Report of an investigation of
the grounding of

Baltic Champ

off Kirkwall
on 4 February 1999

Marine Accident Investigation Branch
MAIB 1/6/109

Extract from

The Merchant Shipping

(Accident Reporting and Investigation)

Regulations 1994

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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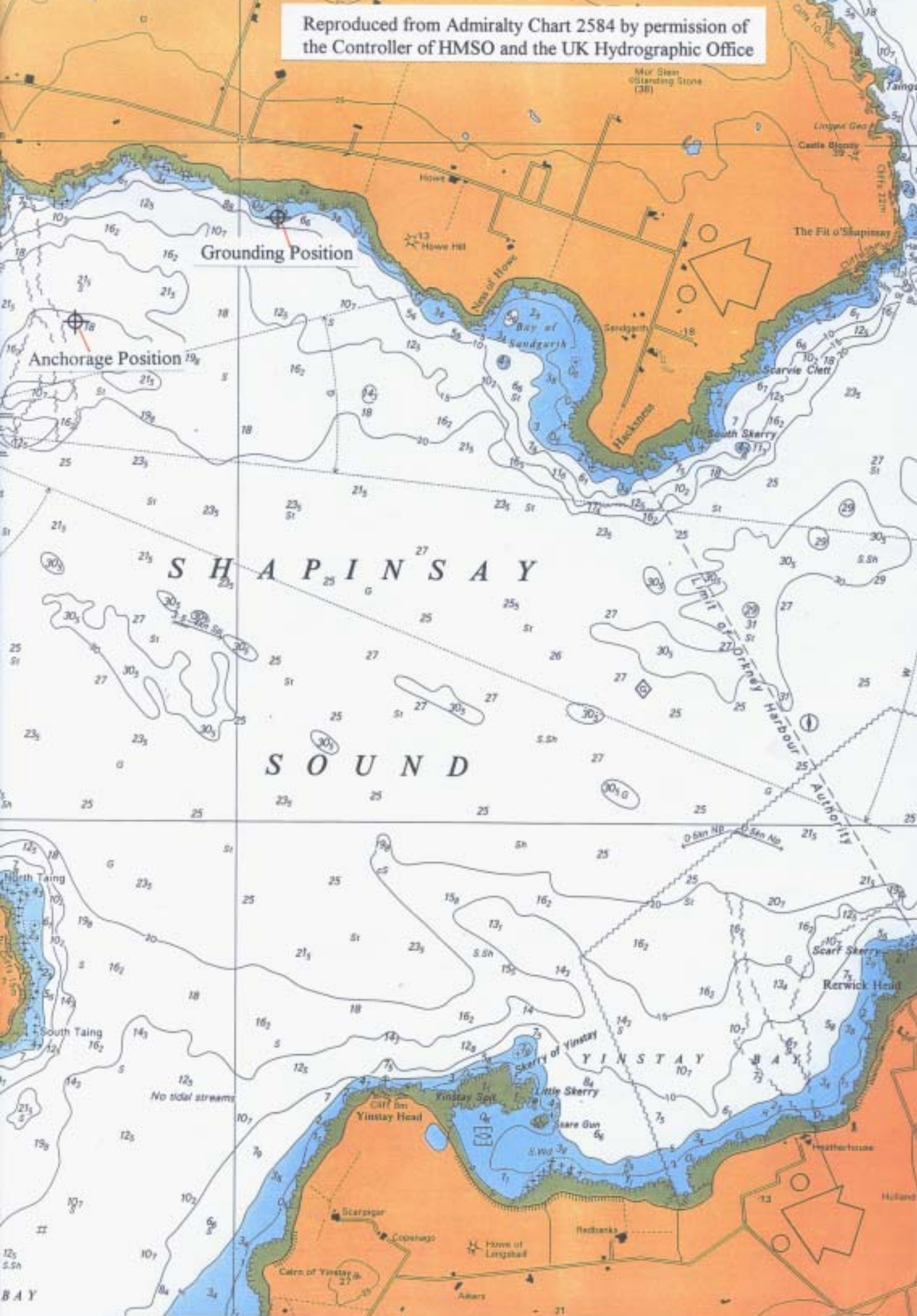
