

Report on the investigation of the grounding  
of the general cargo vessel  
**'BREMER VICTORIA'**  
in the Gulf of Bothnia, Sweden  
10<sup>th</sup> February 2006

Government of Gibraltar  
Ministry of Maritime Affairs  
Maritime Administration  
Watergate House  
2/8 Casemates Square  
Gibraltar

**NOTE**

This report is not written with liability in mind and is not intended to be used for the purpose of litigation. It endeavours to identify and analyse the relevant safety issues pertaining to the accident, and to make recommendations aimed at preventing similar accidents in the future.

## CONTENTS

	Page
<b>GLOSSARY OF ABBREVIATIONS AND ACRONYMS</b>	4
<b>SYNOPSIS</b>	5
<b>SECTION 1 - FACTUAL INFORMATION</b>	6
1.1 Particulars of ' <i>Bremer Victoria</i> ', and accident	6
1.2 Background	7
1.3 Crew	8
1.4 Environmental conditions	8
1.5 Narrative of events	8
1.6 Wheelhouse & bridge equipment & layout	11
1.7 Survey and inspection	12
1.8 STCW 95	13
1.8 ISM	13
1.9 Manning	15
<b>SECTION 2 – ANALYSIS</b>	
2.1 Aim	17
2.2 General	17
2.3 Passage Planning	17
2.4 Fatigue	17
2.5 One man bridge operation at night	18
2.6 ISM/hours of work and rest	18
2.7 Manning	
<b>SECTION 3 - CONCLUSIONS</b>	
3.1 Safety issues	20
<b>SECTION 4 – RECOMMENDATIONS</b>	21

## **GLOSSARY OF ABBREVIATIONS, ACRONYMS AND TERMS**

IMO	-	International Maritime Organisation
SMS	-	Safety Management System
SMM	-	Safety Management Manual
ISM	-	International Safety Management Code
DPA	-	Designated Person Ashore
ISPS	-	International Ship & Port Facility Security Code
kW	-	kilowatt
m	-	metre
UTC	-	Universal Co-ordinated Time
cc	-	compass course
cu m	-	cubic metre
mt	-	metric ton

## SYNOPSIS

At 20.30 (UTC + 1) on 10<sup>th</sup> February 2006, the general cargo vessel '*Bremer Victoria*' whilst on a voyage from Norrsundet, Sweden to the Kiel Canal and loaded with a timber cargo, above and below deck, run aground at Björn, a small island 060° 38,5' N / 017° 58,8 E off the mainland Swedish coast line in the Gulf of Bothnia in the Baltic Sea. The Gibraltar Maritime Administration were informed at 08.40 on 13<sup>th</sup> February 2006 and an investigation was started.

Although damage was sustained to the forward underwater part of the vessel and she was held fast on the rocks, there was no pollution or any personal injury. Under the command of the vessels Master various attempts were made overnight to free the ship using her own engines. The Swedish Coast Guard boarded the vessel at 09.30 on 11<sup>th</sup> February 2006 to assess the situation and assist where possible. A pilot boarded at 10.10 when further attempts were made with the assistance of a tug to free the ship. The vessel remained fast and the pilot departed at 19.00.

Another vessel owned and operated by the same company that was nearby and in ballast arrived at the scene at 08.20 on 13<sup>th</sup> February 2006 and by using her own deck cranes managed to lighten the '*Bremer Victoria*' sufficiently for her to float free of the rocks by 14.30 the same day. Both vessels returned to the loading port of Norrsundet to discharge to cargo.

Several factors contributed to the accident including:

- The fatigue suffered by the master.
- The master's failure to adhere to an appropriate passage plan.
- The lack of an additional person on watch during the hours of darkness.
- The possibility that the bridge watch alarm may have been intentionally switched off.
- The poor on board management with regard the vessels Safety Management System.
- The lack of an additional watchkeeping officer onboard.

Appropriate recommendations have been made to those concerned which can be found at the end of this report.

