Report on the investigation of the collision between

MV NEW FLAME & MT TORM GERTRUD

Gibraltar – 12 August 2007

This report has been prepared in accordance with the Gibraltar Shipping (Accident Reporting & Investigation) Regulations 2006

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

NOTE

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

The information contained in this report is subject to the Gibraltar Shipping (Accident Reporting & Investigation) Regulations 2006.

CONTENTS

GLOSSARY OF ABBREVIATIONS AND ACRONYMS

AIS	-	Automatic Identification System
APA	-	Algeciras Port Authority
ARPA	-	Automatic Radar Plotting Aid
AT	-	Algeciras Traffic
BA	-	British Admiralty
bhp	-	brake horse power
cable	-	one tenth of a nautical mile
CoG	-	Course over the ground
COLREGS	-	International Regulations for the Prevention of Collisions at Sea
CPA	-	Closest Point of Approach
GPA	-	Gibraltar Port Authority
GPS	-	Differential Global Positioning System
DPA	-	Designated Person Ashore
DMA	-	Danish Maritime Authority
ECDIS	-	Electronic Chart Display and Information System
GMA	-	Gibraltar Maritime Administration
IMO	-	International Maritime Organisation
ISM	-	International Safety Management (Code)
kW	-	Kilowatts
LT	-	Local Time (UTC +2)
m	-	metre
MF	-	Medium Frequency (Radio)
MoD	-	Ministry of Defence

n.miles	-	Nautical Miles
OOW	-	Officer of the Watch
PMA	-	Panama Maritime Authority
Point	-	Angular measurement equal to 11.25 degrees
RV	-	Rendezvous position
SBE	-	Standby engines
SMS	-	Safety Management System
SOLAS	-	International Convention for the Safety of Life at Sea
STCW(95)	-	Code of Standards of Training and Certification of Watchkeepers 1995
TCPA	-	Time to Closest Point of Approach (in minutes)
UK	-	United Kingdom
UKHO	-	United Kingdom Hydrographic Office
UTC	-	Universal Co-ordinated Time
VDR	-	Voyage Data Recorder
VHF	-	Very High Frequency
VTS	-	Vessel Traffic Management & Information System

SYNOPSIS

1. At approximately 0549 (UTC + 2) on 12th August 2007, the loaded 30,058gt Danish registered oil tanker, *Torm Gertud*, was in collision with the loaded 26,824 grt Panamanian registered geared bulk carrier, *New Flame*, approximately one mile southwest of Europa Point. The Gibraltar Maritime Administration was informed and an investigation started on that day.

2. Following communications between the Gibraltar Maritime Administration, the Danish Maritime Authority and the Panama Maritime Authority, it was agreed that the accident investigation should be a joint investigation with the Gibraltar Maritime Administration as the lead investigating authority, in accordance with IMO guidelines for accident investigations.

3. The *Torm Gertrud,* carrying a cargo of 37,359 metric tonnes of unleaded gasoline, was on passage from Port Augusta, Sicily, to Port Everglades, Florida, USA, calling off Algeciras to disembark a crewmember by launch.

4. The *New Flame*, carrying a cargo of scrap metal, was on passage from Bay Ridge Flats, New York, USA to Turkey and had anchored in Gibraltar Bay on 11th August 2007 to load bunkers.

5. After completing bunkering operation, the *New Flame* weighed anchor and proceeded southward from the anchorage towards a waypoint approximately 1.2 n.miles SSW of Europa Point.

6. The *Torm Gertud* was on a westerly course, proceeding towards an RV position 2½ n.miles South West of Europa Point, intending to pass 1 n.mile south of Europa Point Light.

7. At approximately 0549 LT, the two ships were in collision approximately 1 n.mile SSW of Europa Point. The bow of the *Torm Gertrud* struck the *New Flame* on the *New Flame's* starboard side in way of No.1 and No. 2 holds.

8. The *Torm Gertud* sustained severe damage to her forecastle, forepeak and No. 1 starboard ballast tank. There were no injuries to personnel and, due to the double hull construction, no oil escaped from the cargo tanks.

9. Following the incident, the *Torm Gertrud* was initially anchored to the south of Algeciras Port and later re-anchored in the north of the Bay of Gibraltar at the direction of the Captain of the Port of Algeciras.

11. The *New Flame* sustained extensive damage to her starboard side in way of No.1 & No.2 holds and No.1 & No.2 double bottom tanks. Due to the severity of the damage, the ballast pumps did not have sufficient capacity to deal with the in-rush of sea water and the *New Flame* began to list to starboard and sink by the head. The *New Flame* was abandoned. All the crew disembarked and were landed ashore without injury. The *New Flame* drifted towards the east, eventually running aground on a reef to the southeast of Europa Point, known locally as "Los Picos".

Subsequent salvage operations removed the *New Flame's* fuel and lub. oils. Operations to remove the *New Flame* from Los Picos are in progress.

12 Factors contributing to the accident included:

.1 Over reliance on electronic aids to navigation
.2 Inadequate passage planning.
.3 Inadequate bridge team management
.4 The limited monitoring or control of shipping movements within the waters of Gibraltar bay.
.5 The lack of formal procedures for the exchange of information between Algeciras Port Control and Gibraltar Port Control

13. Appropriate recommendations have been made which can be found in Section 4 of this report.

SECTION 1 – FACTUAL INFORMATION

1.1 PARTICULARS OF NEW FLAME, TORM GERTRUD & ACCIDENT DAMAGE

Vessel Details

Name: New Flame

IMO Number	.	9077393 .
Registered owner	.	Gladiator Navigation SA
Operator	:	Transmar Shipping Company S.A. 31, Praxitelous Str., 185 32, Piraeus, Greece
Port of registry	:	Panama
Flag	:	Panama
Type	:	Geared Bulk Carrier
Built	:	1994
Classification society	:	China Classification Society
Construction	:	Steel
Gross Tonnage	:	26,824
Engine power	:	11270 bhp, 8290 kW
Other relevant info	:	Single, fixed pitch propeller

Name: Torm Gertrud

IMO Number	.	9240885 .
Registered owner	.	A/S Dampskibsselskabet TORM
Operator	:	A/S Dampskibsselskabet TORM Tuborg Havnevej 18 DK-29000 Hellerup Denmark
Port of registry	:	Copenhagen

Flag	:	Danish
Type	:	Double hulled oil tanker
Built	:	2002
Classification society	:	Det Norske Veritas
Construction	:	Steel
Gross Tonnage	:	30,058
Engine power	:	11,640 bhp 8,562 kW
Other relevant info	:	Single, fixed pitch propeller

Accident details

Injuries to personnel	:	None reported
Damage - New Flame	:	Holed, starboard side – in way of No. 1 & No. 2 holds and No.1 & No. 2 starboard double bottom tanks. Subsequently grounded.
Damage - Torm Gertrud	:	Extensive damage to forecastle, fore peak tank & No.1 starboard ballast tank
Pollution	:	Nil.
Location of Accident	:	36°05.7 N 005°21.2 W (Approx. 1 n.mile SSW of Europa Point Lighthouse)
Date and Time	:	Approx 0549 (UTC + 2) on 12 August 2007

1.2 BACKGROUND

1.2.1 New Flame

.1 The *New Flame*, launched in 1994, was a geared bulk carrier with her main superstructure, accommodation and bridge situated aft.