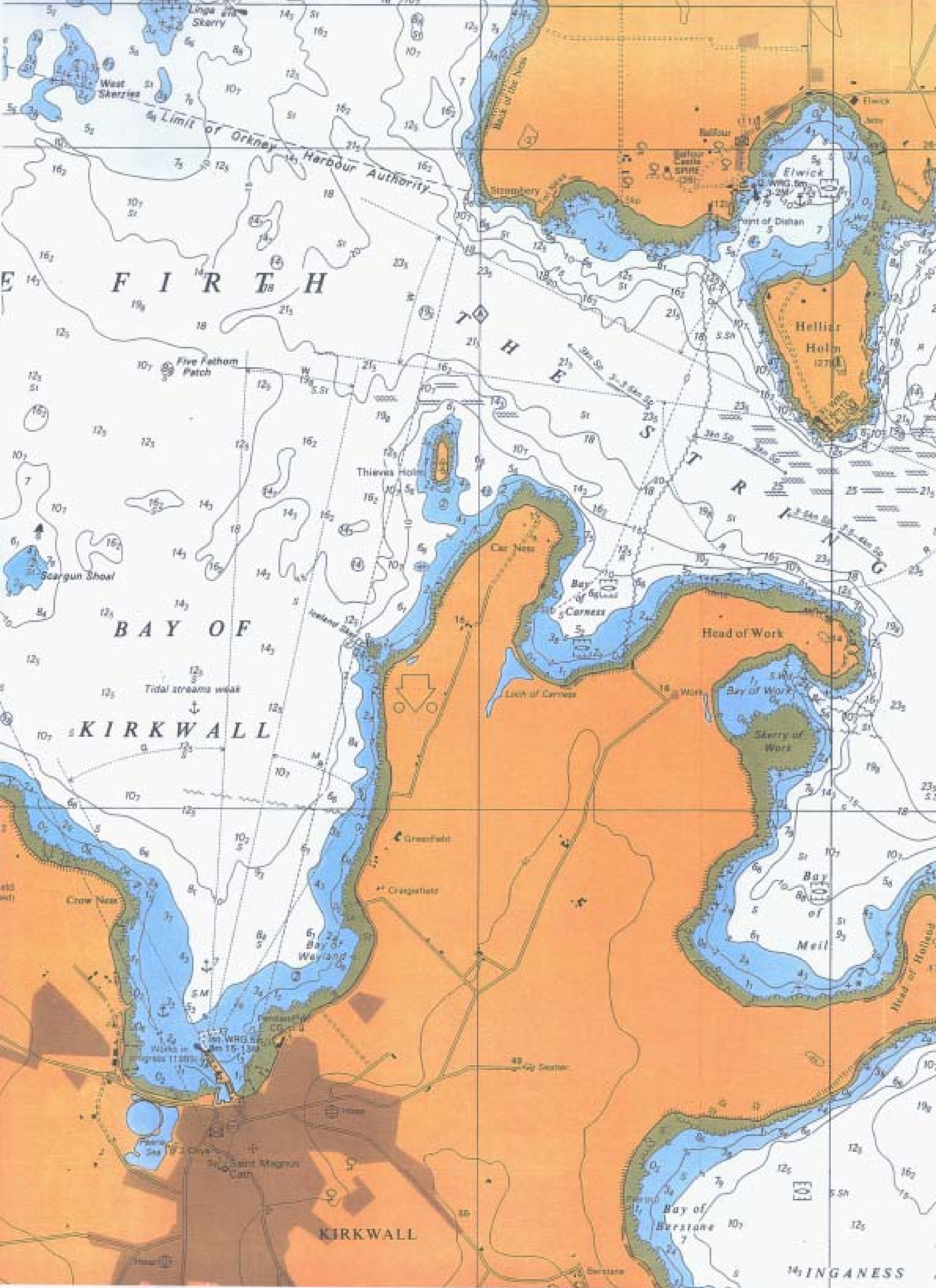
Glossary of Abbreviations

Dwt	Deadweight tonnage
ETV	Emergency Towing Vessel
GPS	Global Positioning System
GT	Gross tonnage
kW	kilowatts
MAIB	Marine Accident Investigation Branch
No	Number
ro-ro	roll-on/roll-off
Teu	Twenty feet equivalent units
UTC	Universal Co-ordinated Time
VHF	Very High Frequency





