REQUEST:
From: XXXX
Sent: 30 September 2010 15:12
To: MAIB
Subject: MAIB Website enquiry

This message has been generated automatically from the Marine Accident Investigation Website.
XXXX has sent the following comment:

Postal address: XXXXX
Postcode:XXXXX
Country: XXXXX
Telephone: XXXXX
Facsimile:
Email Address: XXXXX

Website Address:
Company: XXXXX
Job Title: XXXXX
Industry Sector:

How did you reach our website?

Enquiry: Dear Sir/Madam, I am a student at the University of Plymouth studying BSc (Hons) Marine Studies (Merchant Shipping), whilst working towards my Officer of the Watch Unlimited qualification. As my part of my third year studies I have to submit a thesis, in which I will be looking into fatigue among Officers of the Watch. In addition to your Bridge Watchkeeping Safety Study, I was wondering if you had any other articles, key cases or relevant information regarding fatigue, in order for me to progress further with my research in this area. If you had any such information or useful links, it would be much appreciated if you could forward them onto me. If not, thank you still for taking the time to read this email. Thanks for your help and kind regards, XXXXX, XXXXX

Comment:

RESPONSE:

XXXXX

Our Ref: F0006946

I am writing to confirm that the Marine Accident Investigation Branch (MAIB) of the Department for Transport has now completed its search for information on fatigue and officers of the watch which you requested on 30 September 2010.

We have reviewed cases to Merchant Vessels of 500 gross tons of more from 1991 to 2009. Please find below a list of 14 published cases and, attached, details of a further 22 cases.

http://www.maib.gov.uk/publications/investigation_reports/2000/hoo_robin_arklow_marsh.cfm
http://www.maib.gov.uk/publications/investigation_reports/2000/dole_america.cfm
http://www.maib.gov.uk/publications/investigation_reports/2001/celtic_king_and_de_bounty.cfm
http://www.maib.gov.uk/publications/investigation_reports/2001/mv_coastal_bay.cfm
http://www.maib.gov.uk/publications/investigation_reports/2001/european_pioneer.cfm
http://www.maib.gov.uk/publications/investigation_reports/2002/hampoel_and_atlantic_mermaid.cfm
http://www.maib.gov.uk/publications/investigation_reports/2004/collision_between_hoo_finch_and_front_viewer.cfm
http://www.maib.gov.uk/publications/investigation_reports/2005/jackie_moon.cfm
http://www.maib.gov.uk/publications/investigation_reports/2005/orade.cfm
http://www.maib.gov.uk/publications/investigation_reports/2006/lykes_voyager_washington_senator.cfm
http://www.maib.gov.uk/publications/investigation_reports/2006/lerrix.cfm
http://www.maib.gov.uk/publications/investigation_reports/2006/kathrin.cfm
http://www.maib.gov.uk/publications/investigation_reports/2009/antari.cfm

There are a number of variables that may affect the type of data collected by MAIB over the last 20 years. For example, until October 2001 MAIB did not routinely collect information on causes of accidents unless someone was injured or MAIB carried out an investigation. Please do not present time series data without consulting with MAIB on the potential effect of these variables.

In keeping with the spirit and effect of the Freedom of Information Act, all information is assumed to be releasable to the public unless exempt. The Department may, therefore, be simultaneously releasing to the public the information you requested, together with any related information that will provide a key to its wider context.

If you are unhappy with the way the MAIB has handled your request or with the decisions made in relation to your request you may complain within two calendar months of the date of this mail by replying to me at the above address. Please see attached details of the Department for Transport's complaints procedure and your right to complain to the Information Commissioner.

If you have any queries about this letter, please contact me. Please remember to quote the reference number above in any future communications.

Yours sincerely

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Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

Case Number **0001/2008** **02/01/2008** **Grounding**
Regulation **Accident** Status **Closed**
Location **Coastal waters** **English** **5058.0 N** **120.0 E**
Dover
Natural Light **Darkness** Sea State **Moderate**
Visibility **Mod. 2 - 5 nm (3)** Wind force Range **4-6**
Dry cargo Dead **0** Injured **0** **Material Damage**
Container Flag **Germany**
90449.00 gt
When: **On passage** **0.01** Reg. L **334.00** LOA

Deck
Bridge procedures
Lookout
Ship/light/buoy/object incorrectly identified/reported
Human factor
People
Fatigue
Situational awareness or communication inadequate
Manning
Watchkeeper unfit for duty
Human factor
People
Fatigue
Situational awareness or communication inadequate
Passage Planning/Track Monitoring
Position monitoring not frequent enough
Human factor
System - Company and organisation
Complacency
Positions not checked by another method or person
Rule Contravention
Company, master's or other orders not followed or followed incorrectly
Human factor
System - Crew Factors
Procedures inadequate
Grounding
Bridge procedures
Location: **Navigation/communication control space**
Navigation/communication-equipment
Navigational Instruments(Radar, GPS, ECDIS etc)
Features/functions/alarms not used or used incorrectly
Human factor
People
Technical knowledge inadequate
Information misinterpreted
Human factor
People
Fatigue

A next generation 100,000 plus containership left a UK port bound for Suez. The passage had been planned, both on paper charts and using the Voyage Management System (with full ECDIS capabilities).

Prepared by MAIB for XXXXX– 19 October 2010

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

It was intended to pass south of the Varne Bank
At the time of the passage it was dark and overcast and the radar and VMS displays were set to "night display". Deep contour was set at 30 m which was inappropriate for the area and vessels draft, leading to the danger of the Varne being missed.
The chief officer came on watch around 0400 as the vessel was approaching Dover, there were no further fixes placed on the paper chart until after the grounding.
Whilst approaching the Varne Bank (at 21 knts) the chief officer had noted and acquired several targets on the ARPA (as shown on the VDR replay).
At 0442 he acquired a target on the port bow, crossing into the TSS. After resolving the vector the ARPA indicates this to be "dangerous" the chief officer altered from 225 to 237. This course would take him onto the Varne, directly between the Mid and South Varne buoys.
The vessel kept the course until she was affected by the shallow waters and then numerous alarms sounded on the bridge. These were interpreted by the chief officer as engine alarms and he called the master to the bridge as he "has problems with maintaining speed".
CNIS contacted the vessel after the grounding asking if all was OK and finally asking specifically if they were aground. The response from the chief officer was confused and it was not until the master answered that they acknowledged they were probably aground.
The chief officer was relying on the VMS to the extent that it became the primary means of navigation, no positions were plotted on the chart for almost an hour.
The VMS was poorly set up with all depths less than 30m shaded in deep blue thus the Varne did not stand out.
The VMS alarms were not set up to warn of shallows or X track.
Chief officer was fatigued after an oil spill in port.

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

Case Number **0003/2007** **02/01/2007** **Grounding**
Regulation **Accident** Status **Closed**
Location **Coastal waters** **Scottish** **5845.0 N** **303.0 W**
Natural Light **Darkness** Sea State **Moderate**
Visibility **Good (5 - 10)** Wind force Range **4-6**
Dry cargo Dead **0** Injured **0** **Material Damage**
General cargo Flag **Norway**
1980.00 gt
When: **On passage** **0.01** Reg. L **79.10** LOA

Deck
Grounding
Bridge procedures
Location: **Navigation/communication control space**
General management/procedures
Navigation/Communications equipment
Safety
General management/procedures
Management failure
Safety management system failure
Manning
Watchkeepers not sufficiently rested
Human factor
People
Complacency
Fatigue
System - Company and organisation
Company standing orders inadequate, insufficient, conflicting
Pressures - organisational
Safety culture
System - Crew Factors
Inadequate management of physical resources
Misapplication of regulations, policies, procedures or practices
Working environment
Temperature

Same Old Story
Narrative
A 79-metre general cargo vessel was on passage through UK waters in the early hours of a winter's morning. Conditions were good, with winds of around force 4, generally from the west, and good visibility.
A cargo of 1900 tonnes of ferro silicon was embarked, a product used in the steelmaking process, which can emit flammable and toxic gases when exposed to moisture. Also on board were the 7 crew; although the vessel's Safe Manning Certificate required a crew of 6, she had an additional AB/rigger on board to assist with the 30-year old vessel's maintenance. Only the master and chief officer took navigational watches, working a 6 on, 6 off shift pattern, with the chief officer also responsible for overseeing cargo operations in port.
The vessel's passage plan required the transit of a channel, and at 0235 the chief officer, who was on watch alone on the bridge, made the course alteration for the passage through this stretch of water. The passage speed was 8 knots.
The vessel was on autopilot, and the chief officer made some minor adjustments to try to keep her on

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

track. Both doors were closed on the bridge, making it extremely stuffy, and at around 0300 the chief officer fell asleep in the chair. The vessel immediately began to drift north of the track, set by the tidal stream, although still on a constant heading. No watch alarm was fitted on the bridge and the chief officer didn't wake up until 0432 when the vessel heavily impacted the rocky western side of a small uninhabited island at a speed over the ground of 9.8 knots, assisted now by the start of the flood tide.

Initial attempts to free the vessel by going astern were unsuccessful, and the master who, like the rest of the crew had been woken by the impact, contacted the coastguard, using VHF (but not DSC) to inform them of the incident.

The Lessons

1. Unfortunately this is still an all too common story for the MAIB, with cumulative fatigue and lone watchkeeping contributing to a serious accident, the consequences of which could have been even worse given the hazardous cargo on board. The master commented that he had chosen not to use the ABs for watchkeeping, and preferred to reserve them for maintenance day work, which he considered more important given the age of the vessel. The STCW Code requires that, during the hours of darkness, there is an additional person on the bridge with the sole purpose of keeping a lookout, and it is probable that had this been adhered to, this accident would have been avoided.

2. It is clear, too, that owners must take some responsibility for the effective utilisation of crew, to ensure safe watchkeeping levels. A Port State Control inspection of this vessel several months before the grounding had identified from the logbook that the ABs were not being used as night lookouts. The owners subsequently issued a Non- Conformity notice to prohibit this practice, yet it had been allowed to continue on the vessel, unchecked. Further, the vessel's ISM Manual did not stipulate the requirement for a lookout, and no watch alarm had been fitted. Perhaps a stricter audit regime, and a more emphatic safety culture, would have ensured that AB lookouts were being used to prevent a scenario exactly such as this.

3. The chief officer had been working a 6 on, 6 off routine for around 31/2 months. The cumulative effects of these watches, exacerbated by the cargo work during the vessel's regular port visits, were a recipe for fatigue. If ever you do feel the first signs of sleep approaching, think about what simple measures you could take to try to minimise the chance of an unplanned nap catching you out. None the less, the most effective solution to fighting fatigue is sufficient and appropriately organised manning. In hindsight, perhaps an additional mate to reduce the watchkeeping burden would have been a more sound investment than another AB on this vessel.