.2 She was fitted with standard navigational equipment, which includes two ARPA radars, two GPS receivers, AIS, magnetic and gyrocompasses, autopilot, echo sounder, and VHF radios.

.3 The ship maintained a folio of British Admiralty paper charts

.4 The working language of the ship was English and ISM documentation was in English.

.5 A company experienced in the management and operation of handy-max sized bulk carriers operated the ship. The company had a valid Document of Compliance for the operation of this type of ship, issued by the Panama Bureau of Shipping on behalf of the Panama Maritime Authority.

.6 In June 2007 she had been subject to an expanded inspection under the Paris MOU for port state inspections, following an extended period of trading outside the European trading area. Six deficiencies were identified, none of them detainable. The ship had a valid Safety Management Certificate issued by the Panama Bureau of Shipping on behalf of the Panama Maritime Authority.

1.2.2 Torm Gertrud

.1 The *Torm Gertrud*, launched in 2002, was a double-hulled oil tanker with her main superstructure, accommodation and bridge situated aft.

.2 She was fitted with standard navigational equipment, which includes two ARPA radars, an ECDIS system, two GPS receivers, AIS, magnetic and gyrocompasses, autopilot, echo sounder, and VHF radios.

.3 The ship maintained a folio of both paper and electronic British Admiralty charts.

.4 The working language of the ship was English and ISM documentation was in English.

.5 A company experienced in the management and operation of product tankers operated the ship. The company had a valid Document of Compliance for the operation of this type of ship, and the ship had a valid Safety Management certificate, both issued by Lloyds' Register on behalf of the Danish Maritime Authority.

1.3 NAVIGATIONAL CREW

1.3.1 New Flame

.1 The *New Flame* had a complement of officers and crew in compliance with the requirements of the ship's Safe Manning Document. The ship's Master and Chief Engineer were Greek, the Chief Officer was Ukrainian and the remainder of the crew were Philippine nationals.

.2 The navigational crew on board *New Flame* consisted of the Master, Chief Officer, Second Officer and Third Officer. All were experienced seafarers and were holders of appropriate certificates of competency. The Master had served at sea for more than six years as Master. The navigational officer of the watch on duty at the time of the incident had over ten years experience as a navigational watch-keeping officer, including nine months as Third Officer on the *New Flame*.

.3 The Master had been on board the *New Flame* for over four months and had completed bunker operations in the Bay of Gibraltar on previous occasions.

.4 At the time of the collision the Master was in charge on the bridge, manoeuvring the ship, and the Second Officer was engaged in fixing the ship's position, monitoring the ship's radar and operating the VHF radios. The vessel was in hand steering. The Master gave helm orders to the rating at the wheel.

.5 The Master, Second Officer and rating reported that they had obtained sufficient rest prior to their periods of duty. The Master had been on duty from 1930, 11th August, until the ship was anchored at 2235, 11th August and from about 0430 (30 minutes before completion of bunkering) until the time of the collision.

1.3.2 Torm Gertrud

.1 The *Torm Gertrud* had a complement of officers and crew in compliance with the requirements of the ship's Safe Manning Document. The ship's Master and officers were Danish and Faroese, and the remainder of the crew were Philippine nationals.

.2 The navigational crew on board *Torm Gertrud* consisted of the Master, Chief Officer, First Officer and Second Officer. All were experienced seafarers and were holders of appropriate certificates of competency. The Master had served at sea as Master of a tanker since 1999. The navigational officer of the watch on duty at the time of the incident was the Chief Officer who had been employed by Torm A/S since 2001 and qualified as Master in 1998.

.3 The Master had been Master of *Torm Gertrud* since April 2005, working "back to back" with another Master and had completed bunker operations and launch transfers in the Bay of Gibraltar on previous occasions on both the Algeciras and Gibraltar sides of the Bay.

.4 The Master had left the bridge shortly before the collision occurred so that, at the time of the collision, the Chief Officer was in charge on the bridge. The ship was in auto steering and the duty rating was keeping a lookout.

.5 The Master, Chief Officer and rating on duty at the time of the collision reported that they were well rested prior to their periods of duty. This is confirmed by the Records of Hours of Work & Rest held on board.

.6 Shortly after the collision, the Master and Chief Officer were tested for alcohol consumption. The tests proved negative and the results were certified by a Medscreen Authorising Scientist.

1.4 NAVIGATIONAL EQUIPMENT

1.4.1 New Flame

.1 The bridge equipment on board the *New Flame* complied with the requirements of SOLAS for a vessel of her size and included two ARPA radars sited one on either side of the steering console, adjacent to VHF transceivers.

.2 An AIS receiver was fitted adjacent to the chart table, at the rear of the wheelhouse. This was not integrated with any other bridge equipment, nor was it required to be. The AIS transmission did not include the required heading data.

.3 Charts used for the approach to Gibraltar were BA 3578, 1448 and 144. Chart BA 1448 in use was an out of date edition. Recent chart corrections had not been made.

.4 The ship was being steered manually and the navigation lights for a vessel of her size were being shown.

.5 The ship was not fitted with a Voyage Data Recorder (VDR), nor was it required to be.

1.4.2 Torm Gertrud

.1 The bridge equipment on board the Torm Gertrud complied with the requirements for bridge equipment for a vessel of her size and included an ECDIS system integrated with AIS and the ARPA radar.

.2 The ECDIS displayed the electronic chart for the area. In addition, UKHO paper charts were also being used. Charts used for the approach to Gibraltar were BA 3578, 1448 and 144. The paper charts in use had been corrected to Notice to Mariners Week 26 2007, but the electronic chart had not been corrected to the same Notice to Mariners.

.3 Radar information from the ARPA radar and AIS text information could also be displayed on the ECDIS.

.4 In addition, a slave radar display and additional EDIS display were mounted adjacent to the chart table.

.5 The ship was being steered by autopilot and the navigation lights for a vessel of her size were being shown.

.6 The ship was not fitted with a VDR, nor was she required to be. A VDR system had been supplied to the ship and placed on board in readiness for installation at the next dry-docking.

1.5 LOOKOUT

.1 The regulations concerning the keeping of a proper lookout are given in the International Regulations for Preventing Collisions at Sea, Rule 5 and in the Code of Standards of Training and Certification of Watchkeepers 1995 (STCW 95).

COLREGS ***Rule 5 – Look-out***

Every vessel shall at all time maintain a proper look-out by sight and hearing as well as all available means appropriate in the prevailing circumstances and conditions to make a full appraisal of the situation and the risk of collision

STCW 95 Section A-VIII/2 Part 3-1 reinforces the requirements of COLREGS. Section 16 states in part:

"In determining that the composition of the navigational watch is adequate to ensure that a proper look-out can be continuously maintained, the master shall take into account all relevant factors, including those described in this section of the Code, as well as the following factors:"

".11 the size of the ship and the field of vision available from the conning position"

.2 The *New Flame* was a geared bulker with four pedestal cranes along the centreline of the ship. From the conning position at the centre of the wheelhouse, with the cranes in line, there was a blind sector from ahead to 3º on either side of ahead. From a position 2 metres to starboard of the conning position, the blind sector was from ahead to about 8º to port. Similarly, from 2 metres to port of the conning position, the blind sector was from ahead to about 8º to starboard.