## SECTION 1 – FACTUAL INFORMATION

### 1.1 PARTICULARS OF '*BREMER VICTORIA*', AND ACCIDENT

#### Vessel Details

Name of Vessel	:	<i>'Bremer Victoria'</i> (IMO No. 99226176)
Registered Owner	:	Bremer Reederei E & B GmbH Anne-Conway Strasse 1 D-28359 Bremen Germany
Bareboat Charters	:	Chandler Shipping Co Ltd 28 Irish Town Gibraltar
Operator	:	Briese Schiffahrts GmbH & Co KG Hafenstrasse 12 D-26789 Leer Germany
Port of Registry & Flag	:	Gibraltar
Date of Registration	:	21 <sup>st</sup> October 2005
Type	:	General Cargo Vessel
Built	:	2000 Damen Shipyards, Bergum, The Netherlands
Classification Society	:	Bureau Veritas
Class Notation	:	1 + Hull & Machinery General Cargo Ship Unrestricted Navigation Ice III
Class Valid Until	:	21 <sup>st</sup> December 2010
Construction	:	Steel
Gross Tonnage	:	1,782
Engine power and type	:	1 x Caterpillar DITA 3512B, 955 kW
Deck Equipment	:	1 x small gantry crane for the movement of pontoon type hatch covers.

**Accident details**

Injuries	:	None
Pollution	:	None
Damage	:	Fore Peak Tank Bow Thruster Compartment Forward 2 sets (Port & Starboard) Double Bottom Ballast Tanks
Location of Accident	:	060° 38,5 N / 017° 58,8 E - Gulf of Bothnia
Date and Time	:	22.30 (UTC + 1) on 10 <sup>th</sup> February 2006

## 1.2 BACKGROUND

The *'Bremer Victoria'* was built in 2000 at Daman Shipyards, Holland. A 1,782 gross ton general cargo vessel but constructed for the timber trade with the hatch coaming sides being higher above the freeboard deck than is normal; to increase the volume of cargo space below deck for low density cargoes. The owners also have another four vessels of similar or slightly larger size, some with their own deck cranes. The *'Bremer Victoria'* and three other of the company's ships are under the Gibraltar flag. The operators, Briese Schifffahrts GmbH & Co KG are well known for the operation of this size of vessel engaged on similar trades and have some 70 other vessels either owned or managed, with approximately 40 of them registered with Gibraltar.

The *'Bremer Victoria'* was registered with Gibraltar on 21<sup>st</sup> October 2005. Bureau Veritas were delegated the task of attending for the flag state to carry out the necessary statutory surveys, which included conducting an ISM pre-audit and ISPS pre-verification. This they did with satisfactory results and interim certificates were issued valid for six months.

Since being taken over by the present owners in October 2005, the ship had been engaged on its present trade of transporting timber products, mainly prepared and package lumber from Sweden, to normally two discharge ports in the UK. The ship normally back-loads a cargo for the northern continent or Baltic Sea areas. Both the outward and return voyages involve transits through the Kiel Canal. The round trip typically takes approximately two weeks

Most voyages from Norrsundet involve the vessel being fully loaded, which also included a deck cargo of prepared packaged timber. With the hatch cover gantry crane parked and secured at the aft end of the main deck, the deck cargo stow consist of two, one metre high layers. The lower one is stowed from the crane to the forward end of the hatch covers and the upper one from the crane forward stopping some eight metres from the end of the covers. This allows for a less restricted view forward from the bridge, which is an important consideration when transiting the Kiel Canal. However it is also the practice when in buoy channels to have a forward look out posted on the forecastle to assist with the navigation.

As the deck cargo is packaged prepared timber, this is normally protected against sea and weather by tarpaulins. This involves the tarpaulins having to be spread out and overlapping the hatch covers and the cargo is then loaded on top. The tarpaulins are then folded over the packages for protection and then the stow is securely lashed. Throughout the loading of the deck cargo, in both preparation and securing of it, a high level of man-hours are required, which is in some ways made more difficult due to the height of the hatch coamings above the freeboard deck and the securing points.

### **1.3 THE CREW**

At the time of the accident the crew on board '*Bremer Victoria*' consisted of the Master, Chief Officer, Chief Engineer and three Navigational Watch Ratings (one suitably qualified and taking on the duties of the Cook). All crewmembers were of Russian nationality with the exception of one rating that was Ukrainian. All held valid qualifications issued by their respective flag state and the Officers were in possession of valid Gibraltar endorsements in recognition of their Certificates of Competency. All medical fitness certificates were in order and valid.

With the exception of the Chief Engineer who joined the vessel on 8<sup>th</sup> December 2005 and a Watch Rating who joined on 5<sup>th</sup> February 2006, all the other members of the crew, including the Master joined the vessel around the 19<sup>th</sup>/21<sup>st</sup> October 2005 when it was taken over from the previous owners.