4. Finally, although not significant this time, it must be emphasised that it is always better to use DSC to initially report an incident. A vessel's position and the time are automatically included in distress and urgency alerts if a DSC radio set is interfaced with the GPS, and even if it isn't, the position can still be manually input. A digital alert is generally more likely to reach a maritime rescue centre than a VHF voice transmission, and it also frees up Channel 16 for use during the emergency.

A 1,980 gt general cargo vessel was on passage in the early hours, in good conditions, with F4 winds & good visibility. 1,900 tonnes of ferro silicon was being carried, a product which can emit flammable and toxic gases when exposed to moisture. The chief officer was on watch alone on the bridge as the vessel transited a channel on autopilot at 8 knots. Both doors were closed on the bridge, making it extremely stuffy, and at around 0300 the chief officer fell asleep in the chair. The vessel immediately began to drift north of the track, set by the tidal stream, although still on a constant heading. No watch alarm was fitted & the chief officer didn't wake up until 0432 when the vessel heavily impacted the rocky western side of a small island at 9.8 knots, assisted by the flood tide. Initial attempts to free the vessel by going astern were unsuccessful, and the master contacted the coastguard at 0447 on VHF. Two ABs attempted to go forward to take soundings, but were unable to do so due to the heavy swell breaking over the foredeck. The local lifeboat and harbour tugs deployed at 0525, along with an emergency towing vessel at 0553. By 0555 the lifeboat and tugs were standing of the vessel, and at 0630 the tide started to run northerly & swung the vessel's stern round. She refloated at 0650 & soundings were taken to confirm water ingress into the FP and all DB tanks forward of the ER, one of which contained 10te of Marine Gas Oil. Although she still had full power and use of rudder/propeller, tug lines were put onto to her at 0706 and a pilot embarked at 0738, and the vessel towed into port. Cumulative fatigue was identified as a likely cause, as the chief officer had been working 6 on, 6 off

for 3½ months. No lookouts were being used, despite this being raised as an issue at a recent PSC, as the master preferred to preserve the ABs for deck work and maintenance, given the vessel's age.

Two harbour tugs and the local lifeboat were immediately deployed to the scene. However, they were unable to provide immediate assistance because of the swell and shallow waters. The vessel refloated at around 0650 on the rising tide and the two tugs were then able to tow her to a nearby port where she was boomed off alongside.

Diver surveys confirmed extensive bottom damage to the vessel, with penetration to all double bottom tanks forward of the engine room, including a central fuel tank containing 10 tonnes of marine gas oil. Fortunately there was only limited pollution and the holds remained intact throughout. No injuries were sustained.

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

Case Number **0141/1999** **04/02/1999** **Grounding**
Regulation **Accident** Status **Closed**
Location **Port/harbour area** **UK** **5902.0 N** **252.0 W**
Natural Light **Darkness** Sea State **Rough**
Visibility **Mod. 2 - 5 nm (3)** Wind force Range **7-9**
Dry cargo Dead **0** Injured **0** **Material Damage**
General cargo Flag **Panama**
Multi-deck **1660.00** gt
0.01 Reg. L **71.96** LOA

Deck
Grounding
Import Default
Import Default
Import Default
Import Default
Human factor
People
Fatigue and vigilance
Perception of risk
System - Equipment
Equipment misuse
Ship
Structural integrity
Hull structure, bottom mid-length - between the bow and stern structure
Import Default
Technical factor
Environment
Heavy Weather

VESSEL DRAGGED HER ANCHOR AND GROUNDED. THE MASTER WHO WAS ALONE ON WATCH, FAILED TO DETECT THE VESSEL DRIFTING ASTERN IN SUFFICIENT TIME TO PREVENT HER GROUNDING. CONTRIBUTORY CAUSES WERE THE PREVAILING WEATHER, THE CLOSE PROXIMITY OF A LEESHORE, UNDUE RELIANCE ON THE OFFICER OF THE WATCH TO DETECT ANY DRIFT IMMEDIATELY, INADEQUATE LENGTH OF ANCHOR CABLE USED 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 TUG'S ARRIVAL. HAD A COASTGUARD ETV BEEN AVAILABLE, THE COASTGUARD WOULD HAVE BEEN FREE TO NEGOTIATE A TOWING CONTRACT RATHER THAN WAIT FOR THE MASTER TO ACCEPT LLOYDS OPEN FORM. NO POWERS OF INTERVENTION WERE INVOKED.

Data in MAIB historic format:
Accident Factor Information:
Record 1
Factor: Environmental
Human Factor: Not applicable
How Why: Beaufort Scale
Where: Hull Structure
What: Bottom Shell
Record 2
Factor: Human Factor
Human Factor: Equipment

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

How Why: Equipment Misuse
Comment: INADEQUATE ANCHOR CABLE LENGTH USED
Record 3
Factor: Human Factor
Human Factor: Individual
How Why: Fatigue and Vigilance
Comment: POSSIBLE FATIGUE OF MASTER / COMPLACENCY.
Record 4
Factor: Human Factor
Human Factor: Individual
How Why: Perception of Risk
Comment: INCREASED CONFIDENCE THAT ANCHOR WOULD NOT DRAG.

160/1999 Date: 15/07/1999

Recommendation To:	Maritime and Coastguard Agency	Action:	Internal Action
Recommendation Focus:	Operational Practice	Issue:	Other

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.

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

Case Number **0186/1996** **31/01/1996** **Grounding**
Regulation **Accident** Status **Closed**
Location **Coastal waters** **UK** **5647.0 N** **737.0 W**
Natural Light **Darkness** Sea State **Moderate**
Visibility **Good (5 - 10)** Wind force Range **4-6**
Dry cargo Dead **0** Injured **0** **Material Damage**
General cargo Flag **Norway**
Single deck **2630.00** gt
0.01 Reg. L **93.55** LOA

Deck
Grounding
Import Default
Import Default
Import Default
Import Default
Human factor
People
Fatigue and vigilance
Health: drugs/alcohol
Perception of risk
Violation of procedures
System - Company and organisation
Company standing orders inadequate, insufficient, conflicting
System - Crew Factors
Manning (rotation /watches)
Unsafe working practices
System - Equipment
Equipment misuse
System - External bodies liaison
Incorrect installation/defective equipment
Non compliance

VESSEL RAN AGROUND AFTER MASTER, WHO WAS SOLE WATCHKEEPER, LEFT THE BRIDGE AND FELL ASLEEP IN HIS CABIN. THE VESSEL ON AUTOPILOT OVERSHOT ALTER-COURSE POSITION AND RAN ON FOR OVER TWO HOURS. VESSEL WAS DAMAGED ABOVE WATERLINE BUT NOT HOLED. THERE WERE NO INJURIES. THE BRIDGE WATCH ALARM HAD NOT BEEN SWITCHED ON.
Data in MAIB historic format:
Accident Factor Information:
Record 1
Factor: Human Factor
Human Factor: External Bodies Liaison
How Why: Incorrect Installation/Defective Equipment
Where: Control Station
Comment: INSTALLED WATCH ALARM SOUNDED IN MASTER'S CABIN - MASTER IS ONE OF TWO
Comment2: WATCHKEEPERS.
Record 2
Factor: Human Factor
Human Factor: Company and Organisation
How Why: Company Standing Orders Inadequate, Insufficient, Conflicting

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

Where: Control Station
Comment: NO COMPANY ORDERS ON ONE MAN BRIDGE OPERATION.
Record 3
Factor: Human Factor
Human Factor: Crew Factors
How Why: Manning (Rotation/Watches)
Where: Control Station
Comment: ONE MAN BRIDGE OPERATION AT NIGHT.
Record 4
Factor: Human Factor
Human Factor: Crew Factors
How Why: Unsafe Working Practices
Where: Control Station
Comment: BRIDGE WAS LEFT UNMANNED WHEN MASTER WENT BELOW.
Record 5
Factor: Human Factor
Human Factor: Equipment
How Why: Equipment Misuse
Where: Control Station
Comment: BRIDGE WATCH ALARM WAS NOT BEING USED.
Record 6
Factor: Human Factor
Human Factor: Individual
How Why: Violation of Procedures
Where: Control Station
Comment: MASTER CHOSE TO OPERATE ALONE ON BRIDGE WITHOUT AN ALARM.
Record 7
Factor: Human Factor
Human Factor: Individual
How Why: Health: Drugs/Alcohol
Where: Control Station
Comment: ALCOHOL SUSPECTED TO BE A FACTOR
Record 8
Factor: Human Factor
Human Factor: Individual
How Why: Fatigue and Vigilance
Where: Control Station
Comment: LACK OF VIGILENCE SHOWN BY MASTER
Record 9
Factor: Human Factor
Human Factor: Individual
How Why: Perception of Risk
Where: Control Station
What:
Comment: MASTER TOOK THE RISK OF GOING BELOW WHEN SUPPOSED TO BE ON WATCH.
Record 10
Factor: Human Factor
Human Factor: External Bodies Liaison
How Why: Non-compliance
Where: Control Station
Comment: NON-COMPLIANCE WITH STCE - ONLY ONE WATCHKEEPER

192/1996 Date: 18/12/1996

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

Recommendation To:	Maritime and Coastguard Agency	Action:	Survey or Inspection
Recommendation Focus:	Safety of Navigation	Issue:	Watchkeeping and Navigational Practice

In the short term, pending an IMO agreement allowing One Man Bridge Operation at Night (OMBON), endeavour to effectively eliminate its practice in UK territorial waters, through port state control procedures.

193/1996 Date: 18/12/1996

Recommendation To:	International Maritime Organization	Action:	
Recommendation Focus:	Safety of Navigation	Issue:	Watchkeeping and Navigational Practice

In the long term, press for IMO to reconsider its agreement to discontinue the trials on One Man Bridge Operation at Night (OMBON) at the end of 1997. If OMBON becomes an internationally accepted practice, consider ways through national legislation and port state control procedures to ensure that only those vessels which are properly equipped with adequate watch alarms operate OMBON in UK territorial waters.

194/1996 Date: 18/12/1996

Recommendation To:	International Maritime Organization	Action:	
Recommendation Focus:	Safety of Navigation	Issue:	Bridge Navigation Equipment

Further to the recommendation made in September 1996 for watch alarms on UK registered vessels (Ref: STERNDON MAIB 1/4/144 copy attached) consider promoting the same as an international requirement, through IMO.

