Report of safety investigation

SAMCO EUROPE
MSC PRESTIGE

Bureau d'enquêtes sur les évènements de mer

Report of safety investigation

Collision

between supertanker

SAMCO EUROPE

and container ship

MSC PRESTIGE

on 7 December 2007 in Aden Gulf

Warning

This report has been drawn up according to the provisions of Clause III of Act No.2002-3 passed by the French government on 3rd January 2002 and the decree of enforcement No.2004-85 of 26th January 2004 relating to technical investigations after marine casualties and terrestrial accidents or incidents and in compliance with the “Code for the Investigation of Marine Casualties and Accidents” laid out in Resolutions A.849(20) and A.884(21) adopted by the International Maritime Organization (IMO) on 27/11/97 and 25/11/99.

It sets out the conclusions reached by the investigators of the *BEA*mer on the circumstances and causes of the accident under investigation.

In compliance with the above mentioned provisions, the analysis of this incident has not been carried out in order to determine or apportion criminal responsibility nor to assess individual or collective liability. **Its sole purpose is to identify relevant safety issues and thereby prevent similar accidents in the future**. The use of this report for other purposes could therefore lead to erroneous interpretations.

CONTENTS

ANNEXES

Abbreviations and Acronyms

AB	:	Able Bodied seaman
AIS	:	Automatic Identification System
ARPA	:	Anti-collision Radar Plotting Aid
***BEA*mer**	:	Bureau d'enquêtes sur les évènements de mer
BCR	:	Bow Crossing Range
BCT	:	Bow Crossing Time
BRG	:	Bearing
Cbl	:	Cable (0,1 nautical mile)
COG	:	Course Over the Ground *(* MSC PRESTIGE radar display)
CPA	:	Closest Point of Approach
CSN	:	Centre de Sécurité des Navires
COLREG	:	International Regulations for Preventing Collisions at Sea 1972 as amended
ECDIS	:	Electronic Chart Display and Information System
GM	:	Metacentric height
FO	:	Fuel Oil
HDG	:	Heading
INS	:	Integrated Navigation system
ISM	:	International Safety Management
Kts	:	Knots
MSC	:	Mediterranean Shipping Company
MT	:	Metric Tons
NM	:	Nautical miles

OOW	:	Officer Of the Watch
PSC	:	Port State Control
RIF	:	Registre International Français
SITREP	:	SITuation REPort
STCW	:	Standards of Training, Certification and Watch-keeping
TCPA	:	Time of Closest Point of Approach
TEU	:	Twenty feet Equivalent Unit
TGT ID	:	Target Identification
UTC	:	Universal Time Coordinated
UMS	:	Universal Measurement System
VDR	:	Voyage Data Recorder
VRM	:	Variable Range Marker
VHF	:	Very High Frequency
VLCC	:	Very Large Crude Carrier
VTS	:	Vessel Traffic Service

1 CIRCUMSTANCES

On Friday 7 December 2007, at 23h47 TU, French VLCC *SAMCO EUROPE* and container ship *MSC PRESTIGE*, flying Panama flag, have been involved in a collision 16 NM east-south-east of « Bab el Mandeb » strait Traffic separation scheme.

Weather conditions were good : easterly winds force 3, good visibility .

SAMCO EUROPE, coming from Lavan Island (Iran), was heading 300 to Ain Sukhna (Red sea) at a speed made good of 16,3 kts. *MSC PRESTIGE*, coming from Jeddah, was heading 101 to Port-Louis (Mauritius) at a speed made good of 24 kts. Vessels are 7 miles apart, *SAMCO EUROPE* had *MSC PRESTIGE* on her portside bow , their route should cross at more than 2 miles when *MSC PRESTIGE* started to alter her course slowly on her starboard. Two minutes later, *SAMCO EUROPE* started to alter her course slowly on her portside. Despite VHF contacts, the two OOWs failed to coordinate their actions. A few seconds before the collision, the captain of *SAMCO EUROPE*, alerted too late by OOW, tried a “hard to port manoeuvre”.

The collision happened between the stem of *MSC PRESTIGE* and the starboard bow of *SAMCO EUROPE*. A second shock, softer, damaged the *SAMCO EUROPE* at the lifeboat and starboard bridge wing level.

None of the crew on both vessels were injured and no pollution was found. The damage on both vessels were very important.

This report is based mainly on the exploitation of recordings of the two vessels VDR . The VDR data of *SAMCO EUROPE* have been received by the *BEA*mer on 27 December 2007 ; those of *MSC PRESTIGE* on 18 July 2008.