.3 The look-out duties on the *New Flame* were performed by the Master, who alternated between the conning position and the starboard radar, and Second Officer, who alternated between the port radar and the chart room. The navigation watch-rating was steering the ship.

.4 The *Torm Gertud* was a tanker with the wheelhouse situated aft. There were no obstructions forward of the beam to interfere with keeping a visual lookout.

.5 The navigation watch rating on the Torm Gertrud was appointed as a dedicated look-out.

1.6 VHF RADIO

.1 Both ships were fitted with AIS, so the names and call signs of both vessels were available to each other before the collision.

.2 VHF transmissions recorded of by Algeciras Traffic indicate that neither ship attempted to contact the other by VHF on Channel 16 until immediately prior to the collision when the New Flame called:

> "*Gertrud, New Flame. Gertrud, New Flame.* I turning to port"

1.7 SIGNALS

1.7.1 Manoeuvring and warning signals

.1 Rule 34(d) of the COLREGS states:

"When vessels in sight of one another are approaching each other and from any cause either vessel fails to understand the intentions or actions of the other, or is in doubt whether sufficient action is being taken by the other to avoid collision, the vessel in doubt shall immediately indicate such doubt by giving at least five short and rapid blasts on the whistle. Such signal may be supplemented by a light signal of at least five short and rapid flashes"

1.7.2 Signals to attract attention

.1 Rule 36 of the COLREGS states, in part:

"If necessary to attract the attention of another vessel any vessel may make light or sound signals that cannot be mistaken for any signal authorised elsewhere in these Rules, or may direct the beam of her searchlight in the direction of the danger, in such a way as not to embarrass any vessel"

.2 Neither ship attempted to attract the attention of the other by light or sound. The Master of the *New Flame* saw what he thought was a white light flash twice from the *Torm Gertrud*. This was at about the time that deck lights were turned on while two of the crew of the *Torm Gertrud* were on deck to rig a ladder.

1.8 ENVIRONMENTAL CONDITIONS

.1 At the time of the accident the wind was Westerly force 4 to 5 with moderate sea. The visibility was good. Predicted tides for Gibraltar Port indicated a High Water of 0.86 m at 0340 LT

.2 In the absence of strong winds, a weak current is reported to set southwards off the east side of Gibraltar, turning WSW round Europa Point

towards Punta Canero and then clockwise around the Bay. However, currents and tidal streams may be modified by strong winds, particularly from the east and west. With strong west winds, the existing clockwise circulation may be strengthened, resulting in the southerly set off Gibraltar Harbour increasing to 1 knot or more
(Refer Admiralty Sailing Directions NP 67)

.3 The current on the east side of the Bay set south 2 hours after high water.
(Refer British Admiralty Chart 1448)

.4 There is a resultant current to the east outside of Europa Point, which lasts from half an hour to 4 hours after high tide. The speed and direction of the wind has a considerable effect on the current.
(Refer Spanish Sailing Directions Num.3 Part 1)

.5 On a clear night when approaching the Bay of Gibraltar, lights from the urban concentration of the towns of Algeciras and San Roque, the working lights of container, ferry and oil terminals, navigational lights, ships anchored and maneuvering in the Bay and the lights from the dense concentration of buildings on the west side of Gibraltar, all contribute to considerable back ground back scatter of lights.

.6 The following weather information was recorded at the meteorological station at Gibraltar Airport on 12th August 2007.

At 04:50 LT

Temperature:	22,0º
Humidity:	69%
Pressure:	1011 HPA
Wind:	Westerly at 4,6 m/sec (7,8 knots or Beaufort force 3)
Visibility:	9 miles

At 05:50 LT

Temperature:	22,0º
Humidity:	64%
Pressure:	1011 HPA
Wind:	South-westerly at 2,6 m/sec (3,9 kts or Beaufort force 2)
Visibility:	9 miles

.7 Weather forecast via NAVTEX, valid until 12/2400UTC, forecast westerly winds Force 3 increasing to 5 in the afternoon with seas smooth to slight.

.8 The wind recorded in the logbook of the *New Flame* was westerly, force 4-5, with rough seas.

1.9 NARRATIVE OF EVENTS

1.9.1 NARRATIVE OF EVENTS (ALL TIMES UTC + 2) based on interviews with New Flame's master and crew

.1 The *New Flame* was on a loaded passage from Bay Ridge Flats, New York, U.S.A. to Turkey. At 2215 on 11th August she embarked a pilot to enter Gibraltar waters and anchored approximately 3 cables off the South Mole at 2235 to load bunkers.

.2 During bunkering the Second Officer was on bridge watch-keeping duties from 0000 hrs on the 12th August. He remained on the bridge after bunkering operations were completed to enable the Chief Officer, who would normally come on watch at 0400, to take charge on the forecastle while the anchor was being weighed and to allow him to shower and change before taking up his duties on the bridge.

.3 Prior to weighing anchor, the Second Officer tested the bridge equipment and completed the SMS checklist. He informed Algeciras Traffic, at 0508, on VHF Ch 74, of the vessel's intention to weigh anchor and depart. Algeciras Traffic acknowledged the call and advised that the *Maersk Qatar* had a pilot on board and intended anchoring in the Bay. No other advice was given by Algeciras Traffic The *New Flame* did not contact Gibraltar Port Control, as the Master believed that this was not necessary.

.4 The Master was on the bridge from about 0430. Bunkering operations were completed at 0458 and the *New Flame* commenced heaving anchor at 0500. At this time the Master, Second Officer and a helmsman were on the bridge and the Chief Officer and bosun were on the forecastle.

.5 The anchor was aweigh at 0520 and the Master manoeuvred his ship passed two ships in the anchorage. Engines were on manoeuvring speed and steering was in manual with the helmsman on the wheel. At 0523 the engine was at dead slow ahead and then slow ahead, increasing to half ahead at 0528 and full ahead at 0532.

.6 The Master conned the ship from a position at the front of the wheelhouse, at the central gyro repeater. He alternated between this position and the radar. He also operated the bridge engine telegraph. The Second Officer was monitoring the radar and fixing the ship's position. All bridge and engine systems were working normally. Both steering motors were on. The port radar was in True motion mode, North-up display. The radars were switched between 3 and 6 mile ranges.

.7 The Master estimated that the tide / current in the anchorage was about 0.5 knots. Visibility was good, the wind westerly and the sea moderate.

.8 The Master's intention, following the planned track, was to pass close to the Gibraltar pilot boarding position before heading 143° to a waypoint approximately 1.2 miles bearing 195° from Europa Point light and then to alter

course to 084°. The manoeuvres in the anchorage resulted in the ship being further west than intended. This was confirmed by the position fixes on the chart at 0535 and 0540. The Master commenced a slow turn to port to make towards the waypoint south of Europa Point.