Linga Skerry
West Skerries
Limit of Orkney Harbour Authority
Five Fathom Patch
Scargun Shoal
THE FIRTH
THE STRING
BAY OF KIRKWALL
Tidal streams weak
Thieves Holm
Car Ness
Bay of Carness
Loch of Carness
Head of Work
Bay of Work
Skerry of Work
Work
Elwick
Balfour
Balfour Castle
Point of Dishan
Stromberry
Helliar Holm
Crow Ness
Greenfield
Craigiefield
Bay of Weyland
Bay of Meil
Head of Holland
Bay of Berstane
Berstane
Saint Magnus Cath
KIRKWALL
INGANESS

Synopsis

The Marine Accident Investigation Branch (MAIB) was notified of the accident on 4 February 1999 and an investigation started the same day.

Baltic Champ, a 1,660 GT Panamanian registered general cargo vessel, dragged her anchor and grounded off Kirkwall in west-south-westerly winds, gusting between 60 and 70 knots.

The master, who was alone on watch, failed to detect the vessel drifting astern in sufficient time to prevent her grounding. Although *Lloyd's Open Form* was eventually agreed with the master of the anchor handling tug *Havila Chieftain*, *Baltic Champ* refloated on the next tide and her master manoeuvred her clear before a tow could be established. Damage was sustained to her hull, but there were no injuries and no pollution.

Contributory causes included the prevailing weather conditions, the close proximity of a leeshore, an undue reliance on the officer of the watch to detect immediately any drift, an inadequate length of cable used to anchor the vessel, and inadequate monitoring of the vessel's position.

A risk of further damage and oil pollution could have been reduced had a tow been prepared immediately after the tug's arrival. This would have required, at that time, either *Havila Chieftain*'s master agreeing to a towing contract or *Baltic Champ*'s master agreeing to *Lloyd's Open Form*. Had a coastguard emergency towing vessel (ETV) been available, the coastguard would have been free to negotiate a towing contract.

The Maritime and Coastguard Agency is recommended to review its dedicated United Kingdom emergency towage cover, taking into account the desirability of securing a towing contract in deteriorating situations where one cannot be agreed by commercially interested parties.

BALTIC CHAMP

Section 1 - Factual information

1.1 VESSEL AND ACCIDENT PARTICULARS

Name	:	*Baltic Champ*
Port of Registry	:	Panama
Call Sign	:	3FBD5
GT	:	1,660
Dwt	:	2,060
Length	:	71.96 metres
Breadth	:	12.81 metres
Draught	:	4.45 metres
Speed	:	12 knots
Type	:	General cargo multideck
Teu	:	127
Propulsion	:	Controllable pitch propeller, Kort nozzle, bow thruster
Power	:	1 280kW
Anchors/cables	:	Two; 7 shackles port, 8 shackles starboard
Built	:	1977, Germany
Owner	:	North Transit Marine, Panama
Manager	:	H Glahr & Co GmbH & Co KG, Bremen, Germany
Time and date of accident	:	Approximately 0240 (UTC), 4 February 1999
Place of accident	:	Kirkwall, Orkney Islands
Injuries	:	None
Damage	:	Grounding damage to hull
Pollution	:	None

1.2 BACKGROUND

Baltic Champ was operated on a regular twice-weekly schedule from Aberdeen, calling at Kirkwall and Lerwick. At the time of the accident, all her statutory certificates were valid and she was manned by a crew of seven; comprising a master, a chief officer, a chief engineer, two able seamen, one able seaman/motorman, and one able seaman/cook. The master and chief officer were Finnish, and the remaining crew were Russian.

Kirkwall pier is angled, with an L-shaped head, and extends northwards from the shore. *Baltic Champ* was usually berthed at either the outer head berth or the outer western berth. On this occasion, prior to the accident, she was allocated the outer western berth. Repairs were being carried out to the outer head berth.

1.3 NARRATIVE (times are UTC)

Baltic Champ arrived port side alongside the outer western berth in Kirkwall at 0905 on 3 February 1999, with a cargo of containers, stowed both above and below deck. Discharge operations were started at 0930, but were suspended by shore staff at 1100, due to strong winds.