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

Case Number **0275/2008** **08/03/2008** **Grounding**
Regulation **Accident** Status **Closed**
Location **Coastal waters** **Scottish** **5731.0 N** **559.0 W**
Natural Light **Light** Sea State **Moderate**
Visibility **Poor <2 nm (1,2)** Wind force Range **4-6**
Other commercial Dead **0** Injured **0** **Material Damage**
Other Flag **Norway**
1276.00 gt
When: **On passage** **0.01** Reg. L **57.07** LOA

Deck
Bridge procedures
Lookout
Location: **Navigation/communication control space**
Ship/Light/buoy/object not detected/ reported
Human factor
People
Fatigue
Manning
Location: **Navigation/communication control space**
No lookout posted
Human factor
System - Crew Factors
Inadequate management of physical resources
Misapplication of regulations, policies, procedures or practices
Watchkeeper asleep
Human factor
People
Fatigue
Grounding
Bridge procedures
Location: **Navigation/communication control space**

Investigation carried out by another State. The investigation findings were that the vessel ran aground because the navigator fell asleep while alone on the bridge. There was no lookout despite there being a requirement to have one posted. The navigator may have been fatigued due to heavy workload although his work and rest hours were found to be in accordance with international regulations.

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

Case Number **0351/2003** **19/03/2003** **Hazardous Incident**
Regulation **Hazardous Incident** Status **Closed**
Location **Coastal waters** **English** **5153.0 N** **132.0 E**
Natural Light **Darkness** Sea State
Visibility **Poor <2 nm (1,2)** Wind force Range
Dry cargo Dead **0** Injured **0**
General cargo Flag **U.K.**
2237.00 gt
When: **On passage** **0.01** Reg. L **99.73** LOA
Deck
Bridge procedures
Passage Planning/Track Monitoring
Location: **Navigation/communication control space**
Position monitoring not frequent enough
Human factor
People
Fatigue and vigilance
Hazardous Incident

OOW failed to take account of tide and failed to effectively monitor track during first half-hour of his watch, resulting in the vessel passing close to a light float. Company investigation identified that he had not followed company instructions but it is unclear as to why he did not do so. Although his hours of rest complied with statutory requirements, it is possible that his performance during the period in question was adversely affected by fatigue. Company referred to MGN 211 (M) and, in particular, to the IMO guidance referred to therein.

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

Case Number **0382/2009** **28/03/2009** **Grounding**
Regulation **Accident** Status **Closed**
Location **Port/harbour area** **Scottish** **5625.0 N** **528.0 W**
Oban
Natural Light **Light** Sea State **Calm <2 ft**
Visibility **Good (5 - 10)** Wind force Range **0-3**
Passenger Dead **0** Injured **0** **Material Damage**
Ro-ro, vehicle/passenger ferry Flag **U.K.**
3296.00 gt
When: **Entering or leaving port** **0.01** Reg. L **84.92** LOA
Deck
Bridge procedures
Passage Planning/Track Monitoring
Inadequate passage planning
Human factor
System - Equipment
Plan not followed
Human factor
People
Fatigue
Situational awareness or communication inadequate
System - Company and organisation
Company standing orders inadequate, insufficient, conflicting
System - Crew Factors
Lack of communication or co-ordination
Working environment
Poor housekeeping
Visual environment
Position monitoring not frequent enough
Poor Decision Making
Incorrect or insufficient action taken
Human factor
People
Fatigue
Situational awareness or communication inadequate
Speed - too fast for conditions
Human factor
People
System - Crew Factors
Misapplication of regulations, policies, procedures or practices
Grounding
Bridge procedures
Location: **Navigation/communication control space**

An inter island ro-ro passenger ferry sailed for passage following a 30 minute turnaround. The ferry was not operating on her regular route and the crew's ability to sleep during the previous 2 days had been adversely affected by poor sea conditions.

On the bridge were the master, who was on the port wing and had the con, the OOW and a quartermaster. The chief officer and a cadet were also on the bridge but had no specific navigation duties. The master manoeuvred the vessel clear of the berth and then headed on a north

westerly course at a speed of 4 knots towards a reef five cables away and marked by north and south cardinal marks. He then moved inside and to the front of the bridge from where he intended to navigate the vessel.

However, the master found it difficult to see directly ahead because the centre bridge window was dirty and the vessel was heading directly towards the low, bright Sun. As the window washer was not working, the master instructed the cadet to clean the window; he also increased speed to 8 knots. Unfortunately, the cadet was not familiar with the whereabouts of the cleaning equipment or access to the outside of the bridge windows and his questions regarding these matters briefly required the master's attention.

Although the visibility through the bridge window was impaired, the master saw the cardinal marks and applied port helm to put the southern mark on his starboard bow in accordance with the passage plan drawn on the paper chart. Inexplicably, the turn was stopped with the buoy still on the port bow. Although the bridge team had not been briefed of the intended plan before departure and the initial part of the passage plan had not been entered into the vessel's ECS, the OOW realised that the ferry was heading into danger and alerted the master. The master immediately applied full astern pitch and full port thrust but this did not prevent the vessel from momentarily grounding on the reef just 6 minutes after slipping. Next page.....

The ferry suffered substantial hull damage but was able to return alongside without assistance.

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

Case Number **0693/2005** **21/05/2005** **Grounding**
Regulation **Accident** Status **Closed**
Location **Coastal waters** **Non UK** **5637.0 N** **1052.0 E**
Natural Light **Light** Sea State
Visibility **Poor <2 nm (1,2)** Wind force Range
Dry cargo Dead **0** Injured **0** **Material Damage**
General cargo Flag **U.K.**
1992.00 gt
When: **Unknown** **0.01** Reg. L **79.13** LOA

Deck
Bridge procedures
Passage Planning/Track Monitoring
Inadequate passage planning
Human factor
People
Competence
Fatigue and vigilance
System - Crew Factors
Procedures inadequate

Grounding
Bridge procedures
Location: **Navigation/communication control space**
General management/procedures

Safety
General management/procedures
Management failure
Safety management system failure
Human factor
People
Fatigue and vigilance
Violation of procedures
System - Company and organisation
Company standing orders inadequate, insufficient, conflicting

A laden UK flag general cargo vessel grounded on a charted shoal and sustained serious hull damage while in Danish territorial waters. The vessel was on voyage from Rotterdam to Aarhus, and the master was standing the navigation watch.

At the time of the accident the vessel was in thick fog and had been for the previous 24 hours. The fog signal had been sounding for this period, which had disrupted sleep patterns for all those onboard. This increased the fatigue of the master who was already affected by the arduous 6 on 6 off watchkeeping routine over a 6 week period.

A rudimentary passage plan had been completed on the GPS, however many of the waypoints were positions of buoys. The navigators were in the habit of staying to one side or other of the course line to avoid hitting the buoys at the alter course positions. These GPS planned course lines were able to be displayed on the vessel's radar and some, but not all, of the course lines had been drawn on paper charts.

The master correctly plotted the vessel's position at 0850, 35 minutes before the grounding, as 2 miles to starboard of the course line. This did not alarm him. The master then changed charts and correctly transferred the position onto the new one. He noticed that the mate had not drawn the course line on the chart but he did not draw it on himself. The course had been planned to pass 3 miles off a shoal which was not highlighted on the chart.

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

Due to a combination of current and wind the vessel was set further to starboard and towards the shoal. This danger was not recognised by the master because he plotted an incorrect position at 0920, about 5 minutes before the grounding, which, as luck would have it, showed the vessel to be roughly where he expected her to be.
The vessel grounded heavily but only momentarily. She immediately began listing to starboard and trimming by the head. Subsequent soundings found four ballast tanks had been opened to the sea. The crew ballasted the vessel upright but she still was trimming heavily by the head and was now below her marks. About 3 hours after the grounding, the master contacted the owners and managers to inform them of the situation. Unfortunately he did not inform the coastal state, which found out a few hours later.
The vessel steamed slowly to her next port where the master was duly fined by the coastal state for not reporting the accident to them.
The Chief Inspector of Marine Accidents has written to the owner of the vessel concerning the following:
1. The importance of completing a proper passage plan for each and every voyage, including laying the track to follow / course line on the chart.
2. The master's obligations to immediately report an accident such as a grounding to the coastal state

A laden general cargo vessel grounded on a charted shoal through poor navigational practices which might have been affected by the fatigue of the master who had been working a 6-on 6off watchkeeping routine for over five months. Additionally the crew's sleep had been affected by the sounding of the fog signal as the vessel had been in fog for 24 hours. After the accident the master failed to report it to the coastal state.

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

Case Number **1116/2006** **21/07/2006** **Grounding**
Regulation **Accident** Status **Closed**
Location **Coastal waters** **Scottish** **5501.0 N** **508.0 W**
Natural Light **Darkness** Sea State **Calm <2 ft**
Visibility **Good (5 - 10)** Wind force Range **0-3**
Dry cargo Dead **0** Injured **0** **Material Damage**
General cargo Flag **Antigua & Barbuda**
Multi-deck **2567.00** gt
When: **On passage** **85.98** Reg. L **88.42** LOA

Deck
Bridge procedures
Passage Planning/Track Monitoring
Location: **Navigation/communication control space**
No positions fixed
Human factor
People
Alcohol use
Competence
Fatigue
Understimulation
Plan not followed
Grounding
Bridge procedures
Location: **Navigation/communication control space**
General management/procedures
Location: **Other**
Safety
General management/procedures
Management failure
Location: **Other**
Safety management system failure
Human factor
System - Company and organisation
Safety culture
General shipboard activities
General - Unsafe practices
Location: **Other**
Involving negligence/carelessness
Human factor
People
Fatigue
Non-compliance with policy, legislation, standards (national/international)
Human factor
People
Competence