.9 After clearing the anchored vessels, at about 0535 and approximately abeam of the *Maersk Qatar*, the Master saw a ship about 2 points on the port bow showing a green sidelight and two mast headlights. He determined that it was a crossing situation, that the *New Flame* was the stand-on vessel and that the other vessel was the give-way vessel. The other vessel appeared to be passing close to Europa Point, so he expected the other ship to turn to starboard to enter the Bay. The ship was identified as the *Torm Gertrud* from the AIS receiver in the chartroom. He attempted to call the *Torm Gertrud* on the VHF but did not receive a reply. When first detected on the radar, the range was between 3 and 4 miles.

.10 At 0535 the Second Officer fixed the ship's position and then checked the port ARPA radar. He saw two vessels, the *Maersk Qatar* and an in-bound vessel at 2 miles range with a CPA of zero. When he was in the chartroom he saw the name *Torm Gertrud* on the AIS display. He then saw the ship, showing a green sidelight and two masthead lights at about 45° to port. He informed the Master.

.11 The Master remembers ordering the helmsman to steady the course on 160° to determine the intention of the *Torm Gertrud*. At this time he saw the *Torm Gertrud* flash a white light twice and thought that the *Torm Gertrud* was trying to attract his attention. He did not see or hear any other signals from the other ship and he did not attempt to make any sound or light signals. The *Torm Gertrud* was 20° to 25° off the port bow. Thereafter, the Master gave helm orders of 5° to 20°, and eventually hard to port, to keep the *New Flame* turning to port.

.12 The Second Officer fixed the position at 0540 and returned to the radar and saw that the collision warning alarm was flashing red. He informed the Master and noted at this time the target was about 1 mile away. He could see that she was still showing a green light about 30° to 35° to port. He attempted to call the *Torm Gertrud* on VHF channel 16, but received no reply.

(Transcripts of VHF communications, recorded by Algeciras Traffic during this period, indicate that no VHF calls were made by the *New Flame* until immediately prior to the collision.)

.13 After 0540 the Master continued the turn to port and felt that the *Torm Gertrud* had crossed ahead and was clear to starboard. However, he considered that the *Torm Gertrud* was very close and that to get away from her he needed to continue to turn to port.

(*ECDIS data indicates that the New Flame was on a steady course between 0542 & 0544, i.e. the turn was resumed at or after 0544)*

.14 The Master tried to call the *Torm Gertrud* again on VHF Ch 16 but without any response. After a few minutes, the Master saw a red light on the starboard side. He ordered the helmsman to put the wheel hard to port.

.15 At the time that the Master ordered hard to port, the Second Officer was standing at the radar and noted that the CPA was not changing and the collision alarm continued to flash. He looked out of the bridge window to see the lights of the *Torm Gertrud*. He could see the green side light and then the mainmast light and foremast light closing together, then both green and red lights and finally the red sidelight alone. Shortly afterwards the *Torm Gertrud* hit the *New Flame* on the starboard side, between 0549 and 0550.

.16 The Master called the *Torm Gertrud* on Ch 16 and asked them not to move and he called Algeciras Traffic to inform them of the collision. The Second Officer sounded the general alarm. Some time after 0600 the Master broadcast a Mayday message on VHF Ch 16.

.17 The ship started to trim by the head and to list to starboard. The Chief Officer and bosun went forward to sound the forward holds and spaces. Water was coming into No. 1 and No 2 holds. It was not possible to check the forepeak tank as the ship was trimming by the head. In the Master's opinion, the situation was made worse when the two ships separated. The Chief Officer started the ballast pumps, but the damage was too extensive to be able to overcome the ingress of water.

.18 The Master contacted the Company by satellite telephone to advise the DPA of the situation.

.19 The crew mustered at the port lifeboat and the lifeboat was launched after the Chief Officer attempted to reduce the list by pumping ballast to the port side. All the crew disembarked, except the Chief Officer, who remained on board with the Master.

.20 The Master contacted the Company again and was advised that, if the water reached No 3 hold, with the increasing list, that he would have to leave the ship.

.21 The Chief Officer secured a line from aft to the tug "Sunswale".

.22 The Master and the Chief Officer disembarked into a rescue launch at about 0750.

1.9.2 NARRATIVE OF EVENTS (ALL TIMES UTC + 2) based on interviews with Torm Gertrud's master and crew

.1 On 12th August 2007, the *Torm Gertrud* was fully loaded, on passage from Sicily, bound towards the USA, with a planned off-port limits call off Algeciras to disembark a crewmember. The passage plan included a rendezvous with a launch in a position 2.5 n.mile southwest of Europa Point, passing 1 n.mile south of Europa Point. On reaching the RV position, the plan was to turn to

the south, to give the launch a lee from the westerly wind. On completion of the transfer, the ship would then continue on a southerly course to join the Tarifa Traffic Separation Scheme, to continue the voyage out into the Atlantic.

.2 The Chief Officer and navigation watch rating started their bridge watch duties at 0400. At that time the visibility was good and there were not many ships in the vicinity. Navigational equipment was working normally, the 3cm radar was in relative motion mode, on 3 miles range, offset, with speed input from the log to give water track. The 10cm radar was set on 6 miles range. Steering was by autopilot.

.3 Before taking over the watch, the Chief Officer read the Master's Night Orders and noted that he was to call the ship's Algeciras agent at 0415 and the Master at 0440.

.4 At approximately 0500 the Master came on to the bridge. Shortly afterwards the Chief Officer altered course to starboard for a small vessel that the *Torm Gertrud* was overtaking and then resumed course when the *Torm Gertrud* was passed and clear.

.5 The Master took charge on the bridge at 0530. The Chief Officer remained on the bridge and fixed the ships position at 0533 on the paper chart. The speed was about 13.5 knots.

.6 As the *Torm Gertrud* approached Gibraltar it was possible to see a number of ships at anchor, a large number of shore lights and there was a lot of radio traffic on the VHF.

.7 At about 0530 the lookout called the bosun and day-worker by telephone to rig a ladder for the crew change off Algeciras. The bosun and day-worker went on deck between 0540 and 0545. Deck lights on the port side were switched on for their safety.

.8 Between 0535 and 0540 the Master received a call from the agents on VHF requesting some documents to be landed during the crew transfer. At about 0540, the Master initiated the engine controls to reduce from sea speed to manoeuvring speed, handed over the watch to the Chief Officer and left the bridge to go to his office to prepare the papers.

.9 The Chief Officer took over the watch again at 0540 and checked the radar and ECDIS. At this time he saw the *New Flame* on the ECDIS AIS but it was not yet on the radar. The *New Flame* was two to three points to starboard with a CPA of 0.2 to 0.3 miles. Very soon afterwards he saw the *New Flame* on the radar and began plotting her. The CPA was 0.3 miles. He was able to see the *New Flame* visually and saw her red sidelight approximately two points to starboard.

(Data recorded on the *Torm Gertrud* indicates that radar CPA at 0540 was 0.1 n.miles and at 0545 was 0.3n.miles.)

.10 The Chief Officer fixed the ship's position at 0544 on the paper chart, by range and bearing to Europa Point. At this time he noted that the *New Flame's* bearing was changing to port. The ARPA radar also indicated that the *New Flame* had changed course from 160° to 150°. The ARPA indicated that the *New Flame* would still pass ahead. To increase the CPA, which was now 0.2 n.miles, he altered course to starboard by approximately 5°. He may also have made a further small alteration to starboard shortly afterwards. He watched the *New Flame* pass ahead until the *New Flame's* red sidelight was about ½ to 1 point on the *Torm Gertrud's* port bow. He considered that risk of collision was over at this time.