### **1.4 ENVIRONMENTAL CONDITIONS**

At the time of the accident visibility, sea and weather conditions were good. Sun set was approximately 17.15.

### **1.5 NARRATIVE OF EVENTS (ALL TIMES UTC + 1,)**

The following is taken as abstracts from the deck log book.

Friday 4<sup>th</sup> February 2006

Flushing - after completion of loading depart at 04.30

Saturday 5<sup>th</sup> February 2006

Kiel Canal transit - between 07.00 and 16.00

Monday 6<sup>th</sup> February 2006

Swinoujscie

10.00 – all fast alongside

16.25 – discharge completed

pilot on board / let go – 17.00

full away – 17.30

Tuesday 7<sup>th</sup> February 2006

At sea

Wednesday 8<sup>th</sup> February 2006

Norrsundet

15.00 – all fast alongside

November 2006 - Final Report

Thursday 9<sup>th</sup> February 2006

Norrsundet

07.15 – commence loading cargo

16.00 – loading ceased

Friday 10<sup>th</sup> February 2006

Norrsundet

07.00 – resume loading cargo

15.50 – loading completed – 3118.21 cu m 1430 mt

18.30 – lashing completed - draft fore 3.98m aft 4.17m

18.45 – let go – depart Norrsundet

19.30 – 060° 57,9 N / 017° 15,5 E cc 120°

20.30 – 060° 52,7 N / 017° 37,2 E cc 143°

21.00 – 060° 48,1 N / 017° 38.8 E

22.30 – 060° 38,5 N / 017° 58.8 E – run aground

Following the departure from Swinoujscie on 6<sup>th</sup> February 2006, the vessel proceeded north to a waypoint 060° 30 N / 018° 53 E, just east of the Grundkallen Light and then steered a course of 240° towards Norrsundet. Ice was observed to the northeast while on this course. During the following days until departure from Norrsundet, the predominant winds were from the southwest, and it was the Masters opinion that the coastal ice from the Gävle area would be blown northeast towards the ice already near the intended reciprocal course of 120° on departure. Before departure, he therefore instructed the Chief Officer to draw up a voyage plan that would take him down the coast to the buoyed channels off Gävle, then east south east coming below the expected ice, until reaching the Grundkallen Light.

In the early morning on the day of departure from Norrsundet, 10<sup>th</sup> February 2006 at approximately 08.30 the Master complained to the Chief Officer that he felt un-well and may be running a temperature. This was checked and noted as being 38.3°C. The Chief Officer gave the Master some paracetamol tablets and vitamin C. The Master later stated that he may have taken another dose of this medication early in the afternoon, but does not think that he took any more after that. The Master also stated that he remained either on the bridge, or in his cabin throughout the day. His record of rest hours shows that apart from an hour taken at lunchtime, he had been working since 07.00.

After completion of loading at 15.50 and prior to departure at 18.45, the Master remained on the bridge or in his cabin dealing with ships business while the rest of the Officers and crew lashed the deck cargo and prepared for sea. By the time the ship departed it was dark. The Master was on the bridge and it was he who took the ship to sea. After being stood down from their mooring stations the crew went for their evening meal. The Master did not call a Navigational Watch Rating to the bridge to act as look out.

The Chief Officer remained on the forecastle during the short buoyed passage to open water, then completed securing the deck and reported to the bridge. He stated that he thought the Master looked tired and offered to take the

watch for a while so he could rest. The Master refused and told the Chief Officer to take his own rest ready for his 24.00 mid-night watch. The Chief Officer left the bridge at approximately 19.15 and went to his cabin.

On clearing the buoyed channel, the Master noted that the ice he expected to encounter on a course of 120° was not as bad as expected. The voyage plan down the coastal route was therefore disregarded and he continued with the original plan involving the 120° course. However, as he progressed along this course ice started to become apparent so course alterations were made to bring the vessel further south skirting around the ice.

After these course alterations, continuous adjustments were further made using the autopilot to keep the vessel clear of the ice but bring it back to a more easterly direction, back onto the original course of 120°. Sometime before the original course was reached however, which would have given a clear heading towards the Grundkallen Light, the vessel grounded.

The Master had been navigating the ship by eye following the edge of the ice. There had been very little traffic on the VHF radio before the grounding and he had been sat in the pilots' chair, behind the steering position. Since leaving the berth until the vessel grounded the Master confirmed that he had been on the bridge alone.