At 1300, the master was instructed by the harbour master to leave the berth to allow *Contender*, a regular-calling ro-ro vessel, sufficient sea room to berth sternfirst at the ro-ro berth, situated ahead of *Baltic Champ*. Initially, the master protested and offered to move astern to the outer limit of the pier. However, after being told that *Contender*'s bow thruster was inoperable, he agreed to anchor off the port.

At 1500, *Baltic Champ* left the berth with the assistance of *Kirkwall Bay*, a pilot vessel/tug operated by Orkney Harbour Authority. She was still partly loaded and full of ballast with forward and after draughts of 2.10 metres and 4.30 metres respectively.

There is conflicting evidence with respect to what advice was given to the master, and by whom, with regard to an appropriate anchorage in the prevailing circumstances and conditions. The vessel was sufficiently small as not to require a pilot. Ideally, the master did not want to heave-to outside port limits because he still had cargo to discharge. Instead, he decided to anchor in a position to the east of Helliar Holm, with a view to shifting to the east of Shapinsay should the vessel start to drag anchor. He had not anchored *Baltic Champ* before.

At 1600, *Baltic Champ* was anchored in position Latitude 59°01.5'N, Longitude 002°52.9'W, using the starboard anchor and 4 shackles of cable in the water. The master calculated the length of anchor cable to use by adding twice the depth of water to the vessel's length. The charted sounding was 20 metres. Although the weather conditions were adverse, he did not want to use more cable in case it had to be recovered quickly should the vessel start to drag anchor. The windlass brake and anchor cable clamp were applied, and the electrical power supply was left on with the windlass out of gear. While at anchor, the engine was left running with the propeller pitch in neutral. Weather forecasts were received automatically by navtex.

At 0130 on 4 February, the master relieved the chief officer on watch and checked the vessel's position by radar and GPS navigator. The radar was operating on the 0.75 mile range scale with two variable range markers; one was set on the echo of Helliar Holm lighthouse, and the other on the conspicuous echo of a house, in a direction about 90° from the lighthouse. The master was alone in the wheelhouse with a stand-by crewman stationed in the messroom. A watch alarm was not fitted on the vessel.

Wheelhouse

Windlass

The master drank a cup of coffee and sat in the starboard wheelhouse chair for about half-an-hour. He then walked around the wheelhouse, occasionally looking at the radar to check the vessel's position.

After a while, the master noticed from the radar display that the vessel was moving quickly astern. He called the stand-by crewman on the intercom and said, "Quickly to anchor". He also telephoned the chief officer, and then put the propeller pitch ahead in an attempt to arrest the vessel's drift astern, which he thought was due to the anchor cable having parted.

The walkway on deck was obstructed by containers so that the crewman, and subsequently the chief officer, were forced to proceed forward via the cargo hold. The crewman carried a portable radio. On arriving forward, he reported that the anchor cable was leading ahead and the anchor was dragging. The master instructed the crewman to get ready to heave or slack away more cable, expecting him to put the windlass into gear. Seeing that the vessel was close to the shore, he then instructed the crewman and the chief officer, who was proceeding forward, to heave the anchor cable.

The vessel grounded on her starboard side aft, in position Latitude 59°01.803'N, Longitude 002°51.805'W, approximately 0.65 mile from the anchorage position. The anchor cable was leading about 5° on the port bow with 3 shackles in the water. The windlass was unable to heave any more cable, and so the master instructed the chief officer and crewman to stop. The vessel was heading 240° at this time.

The master initially contacted Orkney Harbour Radio at 0243 on VHF radio channel 11, stating that he was dragging anchor and requesting the assistance of *Kirkwall Bay*. Orkney Harbour Radio advised that *Kirkwall Bay* was not able to assist immediately but that Pentland Coastguard would send the lifeboat. The master communicated with Pentland Coastguard on VHF radio channel 11 and then 67. Kirkwall RNLI lifeboat arrived on scene at 0315. The crew of *Kirkwall Bay* were called and assembled at the vessel. However, the weather conditions were marginal for safe operation and, at 0333, they were stood-down. Rescue helicopter OC was scrambled from Sumburgh at 0336 and tasked to proceed to Kirkwall airport for possible evacuation from *Baltic Champ*.