.11 The lookout reported a ship on the starboard side showing a red light about 3 points to starboard at some time between 0540 and 0545. The Chief Officer acknowledged the report. A few minutes later the lookout saw the ship about ½ point to starboard and he watched it cross ahead of the *Torm Gertrud* and until he was able to see her red light on the port side of the *Torm Gertrud's* bow. He then stopped looking at the ship and concentrated on keeping a lookout towards Algeciras and Gibraltar.

.12 After the *New Flame* had crossed the *Torm Gertrud's* bow, the Chief Officer went to the bridge engine control to see if the engine revolutions had decreased to the optimum for manoeuvring. The reduction sequence was not complete, but was very close to the required revolutions. At about this time, he changed one of the VHF transceivers to channel 74 to be able to contact Algeciras Port.

.13 While he was doing this, the Chief Officer heard a ship call on the VHF, saying that she was turning to port. He could not recall the exact words and he could not be sure what ship had made the transmission, nor could he say to which ship the message was addressed. He looked ahead and saw a mast light and a green side light about 1 to 2 points on the port bow, crossing very close ahead, from port to starboard. He estimated that it was only 1 to 3 cables from the *Torm Gertrud*. He realised immediately that a serious situation was developing and went straight to the steering stand to change to hand steering to put the wheel hard to starboard. He ordered the lookout, who had been on the starboard side of the bridge, to take the wheel and go hard to starboard.

.14 The Master returned to the bridge just in time to hear the Chief Officer giving the hard to starboard helm order and to see the other ship's masthead lights move across the *Torm Gertrud's* bow, from the port to starboard. Within a few seconds the *Torm Gertrud* struck the *New Flame* forward of midships, at an estimated angle of 90°.

.15 The Master ordered stop the engines and took over control on the bridge. He called the *New Flame* on the VHF. The master of the *New Flame* requested that the *Torm Gertrud* to stay where she was. The Master of *Torm Gertrud* confirmed that *Torm Gertrud's* engines were stopped and that he would not move. He contacted Algeciras Traffic to report the collision. There

had been no acknowledged communications between the *Torm Gertrud* and the *New Flame* before the collision.

.16 The Master heard the *New Flame* sending a Mayday message on VHF channel 16 about 15 minutes after the collision. There were already boats near to the *New Flame* at that time. He felt that the *New Flame* has sufficient assistance and believed that, given the nature of the *Torm Gertrud's* cargo, his best course of action for the safety of both ships was to ensure the integrity of the *Torm Gertrud*, follow the ship's emergency procedures and ensure that there was no possibility of pollution, gas leak or risk of ignition of the cargo.

.17 The two ships drifted apart after about 20 minutes. About three hours later the *Torm Gertrud* received permission to anchor off Algeciras. The inspection of the *Torm Gertrud* indicated that the ship's condition was such that it was safe for her to proceed to anchor under her own power. An Algeciras pilot boarded and anchored the ship on the west side of the Bay. Later that day the ship was moved again to a more sheltered anchorage in the north of the Bay.

.18 At 1030, 12th August, the Master and the crew on the bridge at the time of the collision were tested for alcohol. The tests proved negative and the results were certified by a Medscreen Authorising Scientist.

1.10 PILOTAGE

.1 Pilotage is not compulsory for vessels departing from Gibraltar anchorage or for off-port limits operations.

1.11 PORT CONTROL

.1 There is no formal co-operation or exchange of information between the ports of Algeciras and Gibraltar.

1.11.1 Gibraltar Port Control

.2 The GPA operations office is manned 24 hours a day, 7 days a week, on a rotational basis by one port operative, assisted as necessary by other port personnel on duty.

.3 The Port has a vessel monitoring system based on AIS and radar information received at the GPA operations and from the MOD Maritime Data Centre, Windmill Hill.

.4 An alternative AIS system, independent of the Maritime Data Centre is also available in the operations room.

.5 It is a requirement of the port that vessels contact Gibraltar Port Control by VHF prior to weighing anchor and departing from the Bay. Advance notice of movements of ships bound to Gibraltar is provided to the Port by the ship's agents.

.6 At the time of the accident, two ships, *Maersk Qatar* and *Europa Supplier*, were anchored in an area off Europa Point where anchoring is prohibited. The *Maersk Qatar's* anchor position was to the south and east of Europa Point.

.7 The *New Flame* reported to Algeciras Traffic before departure, weighed anchor and departed the anchorage without contacting Gibraltar Port Control.

1.11.2 Algeciras Port Control

.1 Port control for Algeciras is maintained at the Algeciras Traffic Control tower and includes the Algeciras Maritime Rescue Coordination Centre (MRCC).

.2 The tower is normally manned 24 hours a day, 7 days a week, by 2 control officers working on 8 hours shifts. In addition, from Monday to Friday, there are 3 additional personnel attending administrative and management duties at the Control Centre.

.3 The control tower is fitted with the following equipment:

Radar systems with VTS display
Fixed Marine VHF radio transceivers integrated to the VTS system
Mobile VHF radio transceivers
MF radio transceiver
VHF transceiver on air-navigation band
Radio Direction finder
CCTV cameras for security monitoring of port facilities at Algeciras Port
AIS independent of the VTS system
Multimedia recording equipment for the VTS system
Audio recording equipment for VHF and telephone communications

.4 The VTS is based on the radar systems. The radar equipment assigns an identifying code to a target detected by the radar until the operator modifies it manually. When a vessel contacts the centre and supplies data confirming its position, the operator substitutes the given code with the name of the vessel

.5 The radar and AIS equipment are not integrated.

.6 The audio recording equipment records the conversations from VHF channels 16, 74, and 67, and from the main telephone line of the MRCC-Algeciras. The recording equipment is activated by VHF transmissions. Each transmission is recorded individually as an audio file, which is tagged with date-time-VHF channel (or telephone extension).

.7 Reporting by VHF is compulsory for ships entering and leaving Algeciras Port and for ships engaged in off-port limits operations close to port limits.

SECTION 2 - ANALYSIS

2.1 AIM

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

2.2 FATIGUE

.1 Fatigue does not appear to have been an issue in this incident. Both ships operated a 4 on 8 off watch-keeping regime, which enabled OOWs to be sufficiently rested before taking charge of a watch. However, the Master of the *New Flame* had been on duty from 1930, 11th August, until the ship was anchored at 2235, 11th August and from about 0430 until the time of the collision. It was not possible to verify hours worked by the Master immediately before the 11th August. At the time of the investigation the most recent records of hours of work and rest on board the *New Flame* available were for the month of July.

2.3 COLREGS & ELECTRONIC AIDS TO NAVIGATION

.1 The *Torm Gertrud* was fitted with an ECDIS display that was capable of recording radar and AIS data. It was possible to re-play the events leading up to the collision. This data was time tagged. All other times were adjusted to this time frame.