(1/3)
Narrative
A 90m cargo vessel was operating a regular route along the UK coast, transporting containers. The deck officers on board comprised a master and mate working a 6 hours on, 6 hours off watch

routine.
The vessel arrived in port and moored alongside one evening, after two very tiring days for the master. He had only managed 4-5 hours sleep during the previous 2 days as he had been on the bridge for extended periods while in pilotage waters. However, he was able to get 6 hours sleep overnight in port. Next morning, he carried out ship's business during his morning duty period. The mate supervised the loading and unloading of the ship's cargo throughout the day.
After lunch, the master went ashore to have a drink with a fellow crew member and also to do some shopping. He then returned to the vessel late afternoon, and a short time later the vessel sailed. The master held a PEC, so no pilot was required to manoeuvre the ship off the berth or clear the harbour. Once clear of the port, but still in pilotage waters, the master left the mate on watch and went below to have a shower and eat his dinner.
The master returned to the bridge 20 minutes later and the mate went below to his cabin. The lookout reported to the bridge at 2000. The sea was calm, there was only a light breeze and visibility was very good. Other vessel traffic was light. At 2130 the master sent the lookout to conduct safety rounds, which took no longer than 20 minutes.
Sometime later, the ship passed an island, at which a course alteration of 12° to starboard was required according to the passage plan. The master altered course by only 3° as this appeared adequate to ensure the lighthouse on the next headland was on the port bow.
On passing the island, the radar range was reduced from the 12nm to 6nm. After the turn, the vessel slowly diverged from her planned track and, eventually, the GPS alarm sounded as she strayed outside of the 2 cable cross track error (XTE) margin. This alarm was acknowledged, but the course was not corrected and the passage continued. No fixes were marked on the chart, and even the normal recording of GPS positions in the log was not carried out.
At about 2325, the master again sent the lookout on safety rounds and told him not to return to the bridge but to shake his relief after he had finished. Very soon after the lookout left, the master fell asleep, even though there was a functioning watch alarm on the bridge which needed resetting every 12 minutes. The act of cancelling the alarm was insufficient to rouse the master into effectively monitoring the ship's position.
The vessel vibrated as it ran aground, and the master awoke suddenly. He immediately set the pitch on the CPP to zero. The master could see the lighthouse, now on his starboard bow, very close by. His first reaction was to refloat the ship, so he put some astern pitch on the CPP. The general alarm was not sounded.
As soon as they felt the vibration, the chief engineer and oiler went to the engine room, where they started the auxiliary generators and decoupled the shaft generator. They then checked for any signs of damage. The mate went to the bridge shortly after the grounding, not really knowing what had happened. There, he plotted the vessel's position on the chart before checking the hold and hull for damage.
When the mate returned to the bridge a short time later, the vessel was afloat. There was some confusion and heated discussion on the bridge and, eventually, the mate took the con and set a course clear of the coast and back towards the vessel's intended track. No damage was found and the engine appeared to be running smoothly. As a result, the master decided not to report the incident to the authorities or the ship's management company, and the ship continued on its passage. The master left the bridge, leaving the mate to complete his midnight to 0600 watch. Throughout the night, checks were made for flooding or signs of damage.

The mate, having considered the situation further, decided at 0200 to report the incident to the DPA (Designated Person Ashore) by sending an anonymous text message on his personal mobile phone. However, the DPA did not find the text message until 0800. When the master returned to the bridge at 0600, the chief engineer reported having discovered flooding in three tanks, and at that point the decision was made to report the incident. Eventually, at 0900, the master made contact with the ship managers, although several unsuccessful attempts had been made from shore to contact the ship.

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

The company emergency response team convened, and plans were made to divert the ship to allow the damage to be assessed. At 1125 the ship was redirected to port and HM coastguard was informed. The ship arrived in port safely for cargo discharge and dry docking, 24 hours after the grounding.
There was significant damage to the vessel, with three long grooves in the double bottom, several small splits in the shell plating and damage to three of the propeller blade tips.
The Lessons
1. Fatigue will lead to errors, and it sometimes results in accidents like this. It is important to recognise when you are becoming tired, and ensure you are adequately rested. For example, after extensive periods of pilotage, make rest your first priority during your off-duty periods. If necessary, delay sailing from port.
No vessel's schedule is worth the risk of having a grounding or collision because the officer of the watch (OOW) is tired.
2. The management company's policy permitted alcohol to be consumed, but not during the 4 hours before going on watch and not more than a prescribed limit. Tiredness and alcohol have similar effects: they dull the senses and slow the reactions - essential senses for navigating a ship. Combining them multiplies these effects.
The old road safety slogan applies just as well at sea - Don't drink and drive.

3. The standards of navigation on this ship had sunk to the lowest level possible, resulting in the watchkeeper simply steering from one lighthouse to the next. There was no attempt to follow or monitor progress against the passage plan, or the route stored in the GPS. The radar was checked occasionally but, importantly, the coast ahead was not noticed by the master.
It is vital to know where your ship is and whether you are standing into danger. Do not slip into bad navigational habits; they will catch up with you!
4. Following the grounding, chaos reigned: the master lost control, the crew was not informed of the situation, and the vessel was manoeuvred clear of the rocks before a full damage assessment was completed. It was fortunate in this case that the damage was contained within the tanks.
Emergency procedures and checklists exist to help ensure all necessary actions after an accident are carried out - familiarise yourself with them, and use them.
5. The decision to cover up this accident demonstrated little consideration for the safety of the ship, her crew or the environment, and it was extremely fortunate that the outcome was not much worse. Accidents happen, and you will be judged less by what happened, than how you dealt with it. Report accidents to local authorities and management as soon as possible because time may be vital in preventing loss of life or averting pollution. 6. All too often, the MAIB finds that the lookout has been poorly employed and has added little to the safety of the ship. If used effectively, the lookout can not only alert the OOW to the immediate surroundings, but also his presence on the bridge will help ensure that the OOW is alert.
International regulations are not written for fun - a lookout is an essential part of the bridge team.
7. Do not become complacent about operating in pilotage waters and, if necessary, take your meal on the bridge.
The PEC holder must be on watch during pilotage.

As the lookout returned from the foredeck he felt the ship vibrate and he rushed back to the bridge. The master was still in his chair and had started to manoeuvre the ship astern. The master stated he had fallen asleep. The mate arrived on the bridge shortly after the grounding and he plotted the vessel's position. He then conducted his own inspection for any damage. The ship was afloat again by 2352 and there was no damage immediately evident. The mate took over and took the ship away from the coast and back on to the intended track. After some discussions between the master and mate is decided not to report the incident. However, at 0200, the mate sent an anonymous text message to the DPA reporting the grounding.
Next morning at 0600, as the master came back on watch, it became clear the hull had been punctured in several places, but luckily only breaching tanks or void spaces. The decision was made to report

the accident to the ship's management, who were also trying to contact the vessel as a result of the text message. The ship was re-directed to a dry dock for inspection. It was found that there was significant damage to the double bottom but with only a few small punctures of the hull, which accounted for the slow rate of flooding.

The company DPA has recommended closer scrutiny of working hours, development of an alcohol testing procedure to test the master (as the master had a test kit onboard) and a reminder to all crew that they can contact the DPA to report an accident or major breach of the SMS. An immediate ISM audit also highlighted the poor navigational practices onboard that needed to be addressed.

A small cargo vessel was operating on a short sea UK coastal trade, transporting containers. The master and mate were the only two deck officers standing a 6 on 6 off watch routine. The vessel docked during the evening in port after a couple of tiring days for the master, as he had been on the bridge during extensive pilotage and had been dealing with ship's business all day whilst in the previous port. However, the master managed a full night's sleep overnight and cargo work commenced next morning. After lunch the master went ashore for some items as it was his last opportunity before he flew home a couple of days later. He had two beers in a local bar before shopping and returned to the ship ready to sail at 1800. The master was on watch from 1800-2400 and after manoeuvring the ship off the quay left the mate on watch to allow him to take a shower and eat his dinner. He returned to the bridge and at 1900 the mate left the bridge. The lookout arrived for his 4 hour watch at 2000 and at 2130 the master sent him on safety rounds, which took 15-20 minutes.

During the passage the master did not follow the passage plan rigorously and was predominately navigating by eye from one navigation light to the next as visibility was excellent and the weather was calm. No attempts were made to fix the vessel's position and the GPS alarms for nearing waypoints and being off track were simply acknowledged when they sounded.

At around 2230 the ship passed a light on the starboard side and the passage plan required a 12 degree course alteration to starboard. A 3 degree course alteration was made by the master as this was deemed sufficient to put the next light, on a headland some 15 nm away on the port bow. The radar was set to the 6nm range scale at this time. There was a watch alarm fitted and this required cancellation every 12 mins. At 2325 the master sent the lookout on safety rounds again and told him to not bother returning to the bridge but to shake his relief. (PTO

(3/3)

212/2006 Date: 30/08/2006

Recommendation To: Shipping Company/Owner/Master Action: Internal Action

Recommendation Focus: Operational Practice Issue: Management

Improve your auditing regime to ensure that the navigation methods and procedures used by your vessels on passage are in accordance with the requirements of SOLAS and company SMS.

213/2006 Date: 30/08/2006

Recommendation To: Shipping Company/Owner/Master Action: Internal Action

Recommendation Focus: Human Factors Issue: Company & Organisation

Review your personnel monitoring and appraisal procedures to ensure that all personnel, and specifically masters, are competent to carry out their assigned duties.

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

Case Number **1240/2003** **29/08/2003** **Hazardous Incident**
Regulation **Hazardous Incident** Status **Closed**
Location **High seas** **Non UK** **5425.0 N** **1210.0 E**
Natural Light **Darkness** Sea State **Calm <2 ft**
Visibility **Good (5 - 10)** Wind force Range
Dry cargo Dead **0** Injured **0**
Ro-ro/lo-lo, freight only (< 12 drivers) Flag **U.K.**
23235.00 gt
When: **On passage** **0.01** Reg. L **193.00** LOA

Deck
Bridge procedures
Passage Planning/Track Monitoring
Location: **Navigation/communication control space**
Position monitoring not frequent enough
Human factor
People
Fatigue and vigilance
Hazardous Incident

OOW fell asleep resulting in vessel deviating from planned track. Lookout attempted but failed to wake OOW, and made no attempt to call for help. OOW had not taken advantage to sleep before watch. Company has instilled on its masters the need for staff to take responsibility to be fit for duty, for poor performance to be fed back to the office, and for people not to be afraid to question superior officer if they are making mistakes.

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

Case Number **1254/2009** **08/09/2009** **Hazardous Incident**
Regulation **Hazardous Incident** Status **Closed**
Location **Coastal waters** **Welsh** **5143.0 N** **535.0 W**
Natural Light **Darkness** Sea State **Unknown**
Visibility **Mod. 2 - 5 nm (3)** Wind force Range **4-6**
Tanker/combination carrier Dead **0** Injured **0** **No Damage**
Chemical tanker Flag **Netherlands**
None **4107.00** gt
When: **On passage** **0.01** Reg. L **114.66** LOA

Deck
Bridge procedures
Lookout
Late detection of ship/light/buoy/object
Human factor
People
Fatigue
Manning
Sole watchkeeper
Human factor
People
Self discipline (lack of)
System - Crew Factors
Procedures inadequate
Watchkeeper asleep
Human factor
System - Crew Factors
Procedures inadequate
Hazardous Incident
Bridge procedures
Location: **Navigation/communication control space**

A coastguard station in Wales observed that a 4000gt chemical tanker was heading towards shallow water which the navigational chart indicated was an area to be avoided. After consultation with a local port, the coastguard operator called the vessel via VHF radio to ensure the OOW was aware of the potential danger ahead. The OOW replied that he was aware of the ship's position and maintained the vessel's course through the danger. However, shortly after, the vessel reversed course and passed through the danger for a second time before going to anchor. The OOW had fallen asleep and had missed a planned course alteration. He had been asleep for about one hour before being woken by the call from the coastguard. The OOW had been accompanied on the bridge by an AB but had sent the AB to work on the deck. On completion of this work the AB had proceeded to the crew room rather than returning to the bridge. Although the OOW's periods of rest for the previous week were in accordance with IMO/ILO requirements, his sleep prior to taking over the watch had been disturbed by the vessel's motion after sailing (beam sea).