The master put the propeller pitch to neutral and applied port helm to lean the vessel into the ground. He then put the propeller ahead in an attempt to free the vessel. However, this only caused increased vessel movement, and so the master returned the propeller pitch to neutral.

The chief engineer sounded the engine room tanks and No 4 double bottom ballast tanks, whose sounding pipes were in the engine room. No ingress of water and no leakage of oil were noted. The remaining ballast tanks were not sounded because the stowed containers on deck prevented ready access to their respective sounding pipes. Soundings were then taken around the outside of the vessel.

The master calculated that by discharging No 4 double bottom ballast tanks and No 3 wing ballast tanks, the stern could be raised by about 0.70 metre. This ballast was discharged at low water between 0600 and 0730.

At 0600, Pentland Coastguard broadcast a "Pan Pan" and, at 0622, informed *Baltic Champ*'s master that the anchor handling tug *Havila Chieftain* was expected to arrive on scene between 0930 and 1000. *Baltic Champ*'s master spoke with his owner and expected him to arrange a towing contract to refloat the vessel on the rising tide.

Havila Chieftain arrived at 0900, at which time her master offered *Baltic Champ*'s master *Lloyd's Open Form*, which was refused. *Baltic Champ*'s master was in satellite telephone communication with the manager and insurer, both of whom told him to wait for a towing contract to be agreed. He was also in mobile telephone communication with *Havila Chieftain*'s master.

Baltic Champ's movement progressively increased and, at 1015, the master unsuccessfully attempted to free the vessel by putting the propeller pitch ahead. Both the coastguard and the harbour authority recommended to the master that he should take *Lloyd's Open Form*. The manager and insurer told him that the decision was his to make.

At 1030, the master decided to accept *Lloyd's Open Form* because he wanted to avoid further damage to the vessel, with the consequent risk of oil pollution.

At 1050, a rocket line was passed from *Havila Chieftain* to *Baltic Champ*. The line was passed through the centre panama lead, but before it could be taken around the drum of the windlass, it pulled free from the hands of the chief officer. The master then instructed his crew to prepare some heaving lines.

At 1100, while *Havila Chieftain* was manoeuvring towards *Baltic Champ* in a further attempt to pass a line, *Baltic Champ* floated free of the ground and swung to port. The master then manoeuvred his vessel ahead and about 90° to starboard, before applying astern propulsion and bow thrust to port. During the manoeuvre, the anchor cable parted at about two shackles from the anchor.

Baltic Champ arrived alongside the outer western berth at 1200. *Kirkwall Bay* assisted in the berthing operation.

1.4 ENVIRONMENTAL CONDITIONS

1.4.1 Weather

At 1100 on 3 February, the *Baltic Champ* was experiencing westerly winds with gusts up to 50 knots.

At 0130 on 4 February, the vessel was experiencing west-south-westerly winds, gusting between 60 and 70 knots.

At 1100, the wind at the vessel was west-south-westerly with gusts between 80 and 90 knots.

1.4.2 Tides

The times of high water at Kirkwall on 4 February were 0051 and 1304. Low water was at 0627.

1.5 MASTER OF *BALTIC CHAMP*

The master held a captain's certificate of competency issued by the Finnish administration in 1974. He had worked at sea since 1963 and had served in many types of vessels, trading worldwide.

He had previously served a three-month trip on board *Baltic Champ*, and most recently had joined the vessel on 28 December 1998. Watches were alternated between the master and the chief officer.

The master slept from 2100 on 2 February to 0300 on 3 February and from 2030 on 3 February to 0130 on 4 February. He also had an hour's rest on his cabin daybed between 0900 and 1100 on 3 February.

On taking the watch at 0130 on 4 February, he felt rested and fit for duty. He had not consumed alcohol and had not taken drugs or other medicines. Prior to the incident, he did not leave the wheelhouse, and at no time did he feel drowsy or fall asleep.

The master was aware that lack of rest over a long period of time can lead to reduced alertness. With this in mind, he had told his manager that a two-month trip was long enough.