The Deck Log Book showed that very few positions were recorded for the period before the grounding despite the Master deviating from the intended course. Once the Master decided not to follow a voyage plan, which would seem to have been around 20.30, only one more position was entered into the Log Book, which was at 21.00.

This entry had no indication of the course being steered. It was some 90 minutes between the last Log Book entry and the grounding. There was also a lack of entries made in relation to the vessels position on the charts in use throughout this period.

## **1.6 WHEELHOUSE & BRIDGE EQUIPMENT & LAYOUT**

The vessel is fitted with two radars, referred to as a river radar and sea radar. Both were in good working order and were in use during this passage.

The autopilot was in proper working order as was the alternative methods of steering from the various positions.

There are two GPS units available on the bridge, independently powered and both in good order.

The echo sounder fitted is in working order, but the Master has stated that this equipment was not in use at the time of the grounding.

The bridge is fitted with a dead-man alarm, and at the time of the grounding; the Master stated that this equipment was in use and set to alarm every ten minutes.

On 15<sup>th</sup> February 2006, all the above equipment was tested and found to be in order.

The dead-man alarm has three settings, off, ten minutes and fifteen minutes. There was a visual display of LED lights that acted as a time indication to show when the unit is about to go into the alarm state. Once the alarm is triggered it initially sounds on the bridge, and if that is unanswered after a short period of time it sounds in the Masters and Chief Officers cabins. If the alarm is again allowed to continue, after another set period of time, it then activates the ships general alarm.

A standing order had been issued by the company (circular N034) dated 24 November 2000 reminding all masters that it was a requirement that dead-man alarms were to be in use during sea passage.

Across the front of the bridge is the main control and navigation console with a chart table set on the starboard side. There are bridge-wing doors on both port and starboard sides. Access to the bridge from the accommodation is up an internal stairway at the rear of the wheelhouse that is on the starboard side of the ships centreline. The after starboard corner is fitted out with the radio equipment and the aft port side section contains a large fixed table with fixed seating with storage underneath on three sides. There are two pilot chairs provided, one set aft of the port bridge-wing door and the other on the portside at the top of the stairway putting this chair on the centre line of the vessel and immediately behind the steering position.

The wheelhouse is supplied by forced draft ventilation from the ships main air-handling unit. All wheelhouse windows are of the fixed non-opening type, so the only out side ventilation if required, would be by opening the bridge-wing doors. Although it is unlikely that the bridge could become over heated, there is a possibility that the atmosphere could become stuffy and stale, which would be made worse with cigarette smoke.

## **1.7 SURVEY AND INSPECTION**

In accordance with the relevant IMO Conventions the '*Bremer Victoria*' had undergone statutory surveys at the time of changing flag in October 2005. The ship had undergone special surveys for Class renewal at the same time as she changed flag and was assigned a new period of Class valid until 21<sup>st</sup> December 2010. The vessel had one condition of Class against her issued at Antwerp on 19<sup>th</sup> December 2005 following temporary repairs, and stating that permanent repairs should be carried out in the cargo hold, portside, between frames 90 - 91 to be completed by 18<sup>th</sup> January 2006.

Bureau Veritas attended the vessel on its return to Norrsundet following the grounding and apart from the damage to the forward underwater part, no other defects or deficiencies were noted and the vessel was allowed to sail under her own power at reduced speed to a repair yard in Poland.

## **1.8 STCW 95**

International standards for watchkeeping are laid down in *STCW 95* which came into force on 1 February 1997.

The provisions of *STCW 95* include a mandatory code pertaining to manning and operational matters. The code addresses watchkeeping at sea and sets out certain principles to be observed in keeping a navigational watch.

Relevant parts of the text read as follows:

*... All persons who are assigned duty as officer in charge of a watch...*

*shall be provided a minimum of 10 hours rest in any 24 hour period.*

*... The hours of rest may be divided into no more than two periods, one of which shall be at least 6 hours in length.*

*... The minimum period of 10 hours may be reduced to not less than 6 consecutive hours provided that any such reduction shall not exceed beyond two days.*

*... The officer in charge of the navigational watch may be the sole lookout in daylight provided that on each occasion ... (this is followed by conditions which should be taken into account such as weather, visibility and traffic density).*

*STCW 95* permits the officer of the watch to be the sole watchkeeper by day but not by night, although the wording of the text makes this only implicit

## **1.9 ISM**

The International Safety Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code) came into force fully on 1 July 2002. The Code requires companies to document and implement clear procedures, standards and instructions for safety management onboard. It also requires companies to provide safe working practices and identify risks.