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

Case Number **1308/1994** **08/08/1994** **Grounding**
Regulation **Accident** Status **Closed**
Location **Coastal waters** **UK** **5118.0 N** **132.0 E**
Natural Light **Darkness** Sea State **Moderate**
Visibility **Mod. 2 - 5 nm (3)** Wind force Range **4-6**
Dry cargo Dead **0** Injured **0** **No Damage**
General cargo Flag **U.K.**
Single deck **794.00** gt
0.01 Reg. L **58.30** LOA

Deck
Grounding
Import Default
Import Default
Import Default
Import Default
Human factor
People
Fatigue and vigilance
Poor decision making/information use
System - Crew Factors
Manning (rotation /watches)
Procedures inadequate
System - External bodies liaison
Non compliance

THE VESSEL GROUNDED ON A SANDBANK DURING HOURS OF DARKNESS. THE ACCIDENT HAPPENED BECAUSE OF BAD NAVIGATIONAL PRACTICES ON BOARD. NO DAMAGE OR INJURY ENSUED.
Data in MAIB historic format:
Accident Factor Information:
Record 1
Where: Control Space
Record 2
Record 3
Factor: Human Factor
Human Factor: External Bodies Liaison
How Why: Non-compliance
Where: Control Space
Comment: Failed to have a second man on watch at night although it was in the
Comment2: standing orders of the company.
Record 4
Factor: Human Factor
Human Factor: Individual
How Why: Poor Decision Making/Information use
Where: Control Space
Record 5
Factor: Human Factor
Human Factor: Crew Factors
How Why: Procedures Inadequate
Where: Control Space
Record 6
Factor: Human Factor

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

Human Factor: Individual
How Why: Fatigue and Vigilance
Where: Control Space
Record 7
Factor: Human Factor
Human Factor: Crew Factors
How Why: Manning (Rotation/Watches)
Where: Control Space

225/1994 Date: 16/09/1994

Recommendation To:	Maritime and Coastguard Agency	Action: Prosecution or Disciplinary Action
Recommendation Focus:	Operational Practice	Issue:

To write to X, the Master of XX, pointing to;
the necessity of the proper provision of lookouts at night;
the requirement to ensure that prudent passage planning is carried out;
the necessity to give guidance in the form of written night orders to his watchkeeping officers.

226/1994 Date: 16/09/1994

Recommendation To:	Maritime and Coastguard Agency	Action: Prosecution or Disciplinary Action
Recommendation Focus:	Operational Practice	Issue:

To call the Mate, Mr XXX, to attend a Chief Surveyor's interview and at that interview to give him a warning as to:
his failure to fix a safe navigational watch;
his failure to fix and to plot the ship's position on the chart at frequent intervals;
his failure to call the Master when he had not sighted a navigation mark by the expected time;
and to recommend that he attends a Small Vessels' Navigation and Radar Training Course.

227/1994 Date: 16/09/1994

Recommendation To:	Maritime and Coastguard Agency	Action:
Recommendation Focus:	Other	Issue:

To write to X pointing out:
that within the previous 18 month there have been three accidents involving their ships in which there were common causal factors including the non-provision of lookouts on the bridge at night, possible fatigue amongst watchkeeping officers and poor standards of navigation;
that the company should take all possible steps to ensure that such factors are minimised in the future;
the merits of ensuring that all their masters and navigation watchkeeping officers who have not recently qualified attend suitable approved Radar Courses.

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

Case Number **1396/2007** **07/09/2007** **Grounding**
Regulation **Accident** Status **Closed**
Location **Coastal waters** **Scottish** **5517.0 N** **534.0 W**
Natural Light **Darkness** Sea State **Calm <2 ft**
Visibility **Good (5 - 10)** Wind force Range **0-3**
Dry cargo Dead **0** Injured **0** **Material Damage**
General cargo Flag **Netherlands, Antilles**
Single deck **1409.00** gt
When: **On passage** **76.19** Reg. L **79.00** LOA

Deck
Bridge procedures
Lookout
Passage Planning/Track Monitoring
Position monitoring not frequent enough
Human factor
People
Fatigue
Inattention
Understimulation
System - Company and organisation
Company standing orders inadequate, insufficient, conflicting
Inadequate manning
Inadequate resources
Pressures - organisational
System - Crew Factors
Inadequate management of physical resources
Procedures inadequate

Grounding
Bridge procedures
Location: **Navigation/communication control space**
General management/procedures

Oh dear - it's happened again!

A 79-metre cargo vessel was steaming south-west in calm weather and good visibility. The vessel had loaded a cargo of timber and departed her load port earlier that evening. Although the vessel's passage plan allowed for her to pass outside of a small island the Master, who was on watch alone with no lookout, chose to take the inshore route passing between the inside of the island and the mainland. It was dark and, shortly after making an initial course alteration to effect his chosen route, the Master fell asleep. He awoke some 20 minutes later as the vessel grounded on the island. It was close to high tide as the vessel grounded and she listed heavily to port as the tide fell.

A number of the crew were evacuated overnight as a safety precaution. They returned the following morning when the vessel was refloated on the rising tide, with tug assistance. Fortunately no pollution or injuries occurred and, following diver's examination, which revealed damage to the forepart of the underwater hull, the vessel was allowed to proceed to a nearby port for further examination and repairs.

Whilst alongside in port a minor quantity of gas oil was discharged overboard during ballasting operations, which resulted from a split between the ballast tank and an adjacent bunker tank, caused during the grounding.

The Lessons

1. The vessel was manned in excess of the requirements of it's Safe Manning Certificate however, although the recorded hours of work and rest for the vessel appeared to comply with STCW

requirements, under deeper scrutiny these were seen to be impossible to achieve, given the vessels trading patterns and working time in port. Owners and managers should ensure that the manning of their vessels takes into account the demands of the vessel's trade and not simply the statutory minimum requirements.

2. MAIB sees, all too often, incidents involving lone bridge watchkeepers. A number of factors can affect the lone watchkeeper including fatigue, lack of stimulation and "stuffy" bridge atmospheres. All can lead to drowsiness and, in the worst case, sleep. The benefits of a bridge look out in addition to the watchkeeper cannot be overemphasised in contributing to vessel safety. Owners and managers should ensure that not only are their vessels adequately manned, but that personnel are utilised to their best effect in providing a safe lookout at all required times.

3. Whilst safety management systems are a prerequisite of any good management system, whether under ISM or not, audit procedures should be robust to ensure that "what is written is happening". Owners and managers should continually review their audit procedures to ensure they remain strong, and target all areas of the vessel's safe operation.

4. Following suspected damage a diver's examination can, at best, only give an indication of the condition of the external hull, and this dependant very much on the experience of the diver, and the conditions during the dive (visibility etc.). Masters and Superintendents should be aware that, following a grounding, internal damage may be present which is not immediately apparent, and proceed with caution until the vessel has been thoroughly examined, both externally and internally, in way of any damage areas.

A 1409 gt general cargo vessel was on passage in coastal waters with a cargo of timber, in good conditions, with F2 winds, calm seas and good visibility, when she grounded on a small island in the hours of darkness. Although the vessel's passage plan allowed for her to pass outside of the island, the master, who was keeping watch alone, chose to take the inshore route passing between the inside of the island and the mainland. Shortly after making the initial course alteration to transit between the island and mainland, the master fell asleep and awoke about 20 minutes later, just as the vessel grounded on the island. The master immediately sounded the general alarm and contacted the coastguard, who then issued a Mayday relay. The grounding occurred close to high tide and the vessel listed heavily to port as the tide fell, and 4 of the 6 crew were evacuated by the local ALB to the small island overnight. A rescue helicopter also attended the scene. The vessel was refloated the following morning with tug assistance, and then made her own way to a nearby port to unload her cargo. No injuries or pollution resulted at the time of grounding, although minor pollution did occur whilst ballasting when the vessel was alongside.

The pollution occurred as a result of a transfer of gas oil through a split between a bunker tank and the adjacent ballast tank, resulting from the grounding, which allowed a flow of oil into the ballast system. The master had been working 6 on, 6 off for nearly 4 months, and this, exacerbated by the vessel's regular busy schedule, trading between coastal ports, meant that cumulative fatigue is a likely cause of this accident. No watch alarm was fitted to the vessel at the time of the accident, although the managers subsequently arranged for one to be fitted. There was no company SMS procedure for the use of lookouts at night, and lookouts were generally not used in this respect, an issue which had been identified at previous PSC inspections.

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

Case Number **1476/2005** **10/09/2005** **Collision**
Regulation **Accident** Status **Closed**
Location **High seas** **Non UK** **115.0 N** **10325.0 E**
Natural Light **Darkness** Sea State **Calm <2 ft**
Visibility **Good (5 - 10)** Wind force Range **0-3**
Dry cargo Dead **0** Injured **0** **Minor Damage**
Container Flag **U.K.**
17887.00 gt
When: **On passage** **0.01** Reg. L **181.76** LOA
Deck
Bridge procedures
Lookout
Ship/Light/buoy/object not detected/ reported
Human factor
People
Inattention
System - Crew Factors
Lack of communication or co-ordination
Rule Contravention
Collision regulations not applied or applied incorrectly
Human factor
People
Fatigue
Inattention
Company, master's or other orders not followed or followed incorrectly
Human factor
People
Fatigue
Inattention
Collision
Bridge procedures
Location: **Navigation/communication control space**
Navigation/communication-equipment
Communications/Alarm
Features/functions/alarms not used or used incorrectly
Human factor
People
Perception abilities
Navigational Instruments(Radar, GPS, ECDIS etc)
Inappropriate mode/scale/datum selected
Human factor
People
Perception abilities

Tanker/combination carrier Dead **0** Injured **0** **Material Damage**
Oil/Chemical tanker Flag **Panama**
4412.00 gt
When: **On passage** **0.01** Reg. L **107.00** LOA
Deck
Bridge procedures

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

Manning
Sole watchkeeper
Human factor
System - Company and organisation
Inadequate manning
System - Crew Factors
Inadequate management of physical resources
Poor Decision Making
Speed or heading not altered - risk not appreciated
Human factor
People
Inattention
Rule Contravention
Collision regulations not applied or applied incorrectly
Human factor
People
Inattention
Collision
Bridge procedures
Location: **Navigation/communication control space**
General management/procedures
Navigation/communication-equipment
Navigational Instruments(Radar, GPS, ECDIS etc)
Features/functions/alarms not used or used incorrectly
Human factor
People
Perception abilities

Fatigue and Distraction Lead to Malacca Strait Collision

Narrative

A fully laden 17,000gt UK flag container vessel (Figure 1) collided with a partly laden Panamanian flagged 4,000gt tanker (Figure 2). Both vessels were heading north-westerly in the Malacca Straits. The accident occurred at 0345 hours.