1.6 ANCHORAGE

It was not uncommon for vessels the size of *Baltic Champ* to anchor in a position to the east of Helliar Holm in similar weather conditions. The weather forecast issued on 3 February 1999 was for west to west-south-westerly winds gusting up to 80 knots and veering north-westerly overnight.

The following is an extract from *The North Coast of Scotland Pilot (NP52)*:

> *Temporary anchorage while awaiting a tide can be obtained E of Helliar Holm but care must be taken to avoid abandoned submarine cables in the vicinity, as shown on the chart.*

1.7 TUGS

1.7.1 Orkney Towage Company Limited

Three tugs of between 50 and 55 tonne bollard pull were stationed in Scapa. *Alandia Surf*, an oil tanker of 93,142 dwt, had a pilot on board and was waiting to sail from Flotta Marine Oil Terminal at the time of the incident. Although one or more of the tugs could have been sent immediately to assist *Baltic Champ*, there was a reluctance to do so due to:

- no "Mayday" broadcast from *Baltic Champ*;
- no reported damage;
- no reported threat to life;
- minimal threat of pollution;
- contractual obligations;
- darkness and adverse weather; and
- lifeboat and rescue helicopter attendance.

1.7.2 Emergency towing vessel (ETV)

The coastguard emergency towing vessel *Anglian Prince* was tasked, and proceeded from her mooring in Loch Ewe at 0355 with an estimated passage time of 14 hours. She was eventually released by Pentland Coastguard at 1050 and returned to The Minch.

1.7.3 *Havila Chieftain*

Havila Chieftain, an anchor handling tug in position Latitude 58°37.5'N, Longitude 001°59.5'W, responded to the "Pan Pan" broadcast at 0600 and, at 0612, was tasked by Pentland Coastguard on search and rescue grounds to proceed to the grounding position. Her estimated time of arrival was 0930 and she eventually arrived on scene at 0900.

Section 2 - Analysis

2.1 ANCHORAGE

The decision to require *Baltic Champ* to leave her berth was commercially driven and reasonable. The worsening weather conditions had led to her discharge being suspended, but cargo operations were still possible at the ro-ro berth. Although there was normally sufficient sea room for *Contender* to proceed alongside the ro-ro berth with *Baltic Champ* secured alongside the outer western berth, on this occasion she was hampered by the failure of her bow thruster.

Baltic Champ's master appreciated the increased difficulty faced by *Contender* in the prevailing weather conditions and reluctantly agreed to anchor off the port. In view of the advice given in *The North Coast of Scotland Pilot (NP52)* and the anticipated change in wind direction to the north-west, his choice of anchorage to the east of Helliar Holm was reasonable. However, the close proximity of a leeshore in the prevailing strong winds rendered it essential that an adequate length of anchor cable was used to prevent dragging. An alternative option was to heave-to or anchor in a position to the east of Shapinsay. However, the master was aware of the need to eventually return alongside to complete cargo operations and this probably influenced his decision to anchor closer to Kirkwall.

Although 8 shackles of cable were available for use with the starboard anchor, the master chose to limit himself to using only 4 shackles in the water because he wanted to be able to recover the anchor quickly should it start dragging. A cable length of 4 shackles would have been reasonable in moderate weather conditions. However, more cable should have been deployed in the prevailing strong winds to counter the consequent increased risk of dragging. It was a wise precaution to leave the engine running for immediate use, but the close proximity of a leeshore placed undue reliance on the officer of the watch to detect immediately any drift caused by the anchor dragging and to take effective action to prevent the vessel grounding. If the master was uncertain that the anchor would not drag using the length of cable available to him, he should have hoved-to or anchored well clear of a leeshore.

Any reservations the master might have had with regard to the possibility of the anchor dragging were countered by his increasing confidence that it would not do so during the 10 hours the vessel remained in position.

2.2 GROUNDING

The time interval between the master initially detecting that the vessel was moving astern and the subsequent grounding is uncertain. However, it is apparent that ahead propulsion was not applied in sufficient time to counter the drift and so prevent the vessel running ashore.

The close proximity of the leeshore rendered it essential that any drift, caused by the anchor dragging, was immediately identified. Monitoring the vessel's position on radar by means of two variable range markers was appropriate, but required frequent observation. When the drift was first detected, the vessel was already moving quickly, which suggests the interval between radar observations was inadequate.