The Safety Management System (SMS) operated by Briese Schiffahrts is run by a sub-contractor, Guideline GmbH who are responsible for the Safety Management Manual (SMM), its publication and amendments and for

conducting the company's internal audits. They in turn report to the company Designated Person Ashore (DPA) who has overall control of the SMS.

As part of the SMS the company also issues from time to time circular letters to cover nautical and technical subjects as well as information letters for general topics including ISM matters. Some of these letters were not available on board this vessel. However, there was in the file on board a letter from 2001 which is entitled 'Carelessness' and refers to a vessel going aground in Swedish waters in good visibility, with no sea state and no wind. Another letter is on the subject of the use of the dead-man's alarm in relation to the grounding of a company's vessel in 2000. It was noted that the missing letters include various letters in connection with ISM related topics following the annual management reviews with specific reference to recurring non-conformities raised across the fleet of vessels operated by the company, and the results of external office audits findings, and covered such subjects as rest hours, voyage planning, bridge procedures etc. There was also a missing circular letter for 'Ice Trading' with an appendix from the Finnish Rules for Winter Navigation. The Master gave the opinion that the missing documents may be due to the vessel being owned by Bremer Reederei but operated by Briese Schiffahrts. This should not be the case because the registered owner has appointed Briese Schiffahrts with the responsibility for the operation, including the safety management of the vessel, and therefore a full set of the letters supplementing and supporting the company's SMS must be available to the ship.

The Company has also published in November 2005 a procedure entitled 'Company Guidelines for Ships Command in Ice Areas', but it appears that this also was not available on board.

It is clearly stated in the SMM in the chapter relating to 'Shipboard Work Process' section 7.2.3 'The Ship At Sea' that it is the duty of the Officer-on-watch to "call a look-out the bridge during hours of darkness". In contradiction to these company instructions, the Master had been on the bridge alone during those hours of darkness leading up to the grounding. The crew confirmed that it was the normal practice for a Navigational Watch Rating not to be called to the bridge during the hours of darkness unless there were exceptional circumstances.

The Master also confirmed that it was not normal practice to have a lookout on the bridge at night, even though Deck Log Book entries were made to show the name of the watchman on duty; the logging of the watchman's name being in accordance with company standing instructions.

In the SMS, section 7.2.2 'Preparing for Sea' it stated that Chief Officer was responsible for "plans and documents the voyage according to companies requirements". In support of this procedure, the Designated Person Ashore (DPA issued a nautical circular letter with instructions that voyage planning should be done from berth to berth and not pilot to pilot and that the guidelines set out in the (International Shipping Federation) ISF publication "The Bridge Procedure Guide' should be applied.

As well as requirement for passage plans to be used, it is also a requirement of the company's SMS, as well as that of SOLAS that a 'Watch Keeping Plan' be drawn up and displayed at various points about the ship. This had been done. On the one used aboard *'Bremer Victoria'* in the remarks column beside the Watch Ratings names and duty hours is a comment that reads, *"During dark time, watch keeping is carried out on the navigating bridge. In port – at the gangway"*. This clearly was not being done.

The watch keeping scheduled for two of the crew, one being the Cook/Seamen did not correspond with the rest hours being recorded. For example the Cook/Seaman was scheduled to be on watch between 04.00 to 08.00 and 20.00 to 24.00, however his rest hours records show him working 04.00 to 08.00 and 16.00 to 20.00 and resting between 20.00 and 24.00.

The watch schedule for the Ratings it is an adaptation of the three-watch system. It is reproduced below:

Rating 1	4 on - 8 off - 4 on 8 - off
Rating 2	4 on - 4 off - 4 on - 12 off
Cook / Seaman	4 on - 12 off - 4 on - 4 off

Also, as part of the SMS procedures it is a requirement that all crewmembers complete on a monthly basis a company form for the 'Record of Rest times'. This form has printed under the title *"to be completed for all persons according to ILO 180"* and at the bottom of the page it carries an extract from STCW 95, Chapter VIII/1 that sets out the requirements for minimum rest periods.