.2 On the bridge of the *New Flame*, the AIS display is positioned on the chart table, remote from the radar displays and VHF transceivers. The AIS may be considered to be an aid to collision avoidance as well as ship identification and would be best sited close to the main collision avoidance aid, the radars thus reducing the chance of confusion in ship identification.

.3 Both vessels are power driven vessels and were underway and were in sight of one another from about 0540. **Section II – *Conduct of vessels in sight of one another*** therefore applied.

> **Rule 5 *Lookout*** -
>
> ***Every vessel shall at all time maintain a proper look-out by sight and hearing as well as all available means appropriate in the prevailing circumstances and conditions to make a full appraisal of the situation and the risk of collision***

.4 Both vessels were keeping a visual look-out. The navigational watch rating on the *Torm Gertrud* was appointed as a dedicated look-out. The Master and Second Officer of the *New Flame* shared the visual look-out duties.

Both vessels were monitoring radar and AIS information (Chief Officer on the *Torm Gertrud* and Master & Second Officer on the *New Flame*). The Chief Officer on the *Torm Gertrud* was able to compare radar and AIS data on the ECDIS display. The *New Flame* AIS display was situated adjacent to the chart table at the rear of the wheelhouse. It was necessary for the *New Flame's* Second Officer to move between the radar and the chart table to compare data.

.5 The ability to keep a visual lookout on the *New Flame* was impaired by the ship's cranes.

Rule 7 ***Risk of collision.***
In part

- ***(a) Every vessel shall use all available means appropriate to the prevailing circumstances and conditions to determine if risk of collision exists. If there is any doubt such risk shall be deemed to exist.***
- ***(d) In determining if risk of collision exists the following considerations shall be among those taken into account:***
  - ***(i) such risk shall be deemed to exist if the compass bearing of an approaching vessel does not appreciably change***
  - **(ii)** ***such risk may sometimes exist even when an appreciable bearing change is evident, particularly when approaching a very large vessel or tow or when approaching a vessel at close range.***

.6 Both vessels were using radar and AIS to determine risk of collision. Both vessels were aware that a risk of collision existed and that the CPA was very small. The Chief Officer of the *Torm Gertrud* initially noted that the *New Flame* AIS indicated a CPA of about 2 cables, with the *New Flame* passing ahead, and confirmed this with the ARPA radar. He also visually checked by observing the lights of the *New Flame* against a fixed point on the *Torm Gertrud*. He noted that the bearing was closing, indicating that the *New Flame* would pass ahead. The Second Officer of the *New Flame* noted that the ARPA radar indicated that the CPA on the ARPA was zero and advised the Master accordingly.

Rule 15 ***Crossing Situations.***

When two power driven vessels are crossing so as to involve risk of collision, the vessel which has the other on her own starboard side shall keep out of the way and shall, if the circumstances of the case admit, avoid crossing ahead.

.7 The *New Flame* was on the starboard side of the *Torm Gertrud*, crossing from starboard to port. *Torm Gertrud* was thus the give-way vessel.

Rule 16 ***Action by give-way vessel.***

.8 Rule 16 required that the *Torm Gertrud* take ***early and substantial action*** to keep well clear.

.9 This is further reinforced by **Rule 8 –** ***Action to avoid collision***

(a) Action taken to avoid collision should be positive, in ample time and with due regard to good seamanship.

(b) Alterations of course and / or speed should be large enough to be readily apparent to another vessel observing visually or by radar; a succession of small alterations should be avoided.

(c) If there is sufficient sea room, alteration of course alone may be the most effective action to avoid a close quarters situation provided it is made in good time.

.10 The *Torm Gertrud's* option to alter to starboard may have been constrained by the proximity of Europa Point and the *Maersk Qatar*, which was anchoring off Europa Point. Even so, at 0545 a large alteration to starboard should have been possible and this would have put the *New Flame* on the port bow of the *Torm Gertrud* with an increased CPA. A large alteration would have been more evident to the *New Flame*, both visually and by radar.

.11 Alternatively, the *Torm Gertrud* could have reduced speed. At about 0530 the Master of the *Torm Gertrud* activated the engine management system to reduce speed in preparation for manoeuvring at the RV position for the personnel transfer. This action resulted in the management system very gradually reducing the engine speed automatically to manoeuvring speed. During this process, the system does not prevent the officer of the watch from reducing engine speed using the bridge telegraph if necessary.

.12 The Chief Officer of the *Torm Gertrud* was aware that a risk of collision existed at 0540 but made no attempt to make a substantial alteration of course or speed.

.13 The *Torm Gertrud's* SMS states that, in open waters, a minimum CPA of 1 n.mile should be maintained and in congested waters, the CPA may be less than 1 n.mile, but should still be a safe distance.

.14 The Chief Officer of the *Torm Gertrud* was aware that the *New Flame* was on his starboard side and that the ARPA indicated a CPA of 3 cables, i.e. approximately three ship lengths, passing ahead. This should not have been construed as a safe distance.

.15 At 0542 a small vessel passed close to the *New Flame* and ECDIS data indicates that there was target swap between the two vessels such that, for a short time, the radar CPA for the *New Flame* appeared to be greater than it actually was (radar CPA 1.49 n.miles, TCPA 15 minutes as opposed to AIS CPA 0.2 n.miles, TCPA 8 minutes). This erroneous information may have influenced the *Torm Gertrud's* Chief Officer's decision making with regard to altering course to avoid a collision.

.16 At approximately 0545 the *Torm Gertrud* altered course, from 263º to 272º, and shortly after to 275º and then to 284º, contrary to Rule 16(b).

Immediately prior to the collision, the *Torm Gertrud's* Chief Officer ordered hard to starboard.

Rule 17 ***Action by stand-on vessel*****.**

(a) (i) Where one of two vessels is to keep out of the way the other shall keep her course and speed.

(ii) The latter vessel may, however, take action to avoid collision by her manoeuvre alone, as soon as it becomes apparent to her that the vessel required to keep out of the way is not taking appropriate action in compliance with these Rules

Rule 17(c) A power driven vessel which takes action in a crossing situation in accordance with subparagraph (a)(ii) of the Rule to avoid a collision with another power-driven vessel shall, if the circumstances of the case admit, not alter course to port for a vessel on her own port side.

.17 The Master of the *New Flame* considered his ship to be the stand-on vessel in a crossing situation. After leaving her anchored position, *New Flame* gradually turned to port to make for her planned waypoint and gradually increased speed up until the time of the collision, contrary to Rule 17(a). The Master of the New Flame, when interviewed, said that, after clearing the other ships at anchor, he turned his ship to port. He said that he continued the turn except for a few minutes when he steadied up on a course of about 160° to check the approach of the *Torm Gertrud.* The course recorder trace supports this statement, indicating that between approximately 0540 and the time of the collision, the ship was continually turning, except for two short periods when the ship was steadied up on headings of about 155° and 125°.

.18 The *New Flame* AIS was not transmitting heading data, but was transmitting CoG data. This indicated that, immediately prior to the collision, the *New Flame* was making good 125° at 0547, 113° at 0548 and 106° at 0549. The *New Flame* course recorder confirms that, apart from the two short intervals when the ship was steadied up, the *New Flame* was continuously turning to port.

.19 Immediately prior to the collision, the Master of the *New Flame* ordered hard to port.