The vessel had remained in position for 10 hours. Consequently, it is probable that the master had become complacent with respect to his monitoring of the vessel's position. It is also possible that he was fatigued due to irregular and limited opportunities for sleep during his period of time on board.

2.3 TUGS

Prior to 1030 on 4 February, *Baltic Champ*'s master considered his vessel was in no immediate danger. This was a view initially shared by the coastguard and the harbour authority. However, both latterly recommended that he should take *Lloyd's Open Form* from *Havila Chieftain*. Although available to the coastguard, no powers of intervention were invoked.

In the absence of a "Mayday" broadcast, there was no requirement for any vessel to proceed to the assistance of *Baltic Champ*. However, *Havila Chieftain* was tasked by Pentland Coastguard on search and rescue grounds to proceed to the grounding position. The coastguard tug *Anglian Prince* was also tasked but was too far away to be of assistance.

From 0900 on 4 February, *Havila Chieftain* was in a position to secure a tow in preparation for an attempt to refloat *Baltic Champ* at the next high water. However, the tug's master was only prepared to offer *Lloyd's Open Form*, which was unacceptable to the master, manager and insurer of *Baltic Champ*. A towing contract could not be agreed. Therefore, it was not until 1050, by which time *Baltic Champ* had started to refloat and the master had agreed to *Lloyd's Open Form*, that an attempt was made to connect a tow.

Although the vessel might have been in no immediate danger prior to 1030, a risk of further damage and possible oil pollution could have been reduced had a tow been prepared immediately after the tug's arrival. This would have required at that time either *Havila Chieftain*'s master agreeing to a towing contract or *Baltic Champ*'s master agreeing to *Lloyd's Open Form*. Had *Anglian Prince* been available, the coastguard would have been free to negotiate a towing contract.

In the event, attempts to secure a tow were unsuccessful and *Baltic Champ*'s master was able to refloat his vessel without assistance.

Section 3 - Conclusions

3.1 CAUSE

The cause of the grounding was a failure to prevent the vessel drifting ashore.

3.2 CONTRIBUTORY CAUSES

1. The prevailing weather conditions caused *Baltic Champ* to drift towards the shore. (2.1)

2. *Baltic Champ* was anchored in close proximity to a leeshore. (2.1)

3. *Baltic Champ* was required to leave her berth at Kirkwall to allow *Contender* access to the ro-ro berth. (2.1)

4. *Contender* was hampered in manoeuvring by the failure of her bow thruster. (2.1)

5. *Baltic Champ*'s master decided to anchor in a position to the east of Helliar Holm. (2.1)

6. The master's choice of anchorage was influenced by advice given in *The North Coast of Scotland Pilot (NP52)* and by the need to return alongside eventually to complete cargo operations. (2.1)

7. The master became increasingly confident that the anchor would not drag during the 10 hours the vessel remained in position. (2.1)

8. The master placed undue reliance on the officer of the watch to detect immediately any drift and to take effective action to prevent the vessel grounding. (2.1)

9. The master was confident that effective action could be taken to prevent the vessel grounding by leaving the engine running for immediate use. (2.1)

10. The length of cable used to anchor the vessel was inadequate. (2.1)

11. The master failed to detect the vessel drifting in sufficient time to prevent her running ashore. (2.2)

12. The master had probably become complacent with respect to his monitoring of the vessel's position. (2.2)

13. The master was possibly fatigued. (2.2)

3.3 OTHER FINDINGS

1. It was a wise precaution to leave the engine running for immediate use. (2.1)

2. A risk of further damage and possible oil pollution could have been reduced had a tow been prepared immediately after *Havila Chieftain*'s arrival. (2.3)

3. Had the coastguard tug *Anglian Prince* been available, the coastguard would have been free to negotiate a towing contract. (2.3)

Section 4 - Recommendations

4.1 THE MARITIME AND COASTGUARD AGENCY is recommended to:

Review its dedicated United Kingdom emergency towage cover, taking into account the desirability of securing a towing contract in deteriorating situations where one cannot be agreed by commercially interested parties.

Marine Accident Investigation Branch
July 1999