2 CONTEXT

2.1 *SAMCO EUROPE*

SAMCO EUROPE (SAudi Maritime COmpany) Delta Ltd is the ship owner. The vessel is chartered on a bare boat basis by V.SHIPS France which operate it. The vessel is time chartered by TOTAL Chartering & Shipping Services SA.

The transit through the Suez Canal requires a partial unloading of cargo in the Red Sea, at Ain Sukhna in Egypt and reloading the same amount in the Mediterranean, at SIDI KERIR, also in Egypt.

2.2 *MSC PRESTIGE*

The ship owner is PEDREGAL MARITIME S.A Panama. Technical and crew management is provided by ANGLO - EASTERN SHIP MANAGEMENT in Hong Kong.

Since 1994, ANGLO – EASTERN GROUP is involved in training for Indian crews (Anglo - Eastern training centre, in Mumbai, India).

Since January 2007, the vessel is chartered for MSC (*Mediterranean Shipping Company*). She operates on a liner service Asia - Romania and Turkey via Jeddah or Asia – US Pacific coast.

3 VESSELS

3.1 *SAMCO EUROPE*

3.1.1 Generalities

SAMCO EUROPE was built in South Korea and delivered in 2007. She is registered in Marseille (RIF).

Main characteristics :

- **Call sign : FNLU;**
- **N° IMO : 9315159;**
- **N° MMSI : 635 015700;**
- **Length overall : 333 m;**
- **Breadth : 60 m;**
- **Depth : 30.40 m;**
- **Gross tonnage (UMS) : 160 882;**

- **Net tonnage (UMS) : 109 809;**
- **Deadweight : 317 713 MT;**
- **Displacement : 362 909 MT;**
- **Draft : 21.50 m;**
- **Main engine : 29 366 kW (76 rpm);**
- **Speed : 16 kts.**

Last PSC : Nil.
Insurance P&I Assuranceforeningen Gard – Norway.

3.1.2 Bridge

Bridge is fitted with equipments in accordance with INS standards: GPS, radars, ARPA, ECDIS, AIS, VDR.

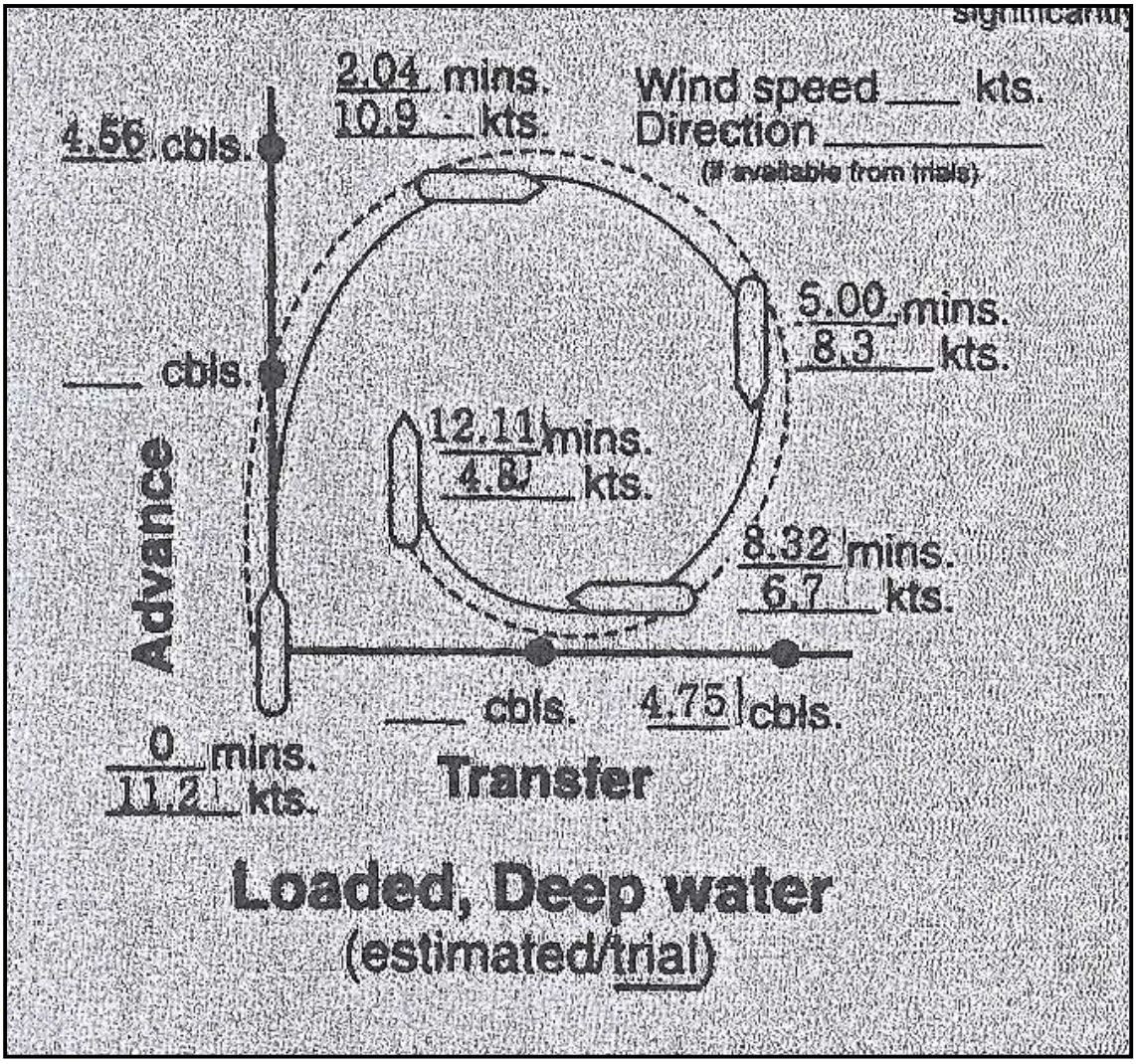
AIS data can be viewed on the radar display (one-touch activation).

