving aerial, would have been unlikely to have exceeded 20 - 25 miles. Only vessels within this range would have been in a position to intercept it.

Two ships are known to have been in the area at the time, *Horncliff* and *Golden Condor*. There is no evidence to indicate that *Golden Condor* heard the first “Mayday”, she is reported to have passed within four miles of the dinghy carrying the survivors.

Horncliff received the first “Mayday” at 1540, the second at 1545 and a third at 1600. The dinghy was sighted at 1625 and the survivors embarked using the pilot ladder by 1715. They were all very cold and wet but not, seemingly, suffering from hypothermia.

The unnamed master of *Adherence* contacted his ‘owner’ via Inmarsat at 1715 and cancelled the SAR operation. As the evening progressed arrangements were made for the survivors to be transferred to HMS *Chatham*. She had remained in the general area throughout.

The transfer was made at 2130.

The Search and Rescue (SAR) operation was successful.

Section 3 CONCLUSIONS

3.1 Findings

- (i) The tug *Adherence* was procured by HM Customs and Excise with the specific aim of being used for one of its operations.
- (ii) From the available evidence, *Adherence* was properly registered and seaworthy at the time of this operation.
- (iii) There was confusion over who actually owned the tug at the time of her loss.
- (iv) It has not been possible to establish the qualifications and experience of the crew.
- (v) The choice of *Adherence* for a deep sea operation in the Bay of Biscay in October was marginal.
- (vi) The weather conditions during this operation were not good. The wind was south-west, force 6-7 and the seas were rough. The conditions could have been foreseen.
- (vii) The operation took place in rough weather and demonstrated the limitations of a low freeboard harbour tug for such an operation. She was not a suitable choice for such an operation in the prevailing conditions.
- (viii) During the transfer of cargo, the crew became very wet and extremely tired.
- (ix) Water entered *Adherence* via the engine room vents, the after locker hatch and, most probably by other openings on the upper deck. It is probable that these had not been properly secured shut.
- (x) The bilge pump on board *Adherence* failed for unknown reasons.
- (xi) *Adherence* foundered at about 1530 on 25 October in approximate position 47° 27'N 08° 43'W.
- (xii) All four crew on board *Adherence* survived the foundering.
- (xiii) The search and rescue operation was successful.

3.2 Primary Cause of Foundering

The primary cause of *Adherence* foundering was the uncontrolled ingress of water into the after part of the vessel in bad weather.

3.3 Contributory Causes

The following underlying causes contributed to the loss of *Adherence*.

- (i) The unsuitability of a harbour tug for an operation of this type in the Bay of Biscay in October.
- (ii) The choice of an aft locker space to load additional cargo at sea.
- (iii) The apparent failure to ensure all upper deck hatches and other openings were properly secured before starting to make the return passage.

Section 4 RECOMMENDATIONS

The Investigation Branch of HM Customs and Excise is recommended to:

1. Ensure that any vessel they procure or charter in future is suitable for the planned operation, is properly surveyed, registered, manned and loaded.
2. Ensure clear ownership is established.
3. Ensure that guidelines for balancing operational requirements with safety requirements are clearly laid down.

HM Customs and Excise is recommended to:

4. Ensure whenever a vessel, which is subject to the Merchant Shipping Act, is used in any future HM C&E operation , clear directives are in place indicating who is responsible for reporting an accident in accordance with the current Merchant Shipping (Accident Reporting and Investigation) Regulations.

1 December 1999

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