The tanker was proceeding at her full sea speed of about 10 knots. At about 0200, as there was little traffic around, the master and the seaman lookout went below to rest, leaving the second mate alone on the bridge. The company's policy was for the master to be on the bridge in traffic separation schemes and in areas of high traffic density.

At the time of the accident, the container vessel was building her speed towards her maximum of 19 knots. She had left her berth in Singapore shortly after midnight. At about 0300, the master had gone below to send some departure messages, with the intention of returning in about an hour. There was little traffic around, but this left the second mate and a lookout on watch. The company's policy was for the master to be on the bridge at this time. The second mate was suffering from fatigue as he had received just 3 hours of broken sleep in the previous 28 hours. The container vessel's second mate had acquired the tanker on his ARPA as he approached to overtake. He elected to overtake on her starboard side, and he altered the course of his vessel slightly to starboard to leave more room.

The second mate on board the tanker had acquired the container vessel on his ARPA, and he was also plotting two small targets which were approaching on his starboard bow. He had decided that the overtaking vessel was going to pass clear, but he neglected to keep monitoring her position and course. During the build up to the collision, he plotted his vessel's position a number of times in the curtained-off chart room. He might have noticed, and been reminded of the overtaking vessel, but the window in the chart room was permanently blocked to prevent light reflecting from the paintwork on the starboard bridge wing

The Malacca Strait VTIS operator called the tanker to remind him that he had two targets on his

starboard bow, and this prompted the second mate to alter course to bring them onto his port bow. He had altered into the path of the overtaking vessel but, by that time, was concentrating on the two other targets. The VTIS operator then called him again to let him know about the overtaking vessel. He looked to starboard and saw the foremast light of the container vessel broad on his starboard bow and very close. He ran to the steering position and put the wheel hard to port.

The seaman lookout on board the container vessel had noticed the tanker alter course to show a green light and mast lights, but thought it unnecessary to inform the second mate. He assumed that he was aware because he was standing close by and was looking out of the window. In fact, the second mate had not noticed, and did not become aware of the dangerous situation until the tanker was very close to his own port bow. He then ordered the watchman to change to manual steering and put the wheel hard to starboard as he called the master by phone.

The two vessels' bows collided first, and they then swung apart and the starboard quarter of the tanker collided with the container vessel's hull just forward of the accommodation. The two hulls then scraped together until the faster container vessel finally pulled ahead and clear.

Both vessels went to anchor in the inshore lane to assess damage. They both informed the local VTIS of the situation, however, surprisingly, they did not communicate with each other.

The master of the container vessel followed company instructions and informed the vessel managers and owners using 24-hour emergency contact numbers.

Despite the company orders requiring immediate notification after an accident, and the fact that 24-hour numbers were available, the master of the tanker chose to tell his designated person by e-mail as there was no satellite phone on board. He did not attempt to make a radio link call and, due to the time difference, the DPA was not aware of the accident until many hours later.

Both vessels were seriously damaged but, fortunately, nobody was injured and there had been no pollution as a result of the accident.

The Lessons

1. The ARPA CPA and TCPA alarm functions on both vessels were set to the minimum possible for each unit. Neither officer therefore received a timely warning of the impending close-quarters situation. Although frequent alarms can be considered a nuisance in busy traffic areas, these safety features should be used. When set to sensible limits, they help to avert collisions like this one.

2. The second officer on board the container vessel had elected to go ashore during the previous evening in port instead of sleeping prior to his watch. He would have been fatigued during the lead up to the collision, and this might explain his inattention. Every OOW has an individual responsibility to ensure that he is properly rested before taking over the watch. If that means not going ashore, then so be it.

3. The second officer on board the tanker was standing a single-handed navigation watch at night, contrary to international regulations. This led to him having to take VHF radio calls, navigate and plot positions, perform anti-collision manoeuvres and monitor for other vessels without assistance. The inevitable result was that one of the tasks, in this case monitoring other traffic, was not done satisfactorily. STCW 95 requires a dedicated lookout to be posted at night. This is a sensible requirement and one which should be complied with in all circumstances.

4. The owners, flag state and coastal state should be informed of an accident by the quickest possible means as soon as practicable after an accident. Masters should bear in mind that it is still possible to place a link call through the local coast radio station in many parts of the world.

5. The bad practice of permanently obscuring chart room or wheelhouse windows should be avoided. Good allround visibility is an essential requirement in order to maintain a proper lookout.

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

Case Number **1695/2005** **11/10/2005** **Grounding**
Regulation **Accident** Status **Closed**
Location **Coastal waters** **English** **5234.0 N** **149.0 E**
Natural Light **Light** Sea State **Calm <2 ft**
Visibility **Mod. 2 - 5 nm (3)** Wind force Range **4-6**
Other commercial Dead **0** Injured **0** **No Damage**
Associated with offshore industry Flag **Norway**
1924.00 gt
When: **On passage** **0.01** Reg. L **30.21** LOA
Deck
Bridge procedures
Lookout
Ship/Light/buoy/object not detected/ reported
Manning
Individual takes inappropriate role
Human factor
System - Crew Factors
Procedures inadequate
Passage Planning/Track Monitoring
Plan not followed
Human factor
People
Fatigue
Grounding
Bridge procedures
Location: **Navigation/communication control space**
General management/procedures

The vessel was on passage from Den Helder to Yarmouth via 3 offshore installations. Departing the final installation at 1605 the second officer planned a passage to Great Yarmouth using GPS waypoints. He then transferred the GPS courses onto paper charts (no ECDIS fitted) up to the S Corton Cardinal Buoy. The work regime of the two second officers was not well defined - each was responsible for everything happening on their own 6 hour watch, not the usual allocation of junior and senior second officer tasks. As a result the second officer coming on watch at 1800 had to transfer the remaining courses to complete the passage plan; in the process he incorrectly transcribed the course 302 as 320. At 1913 the master took the watch and, having sighted the chart, he altered to 320. The second officer took a position shortly after completion of the turn, and reported the vessel north of the planned track. The master altered course to port to regain track but during the manoeuvre the vessel grounded on the SW tip of Corton Sand. Visibility was between 1 to 1.5 miles, light levels were falling just before sunset. The vessel re floated 6 hours later with tug assistance. Survey showed no visible signs of damage.

Effectively the master had the con, the oow ceased his duties as navigator shortly after putting the last position on the chart when he turned his attention to organising the crew for entry into Yarmouth. There was no look out / helmsman present (entering port and approaching sunset). Therefore at one of the most dangerous and critical times of a passage the master was effectively carrying out the duties of Con, Navigation, Helm, and lookout. It is possible that fatigue was a factor which caused the initial error when the second officer placed the wrong course details on the chart (6 on 6 off continuous). Master and mate share the driving at a platform, the master conducts all pilotage.

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

Case Number **1707/1996** **12/10/1996** **Contact**
Regulation **Accident** Status **Closed**
Location **Port/harbour area** **UK** **5142.0 N** **501.0 W**
Natural Light **Darkness** Sea State **Moderate**
Visibility **Good (5 - 10)** Wind force Range **7-9**
Tanker/combination carrier Dead **0** Injured **0** **Material Damage**
Oil tanker Flag **U.K.**
Products **686.00** gt
0.01 Reg. L **61.02** LOA

Deck
Contact
Import Default
Import Default
Import Default
Import Default
Human factor
People
Perception of risk
System - Company and organisation
Pressures - organisational
Technical factor
Environment
Heavy Weather

Ship
Structural integrity
Hull structure, side mid-length - between the bow and stern structure
Import Default
Human factor
People
Fatigue and vigilance

THE MASTER LOST CONTROL OF HIS SHIP WHILST ATTEMPTING TO GO ALONGSIDE ONE OF THE INSIDE BERTHS AT THE TEXACO OIL TERMINAL, MILFORD HAVEN. THE WIND AND TIDE STRENGTHS WERE STRONG AND HE WAS UNABLE TO COMPLETE HIS APPROACH TURN AND DRIFTED TOWARDS A SHIP MOORED AT THE NEXT BERTH. HE WAS ABLE TO AVOID THE OTHER SHIP BUT WAS UNABLE TO ARREST THE MOVEMENT UNTIL IT FETCHED UP IN THE CORNER OF THE JETTY. THE MAIN CONTRIBUTORY FACTORS WERE - MASTER'S FATIGUE FROM A LONG CAR JOURNEY; OPERATIONAL PRESSURES TO MEET TIME SCHEDULES; MASTER'S UNFAMILIARITY WITH THE SHIP AND HIS UNDERESTIMATION OF THE ENVIRONMENTAL CONDITIONS.
Data in MAIB historic format:
Accident Factor Information:
Record 1
Factor: Human Factor
Human Factor: Individual
How Why: Fatigue and Vigilance
Where: Control Space
What: Side Shell
Comment: FATIGUED FROM THE LONG AND DIFFICULT CAR JOURNEY
Record 2

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

Factor: Human Factor
Human Factor: Individual
How Why: Perception of Risk
Comment: UNDERESTIMATED STRENGTH OF ENVIRONMENTAL CONDITIONS AND UNDERTOOK A
Comment2: MANOEUVRE ON A SHIP WITH WHICH MASTER WAS NOT FAMILIAR.
Record 3
Factor: Human Factor
Human Factor: Company and Organisation
How Why: Pressures - Organisational
Comment: BY COMPANY - MASTER TO DRIVE FROM LIVERPOOL TO PEMBROKE DOCK AND
Comment2: COMMITMENT TO AN OPERATIONAL TIME SCHEDULE.
Record 4
Factor: Environmental
Human Factor: Not applicable
How Why: Beaufort Scale
Where: Complete Vessel
What: Shore Equipment

125/1997 Date: 22/05/1997
Recommendation To: Other Action:
Recommendation Focus: Other Issue: Dissemination of information
Send a letter to the Master, X The letter should incorporate the points made by the Inspector in Sects 4.1.5 and 4.2.3 of his Report. It should also emphasise the statutory obligation of every master and seaman to be properly rested when commencing duty, as stated in Merchant Shipping Notice M.1602, paragraph 3.