.20 The *New Flame's* SMS states that every endeavour should be made to pass vessels at as safe a distance as possible in the circumstances.

.21 The *New Flame* crossed ahead of the *Torm Gertrud* between 0547 and 0548. In the few minutes prior to this, there seems to be some confusion on the bridge of the *New Flame* with regard to the position of the *Torm Gertrud*.

.22 This may have been due to blind sectors caused by the cranes and the presence of the lights of the *SKS Tugela*. In those last few minutes, the Master of the *New Flame* may have misidentified the lights of *SKS Tugela* as those of the *Torm Gertrud*. The lights would have appeared to be steady,

nearly ahead, and he continued to turn to port to get clear, causing the *New Flame* to turn back across the course of the *Torm Gertrud*.

2.4 PASSAGE PLANNING

.1 The principles to be observed in voyage planning are contained in IMO Resolution A893(21) and STCW95 A-VIII/2 Part 2.

2.4.1 Torm Gertrud

.1 Ship-to-ship and launch-to-ship transfers at sea are a common occurrence, both off Gibraltar and Algeciras. Limitations on these operations are related to the:

sea room available in relation to navigational hazards,
water depth, the degree of exposure to sea and weather conditions,
the strength and direction of the wind,
the proximity of other vessels and tidal and current streams and
the handling characteristics of the vessels involved.

.2 In particular, for safe personnel transfers, the larger vessel must provide a suitable lee to enable the operation to be completed safely. All of the above factors must be taken into consideration when planning such operations, particularly when the operation takes place in close proximity to the coast.

.3 The position for the rendezvous with the launch off Algeciras was based on previous experience of the Master when conducting similar operations off Algeciras, and the common practice of the port.

.4 The section of the passage plan relating to the approach to Algeciras and the proposed launch transfer consisted of a list of waypoints and information regarding contact with Tarifa Traffic. The plan did not include information regarding communication with Gibraltar Port, Algeciras Port or the Algeciras agent's launch, tide or current information for the Bay or planned minimum clearing distances off Europa Point or Punta Canero.

.5 The course to arrive at the RV position passed 1 n.mile off Europa Point. While there may have been sufficient sea room if there had been no traffic, in exercising prudence and good seamanship, the *Torm Gertrud's* Master should have prepared a passage plan taking into consideration the possibility of traffic movements in the approaches to the Bay of Gibraltar and the proximity of Europa Point.

.6 In particular, he should have considered the probability of being the give-way vessel for crossing vessels leaving the Bay, which would require turning to starboard or reducing speed for collision avoidance.

2.4.2 New Flame

.1 The New Flame passage plan commenced at the ship's anchored position in the Bay. This plan included a waypoint at the boarding position for Gibraltar

pilots on the charts in use, despite not having a pilot on board and despite the reasonable expectation that vessels in-bound for Gibraltar would be heading for this position. The pilot boarding position had in fact been changed in Notice to Mariners Week 26, 2007. This correction had not been made to either of the two charts in use.

.2 Three sets of courses and two anchor positions were drawn on the ship's charts, BA 144 and BA 1448, for the departure from the anchorage. Immediately on weighing anchor it was not possible to steer any of the charted courses to the waypoint, due to the position of anchored vessels in the vicinity.

.3 After clearing the anchored vessels, the *New Flame* commenced a gradual turn to port to make for the waypoint approximately 1.2 n.miles south south west of Europa Point.

.4 A waypoint so close to Europa Point when intending to proceed eastward ignores the distinct possibility of meeting west-bound vessels proceeding to Gibraltar and Algeciras.

.5 It would have been more prudent to continue on a southerly course before turning to the east. The main flow of traffic westbound for the Straits of Gibraltar is between 4 and 5 n.miles south of Europa Point so that a waypoint 2 to 3 n.miles south of Europa would not involve meeting vessels heading for the Atlantic.

2.5 BRIDGE RESOURCE MANAGEMENT

.1 The principles to be observed in bridge resource management are contained in STCW95 B-VIII/2 Part 3. Further guidance is contained in IMO Circ 265 and the International Chamber of Shipping publication: ICS Bridge Procedures Guide.

.2 In essence, bridge resource management is the efficient deployment of all available resources to safely carry out a task. A major element in bridge resource management is maintaining a high level of situational awareness. Situational awareness means having an accurate perception of the factors and conditions that affect a vessel and its crew over a given period of time. In simpler terms, it means knowing what is happening around you.

.3 Both vessels failed to adequately monitor the movement of the other vessel until they were passed and clear of each other.

2.5.1 New Flame

.1 Safe completion of a voyage depends on the level of situational awareness of the person who has the conduct of the vessel. It is essential that the bridge team in place provides the necessary support to the person in charge and maximizes that person's situational awareness.

.3 The *New Flame* crossed clear ahead of the *Torm Gertrud* but then continued to turn to port so that the *New Flame* turned back into the path of the *Torm Gertrud*. If the Master of the *New Flame* had been aware of the relative positions of the *New Flame* and *Torm Gertrud* he would not have continued to turn to port.

.4 His action suggests that he had misidentified the lights of the *SKS Tugela* when she was nearly ahead, and assumed that these were the lights of the *Torm Gertrud*.

.5 Various course options from the anchored position to the waypoint east of Europa Point were drawn on BA chart 144 and BA chart 1448, but the courses on BA 1448 were not the same as those on BA 144. This, combined with the poor navigation practise of failing to transfer positions when changing from one chart to another, may have also added to poor situational awareness.

.6 Inadequate bridge resource management resulted in the *New Flame* not keeping a proper visual lookout. The *New Flame's* Master and OOW were both engaged in tasks other than keeping a constant visual look out. The duty navigational watch rating was steering the ship.

.7 Information provided to the Master of the *New Flame* by the OOW from the AIS may have been ambiguous, resulting from poor correlation between the AIS data and the radar information due to the AIS display being remote from the radar displays.

.8 Information provided by the radars and AIS, combined with information that would have been provided by a dedicated lookout, should have allowed the Master to have a better appreciation of the situation around him.

2.5.2 Torm Gertrud

.1 The Master of the *Torm Gertrud* had taken over the watch from the Chief Officer so that the bridge team consisted of Master, Chief officer and lookout. However, the Master subsequently left the bridge to attend to an administrative task.

.2 By leaving the bridge, the Torm Gertrud's Master did not ensure that an effective bridge management team was in place at a critical period during the approach to Gibraltar Bay.

.3 After the *New Flame* crossed ahead of the *Torm Gertrud*, the *Torm Gertrud's* Chief Officer became involved in tasks other than monitoring the *New Flame* and the *Torm Gertrud's* lookout concentrated on keeping a lookout to starboard.

.4 By focussing their attention away from the ship that had just passed close ahead of them, the Chief Officer's situational awareness was reduced and he was unable to react to the dangerous situation that was developing ahead.

2.6 ONBOARD RESPONSE

.1 Following the accident, both Masters implemented procedures outlined in the emergency guidelines contained in the ships' ISM SMS, including communications and co-operation with the Gibraltar Port Authority, Algeciras Port Authority, Gibraltar Maritime Administration, and the ships' operating companies' Emergency Response Teams.