It was the practice on this vessel for the Chief Officer to compile the records of rest hours for the crew (the Master doing his own) and the only input from the crewmember would be to sign the form at the end of the month.

## 1.10 MANNING

The 'Minimum Safe Manning' document issued by the Gibraltar Maritime Administration is for the following complement

Master (STCW Reg.II/2)  
Chief Officer (STCW Reg.II/2)  
Chief Engineer (STCW Reg.III/3) 2  
2 x Navigational Watch Rating (STCW Reg.II/4)  
Cook/Seamen (STCW Reg.VI/1)

This was the complement of the crew on board at the time of the incident although the Cook/Seaman was qualified as a Navigational Watch Rating (STCW Reg.II/4), and was therefore able to stand a bridge watch.

It was normal for the Master and the Chief Officer to stand six on / six off watches while at sea, the master being on duty between 18.00 - 24.00 and 06.00 - 12.00. In port, cargo operations were worked between them.

The engine room is certificated as being able to operate for periods un-manned; this required a Chief Engineer only in that department.

The 'Safe Manning Document' was based on the minimum numbers of crewmembers required for the safe navigation of the ship, and did not take into consideration any additional tasks the crew may have been required to carry out such as cargo handling, lashing etc. It was the responsibility of the company to determine if, due to the vessels trading schedule, area of operation or type of cargoes to be carried, additional crewmembers were required to be on board to ensure that all aspects of safety of operation were adequately covered.

*'Bremer Victoria'* has been regularly employed loading cargoes out of Norrsundet, where the loading of the deck cargo involved the preparation of tarpaulins and for the stow to be lashed down securely. Ships staff always carried out this work, as no shore labour was available in this part of Sweden. The Chief Officer normally instructed two men to conduct this task which would take five to six hours to complete.

It was therefore normal practice for all the ships staff to be involved, including the Chief Engineer, with lashing prior to departure, to speed up the operation.

The Master stated that for the past two months he had often requested from the company an additional Navigational Watchkeeping Officer to help with the running of the ship and the cargo workload. However, these requests were always done over the telephone and as a consequence there was no evidence available in writing.

Notwithstanding the above, the operators of the vessel have reported that there is always sufficient laytime at this particular port to enable sufficient rest for the crew, and in any event extending laytime, if need be, is left to the discretion of the master.

## **SECTION 2 - ANALYSIS**

### **2.1 AIM**

The purpose of the analysis is to determine the contributory causes and circumstances of the accident as a basis for making recommendations to prevent similar accidents occurring in the future.

### **2.2 GENERAL**

Fortunately, there was no injury or pollution as a result of this vessel running aground, however, better shipboard practices may have gone a long way in preventing the incident.

### **2.3 PASSAGE PLANNING**

It was a requirement of the SMS system that appropriate passage plans be conducted for every voyage.

A passage plan for the voyage was conducted on the available information at the time. However, the master decided to disregard this plan in favour of another, which would not take the vessel away from the coast probably due to commercial considerations. However, after a short period of time ice was experienced which necessitated constant course changes to the south to keep clear of the ice.

No attempt was made to construct another passage plan, when the master first encountered ice. Had he have done so, a revised plan, clear of obstructions and adhered to, would have been instrumental in preventing the vessel from grounding.

The fact that passage plans were not compiled to set guidelines, and that the master chose not follow the plan goes to show in some way the lack of good practice by the officers concerned on this vessel.

### **2.4 FATIGUE**

Undoubtedly a major factor into this accident was the fatigue suffered by the master. Even the best constructed passage plans if not adhered to, for whatever reason, will fail to prevent the vessel from running into danger.

In this particular incident, although the master did not openly admit, it is likely that he fell asleep while on watch sometime after 2100 hours; the last time a position was recorded on the chart, until the vessel grounded. As to how long he was asleep is a matter of speculation. It was claimed that the watch alarm was operational and set at a ten-minute interval but an analysis of the course steered by the vessel until she grounded shows little deviation from the course recorded at 2100 hours. For some reason, the master failed to return the vessel to its original course of 120° as intended.

From 0700 on 10 February until the vessel ran aground, the master had been on the go continuously. In addition to this, he was not feeling very well. Consequently, it comes as no surprise that during the watch leading up to the grounding, given the conditions on the bridge, the master inadvertently began to relax. This, more than likely coupled with the effects of cumulative fatigue caused by long hours of duty was a major cause of his inability to remain awake.