126/1997 Date: 22/05/1997
Recommendation To: Other Action:
Recommendation Focus: Operational Practice Issue: Other
Limit the named vessels on Pilotage Exemption Certificates to include only those which are 'sister ships' or vessels on which the holder has had adequate Pilotage experience.

127/1997 Date: 22/05/1997
Recommendation To: Other Action:
Recommendation Focus: Operational Practice Issue: Other
Consider amending the qualifying requirements for Pilotage Exemption for vessels of 50m to 100m in length to at least six trips in and out of Milford Haven, at least three of which to be performed at night.

128/1997 Date: 22/05/1997
Recommendation To: Shipping Company/Owner/Master Action:
Recommendation Focus: Operational Practice Issue: Documentation
Agree with X and other jetty operators maximum weather limitations for berthing and unberthing operations for vessels using gas and petroleum berths. Vessel movements should not be permitted if these limitations are exceeded.

129/1997 Date: 22/05/1997
Recommendation To: Shipping Company/Owner/Master Action:
Recommendation Focus: Operational Practice Issue: Documentation
Establish procedures so that when there is to be a change of master and the incoming master is unfamiliar with the vessel, he is given an opportunity to experience her handling before he takes over from the outgoing master.

130/1997 Date: 22/05/1997
Recommendation To: Shipping Company/Owner/Master Action:
Recommendation Focus: Operational Practice Issue: Training
Issue standing instructions to all masters that berthing operations should in no circumstances be attempted if the weather state exceeds the limitations set out by the berth operators.

131/1997 Date: 22/05/1997
Recommendation To: Port/Harbour/Inland Waters Authority Action:
Recommendation Focus: Operational Practice Issue: Other
Before applying to a Pilotage Authority for a Pilotage Exemption Certificate for a named master or officer, ensure that the master or officer is sufficiently experienced with the practical handling of every vessel to be named on the Certificate.

132/1997 Date: 22/05/1997
Recommendation To: Port/Harbour/Inland Waters Authority Action:
Recommendation Focus: Operational Practice Issue: Other

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

Ensure that the procedures adopted by Texaco Ltd for vessels berthing and unberthing at Berths 4 & 5 at the X Jetty are made known to Milford Haven Port Authority, Milford Haven Pilotage Ltd, charterers and masters (through port agents).

133/1997 Date: 22/05/1997

Recommendation To:	Port/Harbour/Inland Waters Authority	Action:	
Recommendation Focus:	Safety of Navigation	Issue:	Watchkeeping and Navigational Practice

Ensure that berthing or unberthing does not take place if the weather conditions exceed the limitations set out in the Texaco procedures, except with the agreement of all parties and when towage assistance is provided.

134/1997 Date: 22/05/1997

Recommendation To:	Maritime and Coastguard Agency	Action:	Prosecution or Disciplinary Action
Recommendation Focus:	Human Factors	Issue:	Individual

Provide adequate protection to all fixed pipelines on the Texaco Jetty, to minimise the possibility of damage by vessels and consequent pollution.

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

Case Number **1721/1998** **07/12/1998** **Grounding**
Regulation **Accident** Status **Closed**
Location **Coastal waters** **UK** **5634.0 N** **232.0 W**
Natural Light **Darkness** Sea State **Calm <2 ft**
Visibility **Good (5 - 10)** Wind force Range **0-3**
Dry cargo Dead **0** Injured **0** **Material Damage**
General cargo Flag **Barbados**
Single deck **909.00** gt
0.01 Reg. L **59.98** LOA

Deck
Grounding
Import Default
Import Default
Import Default
Import Default
Human factor
System - Equipment
Equipment not available
Working environment
Ship movement weather conditions
Ship
Structural integrity
Hull structure, bow - forward of the collision/forward most bulkhead
Import Default
Human factor
People
Fatigue and vigilance
System - Crew Factors
Procedures inadequate

DRY BULK CARRIER ON PASSAGE FROM AMSTERDAM TO INVERNESS. MASTER FELL ASLEEP ON WATCH, THEREBY FAILING TO MAKE THE CORRECT COURSE ALTERATION. MASTER SUFFERED FROM FATIGUE DUE TO HEAVY WEATHER EXPERIENCED AND OFF-DUTY TASKS. NO NIGHT WATCH POSTED AND NO BRIDGE WATCH ALARM FITTED.
Data in MAIB historic format:
Accident Factor Information:
Record 1
Factor: Human Factor
Human Factor: Individual
How Why: Fatigue and Vigilance
Where: Control Space
What: Bow
Comment: MASTER FELL ASLEEP ON WATCH.
Record 2
Factor: Human Factor
Human Factor: Crew Factors
How Why: Procedures Inadequate
Where: Control Space
What: Bow
Comment: NO NIGHT LOOKOUT POSTED.
Record 3

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

Factor: Human Factor
Human Factor: Equipment
How Why: Equipment not Available as Needed
Comment: NO WATCH ALARM FITTED.
Record 4
Factor: Human Factor
Human Factor: Working Environment
How Why: Performance Affected by Ship Movement/Weather Effects
Comment: MASTER FATIGUED THROUGH LACK OF SLEEP CAUSED BY HEAVY WEATHER.

161/1999 Date: 19/07/1999

Recommendation To:	Maritime and Coastguard Agency	Action:	Internal Action
Recommendation Focus:	Safety of Navigation	Issue:	Watchkeeping and Navigational Practice

Reaffirm its position on the requirement to post a lookout in addition to the officer of the watch during the hours of darkness.

162/1999 Date: 19/07/1999

Recommendation To:	Maritime and Coastguard Agency	Action:	Internal Action
Recommendation Focus:	Safety of Navigation	Issue:	Bridge Navigation Equipment

Continue to promote the concept of an international standard and carriage requirement for watch alarms.

163/1999 Date: 19/07/1999

Recommendation To:	Shipping Company/Owner/Master	Action:	
Recommendation Focus:	Safety of Navigation	Issue:	Watchkeeping and Navigational Practice

Ensure that a lookout is posted in addition to the officer of the watch during the hours of darkness.

164/1999 Date: 19/07/1999

Recommendation To:	Shipping Company/Owner/Master	Action:	
Recommendation Focus:	Safety of Navigation	Issue:	Bridge Navigation Equipment

Consider fitting a watch alarm.

166/1999 Date: 21/07/1999

Recommendation To:	Maritime and Coastguard Agency	Action:	Internal Action
Recommendation Focus:	Safety of Navigation	Issue:	Watchkeeping and Navigational Practice

Seek international agreement on the specific number of qualified watchkeeping officers to be carried when determining minimum safe manning levels.

167/1999 Date: 21/07/1999

Recommendation To:	Shipping Company/Owner/Master	Action:	
Recommendation Focus:	Safety of Navigation	Issue:	Watchkeeping and Navigational Practice

Consider employing an additional watchkeeping officer on those vessels where the master and mate are currently the only qualified watchkeeping officers on board.

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

Case Number **1725/1995** **20/10/1995** **Grounding**
Regulation **Accident** Status **Closed**
Location **Coastal waters** **UK** **5751.0 N** **641.0 W**
Natural Light **Darkness** Sea State **Calm <2 ft**
Visibility Wind force Range **0-3**
Dry cargo Dead **0** Injured **0** **Constructive Total Loss**
Bulk carrier Flag **Antigua & Barbuda**
1990.00 gt
0.01 Reg. L **80.68** LOA

Deck
Grounding
Import Default
Import Default
Import Default
Import Default
Human factor
People
Fatigue and vigilance

Ship
Structural integrity
Hull structure, bottom mid-length - between the bow and stern structure
Import Default
Human factor
System - Company and organisation
Company standing orders inadequate, insufficient, conflicting
Inadequate resources
Pressures - organisational
System - Crew Factors
Communication or language difficulties
Manning (rotation /watches)
System - External bodies liaison
Non compliance
Working environment
Ship movement weather conditions

VESSEL REGISTERED IN ANTIGUA & BARABUDA RAN AGROUND ON SCALPAY IN WESTERN ISLES WHILE ON ROUTE BETWEEN ARKLOW AND ROSTOK. MASTER CALLED CHIEF OFFICER TO RELIEVE HIM ON THE BRIDGE, BUT CHIEF OFFICER OVERSLEPT AND MASTER FELL ASLEEP ON THE BRIDGE. THERE WAS NO WATCH ALARM AND NO SEAMAN LOOKOUT. MAIN CAUSAL FACTOR WAS OFFICER FATIGUE RAISED BY HEAVY WORKLOAD AND TOO FEW CREW. VALUE OF REST PERIODS AT SEA DIMINISHED BY VIOLENT MOTION IN ACCOMMODATION AND POSSIBLY DESIGN OF BEDS.
19/2/96 COPIES OF REPORT SENT TO ANTIGUAN & BARBUDAN AUTHORITIES
Data in MAIB historic format:
Accident Factor Information:
Record 1
Factor: Human Factor
Human Factor: External Bodies Liaison
How/Why: Non-compliance
Where: Control Station

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

What: Bottom Shell
Record 2
Factor: Human Factor
Human Factor: Company and Organisation
How/Why: Company Standing Orders Inadequate, Insufficient, Conflicting
Where: Control Station
What: Bottom Shell
Record 3
Factor: Human Factor
Human Factor: Company and Organisation
How/Why: Pressures - Organisational
Where: Control Station
What: Bottom Shell
Record 4
Factor: Human Factor
Human Factor: Company and Organisation
How/Why: Inadequate Resources
Where: Control Station
What: Bottom Shell
Record 5
Factor: Human Factor
Human Factor: Crew Factors
How/Why: Communication
Where: Control Station
What: Bottom Shell
Record 6
Factor: Human Factor
Human Factor: Crew Factors
How/Why: Manning (Rotation/Watches)
Where: Control Station
What: Bottom Shell
Record 7
Factor: Human Factor
Human Factor: Working Environment
How/Why: Performance Affected by Ship Movement/Weather Effects
Where: Control Station
What: Bottom Shell
Record 8
Factor: Human Factor
Human Factor: Individual
How/Why: Fatigue and Vigilance

103/1996 Date: 15/02/1996

Recommendation To: Maritime and Coastguard Agency Action: Prosecution or Disciplinary Action
Recommendation Focus: Operational Practice Issue:

Send a letter of reprimand to the Master X. Capt X holds a UK Class 3 Certificate of Competency No XX with a Near continental command Endorsement.