.2 The Master and Chief Officer of the *New Flame* ensured the safety of the *New Flame's* crew by ordering abandon ship and supervising the disembarkation of the crew.

.3 They then remained on board for a further hour to try to save the ship and to make a line fast to a tug.

.4 The Master of the *Torm Gertrud*, when he was sure that sufficient aid was available to ensure the safety of the *New Flame's* crew, prudently kept his ship clear of the *New Flame* until he had established that his ship's cargo did not present a danger to other ships or the environment.

.5 He subsequently anchored his ship in the comparative shelter of the Bay of Gibraltar to enable further inspections and repairs.

2.7 PILOTAGE

.1 The Bay of Gibraltar is one of the busiest and most congested anchorages in the Mediterranean. Tidal movement is un-predictable and there are many shipping movements.

.2 Pilotage in-bound is compulsory but not out-bound, yet in many circumstances it is more difficult to leave the Bay than it is to arrive. Immediately after weighing anchor, until power and speed are developed, a ship will be at its least manoeuvrable condition.

.3 Pilots are available for departing the anchorage, on request and at the discretion of the Master. The Master of the *New Flame* did not request a pilot for departure.

.4 Few masters will have extensive experience in manoeuvring in such confined situations and even fewer will have in-depth knowledge of local conditions.

.5 The presence of a pilot on board the *New Flame* could have made a significant contribution to the bridge team, providing local knowledge, ship handling expertise, communication skills and additional visual lookout.

2.8 GIBRALTAR and ALGECIRAS PORTS

.1 Gibraltar is the busiest bunker port in the Mediterranean has become a major cruise port and has a busy trade in servicing ships both in the anchorage, off-port limits and on the eastern side of Gibraltar. This, combined with Algeciras' ferry terminal, expanding container terminal and oil terminal, makes the Bay of Gibraltar an extremely busy place to operate ships. The existing facilities for the control of shipping at the GPA are inadequate for a port as busy as Gibraltar.

.2 The GPA does not currently provide a navigational assistance service to assist on-board navigational decision-making and therefore was unable to assist in avoiding the collision.

.3 The Port of Algeciras maintains a VTS based on a radar system for all vessels in the Spanish territorial waters of the Bay of Gibraltar. Data collection and monitoring by this service includes all of the Bay of Gibraltar but intervention by Algeciras Traffic for situations occurring in the territorial waters of Gibraltar is not normal practice

.4 There is no formal exchange of information between Algeciras Traffic and Gibraltar Port Control.

.5 It is a requirement of the GPA that all vessels contact GPA by VHF before weighing anchor prior to departure. On this occasion, the Master of the *New Flame* did not contact GPA before departure, but did contact Algeciras Port Control. He was advised that the *Maersk Qatar*, with a pilot on board, was approaching to anchor. He was not informed of the approach of the *SKS Tugela*, in-bound to the pilot boarding position. At the time of contact with Algeciras, the Algeciras VTS display had not identified the *SKS Tugela.* However, the Gibraltar Port operator was aware that the *SKS Tugela* was approaching to board a pilot and, under normal circumstances, would have informed the Master of the *New Flame* of this situation. The pilot was scheduled to transfer from the *Maersk Qatar,* when she had anchored, to the *SKS Tugela*.

.6 Following the collision, response by GPA & APA was rapid and resources were mobilized very quickly, including rescue craft and tugs from both authorities, the Royal Gibraltar Police & Gibraltar Services Police. The presence of one of the Gibraltar Pilots launches with a pilot on board, close to the scene, was of considerable benefit at the initial stages of the emergency.

SECTION 3 – CONCLUSIONS

3.1 SAFETY ISSUES

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

.1 A close quarters situation was allowed to develop, even though early action to prevent this could have been taken by the give-way vessel. (2.3)

.2 The stand-on vessel did not maintain her course and speed, despite being aware that she was the stand-on vessel in a crossing situation. (2.3)

.3 Appropriate action was not taken when it became apparent that the action of one of the vessels alone would not prevent the occurrence of a collision. (2.3)

.4 Neither of the two vessels communicated their intended actions to the other. (1.6 1.7)

.5 Neither of the two vessels adequately monitored the movement of the other vessel or the effect of their own manoeuvres (2.5)

.6 Over reliance on electronic aids. (2.3 2.5)

.7 Poor visual lookout. (1.3 1.5 2.3 2.5)

.8 Poor bridge resource management (2.5)

.9 Inadequate passage planning (2.4)

.10 In-appropriate siting of an AIS display. (2.3)

.11 The constraints imposed by vessels anchored in the Bay of Gibraltar. (1.11.1 2.3)

.12 The limitations of the shore based facility for the provision of navigational assistance. (1.11.28).

.13 There are no formal procedures for the exchange of information between GPA and Algeciras Traffic (1.11 2.8)

.14 The attendance of a pilot for ships out-bound from the anchorage is at the discretion of the Master. (1.11 2.8)

SECTION 4 – RECOMMENDATIONS

Safety recommendations shall in no case create a presumption of blame or responsibility

The owners / operators of *New Flame* are recommended to:

1. Review the operational procedures of the Safety Management System Manual to establish clear instructions that promote safety of navigation and the environment and, through appropriate supervision, ensure that the operational procedures are complied with. In particular, the following should be addressed:

    .1 Maintaining a proper lookout at all times, including advice and information regarding limitations to visibility due to the ship's structure and equipment.

    .2 The provision of effective bridge resource management

    .3 Effective passage planning

2. Complete an assessment of the siting of AIS display in relation to other collision avoidance equipment.

The owners / operators of *Torm Gertrud* are recommended to

1. Review the operational procedures of the Safety Management System Manual to establish clear instructions that promote safety of navigation and the environment and, through appropriate supervision, ensure that the operational procedures are complied with. In particular, the following should be addressed:

    .1 The provision of an effective bridge team at all times, appropriate to the intended operation.

    .2 The limitations of electronic navigation equipment and the dangers of over-reliance on such systems for collision avoidance.

    .3 Effective passage planning, including arrival and departure procedures, the use of appropriate checklist and the planning of transfers by launch in the vicinity of the coast, taking into consideration, but not limited to the proximity of shallow water, traffic density, navigational hazards, ship's handling characteristics at slow speeds and the prevailing currents, tides and weather conditions.

The Port Authorities of Gibraltar and Algeciras are recommended to:

1. Establish formal links / communications between the two port authorities to ensure a full exchange of traffic information.

2. Consider the development of a vessel traffic separation scheme within the Bay of Gibraltar and its approaches, to improve the flow of traffic and reduce traffic conflict.

3. Consider developing cooperation to ensure the future exchange of traffic information encompassing Gibraltar Port, Ageciras Port, Tarifa Traffic and the new container port on the north coast of Morocco

The Gibraltar Port Authority is recommended to:

1. Continue to improve the existing GPA vessel monitoring system

2. Encourage Masters to engage the services of pilots when outbound from the Western anchorage.

3. Consider the establishment of a restricted zone in the vicinity of Europa Point, up to 1 n.mile from the shore. The restrictions should be related to the size of ship such that the free passage of small vessels and recreational craft would not be impeded.

Government of Gibraltar
Maritime Administration
3 February 2009