## **2.5 ONE MAN BRIDGE OPERATION AT NIGHT**

During the hours of darkness no additional lookout was posted on the bridge, contrary to *STCW 95*.

Lone watchkeeping at night was a regular practice on board *Bremer Victoria* and was also in contravention of standing instructions issued by the manager of the vessel. A second man present on the bridge acting as a lookout could have ensured that the master remained awake and, in any event, could have realized that something was amiss in time to prevent the grounding.

It is debatable whether the watch alarm was operational or whether it had been deliberately turned off. It is not uncommon for sole watchkeepers to deliberately turn off watch alarms to prevent them from becoming annoying.

Needless to say, a fully operational bridge watch alarm could also have ensured that the master remained awake.

## **2.6 ISM / HOURS OF WORK AND REST**

An analysis of the hours of work and rest by the crew, and the watchkeeping plan showed that both methods of recording were not being adhered to in accordance with the SMS system. Additionally, the SMS documentation on board was incomplete.

From a further analysis of the deck log book and other documents, and from interviews with the Chief Officer and the crew, it is clear that the hours of work and rest being recorded do not match the way the vessel was being operated. The Chief Engineer had not been keeping any records of rest hours as required by the company and although the schedule should ensure proper rest periods, it is presumed that within the Cook/Seaman's 'off' periods, meals have to be prepared, served and cleared away, making it doubtful if it was adhered to. Such failings point to sloppy on board management with regard to the implementation of the company's SMS.

## **2.7 MANNING**

Like many small cargo vessels *Bremer Victoria* ran to a tight schedule. Again, like many vessels of her type, manning was no more than the minimum required and the watchkeeping was shared between the master and the mate.

For officers working an equivalent number of hours on and off watch, the theory that the off-watch hours can be entirely spent resting is impossible to achieve due to the schedule of the vessel and other tasks which must be completed while off watch, both at sea and in port. Heavy weather, fog, and pilotage duties are a few instances where the master must either take over the conduct of the vessel himself, or at least be present on the bridge.

While off watch, apart from meal times and undertaking domestic chores, the master has to deal with various items of paperwork, inspections and drills etc. All these activities must be carried out during off-watch periods.

The master recognized, at times, it was difficult to achieve adequate rest hence his request to the managers of the vessel for an additional watchkeeping officer.

Notwithstanding this fact the master however, did have the option of employing better management of his work / rest time, especially with regard to the lashing of the deck cargo. The employment of 2 persons, as was normal, would have allowed the master to rest for 5-6 hours before departure. In addition, the master was authorized by the company to extend the period of laytime if need be.

However, neither option was taken, probably due to perceived commercial pressure.

The number of officers carried on board *Bremer Victoria* was in accordance with her safe manning document and based on the minimum amount of crew required for the safe navigation of the ship. The minimum manning did not account for additional requirements of the officers or crew specific to the vessels trading pattern.

In this regard a risk assessment should have been carried out by the managers to determine if additional crew were required. It is apparent from this incident that the employment of an additional watchkeeping officer would have overcome the problem of existing officers and, in particular, the master being unable to achieve adequate rest. Notwithstanding this, had the master managed his work / rest time efficiently additional rest time could have been achieved.

## **SECTION 3 – CONCLUSIONS**

### **3.1 SAFETY ISSUES**

The following are safety issues identified by the investigation. They are not listed in any order of priority.

- The fatigue suffered by the master.
- The masters failure to adhere to an appropriate passage plan.
- The lack of an additional person on watch during the hours of darkness.
- The possibility that the bridge watch alarm may have been intentionally switched off, despite the operators standing order to the contrary.
- The poor on board management with regard the vessels Safety Management System.
- The failure by the master to better manage his work / rest time.
- The lack of an additional watchkeeping officer onboard.

## **SECTION 4 – RECOMMENDATIONS**

**The owners/operators of ‘*Bremer Victoria*’ are recommended to consider:**

1. Reviewing its safety management operating procedures in accordance with the ISM Code to ensure:
  - The adequate monitoring of rest hours
  - Correct navigational practices.
  - Sufficient manning to ensure the safety of the vessel.
2. Taking appropriate measures to ensure the Safety Management System on board is managed correctly.
3. The employment of an appropriate device to prevent the watch alarm being disabled while the main engine is operational.

**Government of Gibraltar  
Gibraltar Maritime Administration  
November 2006**