Although the underlying causes of the accident have not been attributed directly to him, Capt Burr must bear responsibility for:

i) Falling asleep while sole watchkeeper on the bridge, thus endangering his vessel and the lives of his crew and

ii) Not ensuring that a seaman lookout was posted on the bridge at night in accordance with The Merchant Shipping (Certification and Watchkeeping) Regulations 1982, which applied to XXX when in United Kingdom waters, and especially in light of the fact that no watch alarm was fitted.

Prepared by MAIB for XXXXXXXXF0006946 – 19 October 2010

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

The Branch considers that the underlying cause of this accident was that the vessel was being operated with a deficient level of manning. Although the manning was to the satisfaction of the flag state authority, it is noted that the Government of Antigua and Barbuda has ratified neither the STCW Convention of 1978 nor the ILO Minimum Standards Convention of 1976.

104/1996 Date: 15/02/1996

Recommendation To: Maritime and Coastguard Agency Action:

Recommendation Focus: Other Issue:

As a short term measure, consider taking unilateral action against similar non-Convention vessels which are found to be deficiently manned in UK ports, by implementing the doctrine of "no more favourable treatment" through Port State Control procedures.

105/1996 Date: 15/02/1996

Recommendation To: Maritime and Coastguard Agency Action: Implementation by Another Body

Recommendation Focus: Other Issue:

As a long term measure, consider raising United Kingdom concerns about non-Convention vessels operating with deficient manning in UK waters, through the Maritime Safety Committee at IMO and through the next Port State Control conference.

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

Case Number **1789/1997** **24/10/1997** **Grounding**
Regulation **Accident** Status **Closed**
Location **Coastal waters** **UK** **5441.0 N** **544.0 W**
Natural Light **Semi-dark** Sea State **Moderate**
Visibility **Good (5 - 10)** Wind force Range **0-3**
Dry cargo Dead **0** Injured **0** **Material Damage**
Bulk carrier Flag **Bahamas**
1602.00 gt
0.01 Reg. L **69.02** LOA

Deck
Grounding
Import Default
Import Default
Import Default
Import Default
Human factor
People
Fatigue and vigilance
System - Crew Factors
Manning (rotation /watches)

VESSEL IS A SINGLE HOLD DRY CARGO VESSEL ENGAGED ON THE UK/NEAR CONTINENT TRADE. WHILST ON A BALLAST PASSAGE FROM GLASGOW TO BELFAST, THE MASTER FAILED TO MAKE A COURSE ALTERATION AT THE REQUIRED TIME AND THE VESSEL CROSSED BELFAST LOUGH AND RAN AGROUND AT FULL SPEED. DAMAGE WAS CONFIRMED TO THE AREA AROUND THE VESSELS FOREFOOT, ANDAFTER RE-FLOATING WITH TUG ASSISTANCE THE VESSEL PROCEEDED TO DRYDOCK IN LIVERPOOL. THERE WERE NO INJURIES OR POLLUTION DUE TO THE ACCIDENT. THE PRIME CAUSE OF THE GROUNDING WAS THE MASTER, WHO WAS THE WATCHKEEPER, FALLING ASLEEP ON WATCH.

Data in MAIB historic format:
Accident Factor Information:
Record 1
Factor: Human Factor
Human Factor: Individual
How Why: Fatigue and Vigilance
Where: Control Station
Comment: MASTER FAILED TO KEEP AWAKE DUE IN PART TO FATIGUE AND LACK OF OPERATIONAL
Comment2: WATCH ALARM
Record 2
Factor: Human Factor
Human Factor: Crew Factors
How Why: Manning (Rotation/Watches)
Where: Control Station
Comment: BRIDGE NOT MANNED WITH A DEDICATED LOOKOUT DURING HOURS OF DARKNESS.

114/1998 Date: 25/02/1998
Recommendation To: Other Maritime Administration Action:
Recommendation Focus: Other Issue: Dissemination of information
Ensure that this report is brought to the attention of the Bahamas Ship owners' Association.

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

Case Number **1943/2006** **03/12/2006** **Heavy Weather Damage**
Regulation **Accident** Status **Closed**
Location **Coastal waters** **English** **5005.0 N** **552.0 W**
Natural Light **Light** Sea State **Rough**
Visibility **Good (5 - 10)** Wind force Range **7-9**
Dry cargo Dead **0** Injured **0** **Minor Damage**
Specialised carrier Flag **Italy**
Vehicle **38651.00** gt
When: **On passage** **0.01** Reg. L **176.00** LOA

Deck
Bridge procedures
Communications/Orders
Communications failure, master/watchkeeper/rating
Poor Decision Making
Location: **Navigation/communication control space**
Incorrect or insufficient action taken
Speed - too fast for conditions
Hazardous Incident
General management failure
Location: **Navigation/communication control space**
Safety
General shipboard activities
General - Unsafe practices
Location: **Navigation/communication control space**
Involving fatigue/tension
Poor decision making/information use
Ship
Structural integrity
Hull structure, side mid-length - between the bow and stern structure
Location: **Other internal deck/space**
Cargo, shift (solid)
Human factor
People
Fatigue
Personality
Technical factor
Environment
Heavy Weather

Don't Take Chances in Heavy Seas
Narrative
A 38,000gt vehicle carrier engaged on a regular liner service between the Aegean and NW European ports was approaching Land's End from the English Channel in very heavy weather. The master, who prudently had reduced the vessel's speed to a minimum off Lizard Point for several hours when the vessel was pitching violently in a westerly swell, then decided that the weather had improved sufficiently for the vessel to resume its passage towards the Bristol Channel. Thus, as the vessel entered the Land's End Traffic Separation Scheme (TSS) in gale force winds and very heavy seas, course was altered to north to round Land's End, which placed the heavy swell on the beam.
The vessel was carrying a mix of cars, vans and heavy earth-moving vehicles on its nine decks. The crew had checked the lashings on all the various vehicles in the hours leading up to the vessel

rounding Land's End, and extra lashings were placed on several vehicles, including a 76 tonne excavator unit, which was secured alongside other vehicles weighing between 30 and 60 tonnes adjacent to the vessel's stern ramp.
When the vessel altered course off Land's End, it began to roll violently and also continued to pitch heavily, effectively adopting a corkscrewing motion. After a short time a lashing on the 76 tonne unit parted, and this signalled the start of a chain reaction as other lashings then also started to part. The vehicle began to slide around the deck, crashing into and parting the lashings on the adjacent vehicles. The master was quickly made aware of the fact that some of the cargo lashings had parted, but considered he was unable to reduce the vessel's motion as he was in a TSS and did not think he could alter course.
As the vessel continued to move violently, the situation on the main deck deteriorated as there were now 6 cargo units, together weighing over 200 tonnes, on the move, colliding with one another and the side of the ship. The ability of the units to move around the deck was made worse when the hydraulic tanks of some of the vehicles were ruptured, causing the vessel's deck to become very slippery.
Once clear of the TSS, the vessel altered course onto a north easterly heading and the motion began to improve, but by that time the damage to both ship and cargo had been done.
The vessel made port, but was delayed for several days while the damage to both the cargo and the hull was assessed and repaired.
The Lessons
1. The master's decision to resume passage when the wind remained at gale force and with a heavy swell still running, was premature, since the vessel had to turn beam onto the swell to pass around Land's End. Whether this decision was based on the fact that the vessel was on a liner service, and was already behind schedule and in danger of missing another tide at its next port if it did not resume passage, is not clear, but remains a possibility.
2. The master took the decision to resume passage after many hours on the bridge, in heavy weather. Mariners must be aware that their cognitive processes will be affected by fatigue and that this will have an adverse impact on their ability to make clear and rational decisions in such situations.
3. Once the vessel entered the TSS, the master was adamant that he could not alter course, even though he was aware of the extent of the damage being caused to both the cargo and to his vessel. He should have considered the safety of his vessel ahead of the need to keep rigidly to a particular heading within a TSS. Rule 2(b) of the Colregs anticipates this and makes proper allowance for such circumstances.

A RoRo vehicle carrying vessel was on passage along the South Coast of England when it encountered heavy weather.
The vessel was initially hove to ride out the worst of the weather but after several hours the decision was taken to resume normal passage although the conditions were still poor in Gale force winds.
Shortly after altering onto a course which placed the seas on the beam, the vessel began to roll and pitch violently.
At this time the lashings on a large item of cargo, an earth moving excavator, parted and the vehicle began to move around on the enclosed deck of the vessel. The vehicle in turn made heavy contact with other vehicles stowed nearby and, with the vessel continuing to roll heavily, eventually the lashings of six large vehicles were broken.
The movement and contact between these vehicles caused significant damage to the vehicles as well as material damage to the side of the vessel.
The vessel eventually altered onto a new course which reduced the motion and the movement of the cargo reduced accordingly. The vessel arrived at the discharge port on the West Coast of England and the damage to the vessel was repaired and the cargo was assessed for damage.

Cases reported to MAIB 1991 to 2009 involving fatigue among Watch Officers Merchant Vessels of 500 gross tons or more

Case Number **2024/2005** **09/12/2005** **Contact**
Regulation **Accident** Status **Closed**
Location **Port/harbour area** **English** **5131.0 N** **9.0 E**
London
Natural Light **Light** Sea State **Sheltered Waters**
Visibility **Poor <2 nm (1,2)** Wind force Range **0-3**
Passenger Dead **0** Injured **0** **Material Damage**
Ro-ro, vehicle/passenger ferry Flag **Luxemburg**
11866.00 gt
When: **Mooring operations** **147.00** Reg. L **147.40** LOA

Deck
Bridge procedures
Poor Decision Making
Incorrect or insufficient action taken
Human factor
People
Fatigue
Perception abilities
System - Crew Factors
Procedures inadequate
Technical factor
Environment
Visibility

Contact
Bridge procedures
Location: **Navigation/communication control space**

The master (PEC holder) of a 147 metre RoRo vessel was berthing at the vessels usual berth in fog with visibility less than 100 metres, and 1 hour before low water.
The master could not see the bow which resulted in heavy contact with the pontoon. The vessel received an 11 metre split in the forward hull above the waterline. The pontoon was also damaged.
The master stated that in future he would not attempt to berth or proceed on the river in poor visibility.
He also stated that he was extremely fatigued, which had built up tension and stress.