3.1.3 Engine room

The vessel is fitted with an Unmanned Machinery Space.

3.1.4 Manoeuvrability

Turning circle: Full Ahead with maximum rudder angle.



3.1.5 Class

The vessel is classed at DET NORSKE VERITAS.

Class Certificate : 1A1 Tanker for oil ESP SPM OPP-F EO VCS-2 HMON (A1, Cyes, G4, Oyes) TMON BIS PLUS-1 NAUTICUS (Newbuilding).

3.1.6 Departure from Lavan Island (Iran)

Fore draft	:	20.52 m ;
Aft draft	:	21.63 m ;
Light vessel	:	45 196.2 MT ;
Cargo	:	284 233 MT (1,201 557 FOROZAN BLEND barrels and 779 987 LAVAN BLEND CRUDE OIL barrels) ;
Stores	:	114 MT ;
FO	:	4 321.8 MT ;
Gasoil	:	103.7 MT ;
Oil	:	117.5 MT ;
Fresh water	:	443.0 MT ;
Ballast	:	3549.0 MT ;
Miscellaneous	:	125.6 MT ;
Dead weight	:	293 007.7 MT ;
Total	:	338 203.9 MT ;
G'M	:	7.27 m.

3.1.7 Special visit

Following the collision, a special visit was performed by CSN Le Havre, vessel stopped at sea in Aden gulf, on 14 and 15 December 2007.

Damage listed in the special visit report :

- shell plating ripped off above the waterline at the bow locker level ;
- bow locker lower platform torn open ;
- fore peak open to seawater ;
- fore void space also open to seawater ;
- starboard fore ballast tank torn open at deck level ;
- starboard windlass destroyed ;
- starboard anchor lost ;
- fore mast destroyed ;

- shell plating damaged from the gangway to the bridge wing ;
- starboard bridge wing damaged ;
- six starboard fair leads damaged ;
- starboard lifeboat unserviceable.

The vessel was then allowed to proceed to a cargo transfer and to sail to Dubai for repair.

3.2 *MSC PRESTIGE*

3.2.1 Generalities

MSC PRESTIGE is also a very new “full container ship”; she was built in Japan, and she was delivered in August 2006. The port of registry is Panama.

Main characteristics :

- **Call sign : 3EGH8;**
- **N° IMO : 9321029;**
- **N° MMSI : 351 861000;**
- **Lenght overall : 293 m;**
- **Breadth : 40 m;**
- **Depth : 24.30 m;**
- **Gross tonnage (UMS) : 71 902;**
- **Net tonnage (UMS) : 29 112;**
- **Light vessel : 26 656 mt;**
- **Deadweight : 72 968 mt;**
- **Maximum Displacement : 99 624 mt;**
- **Maximum draft : 14.28 m;**
- **Main engine : 62 920 kW;**
- **Speed : 26 kts.**

Last PSC was performed in Pusan, Korea on 18 June 2007 : no deficiencies.

Insurance : Japan Shipowners’ P&I Association.

3.2.2 Bridge

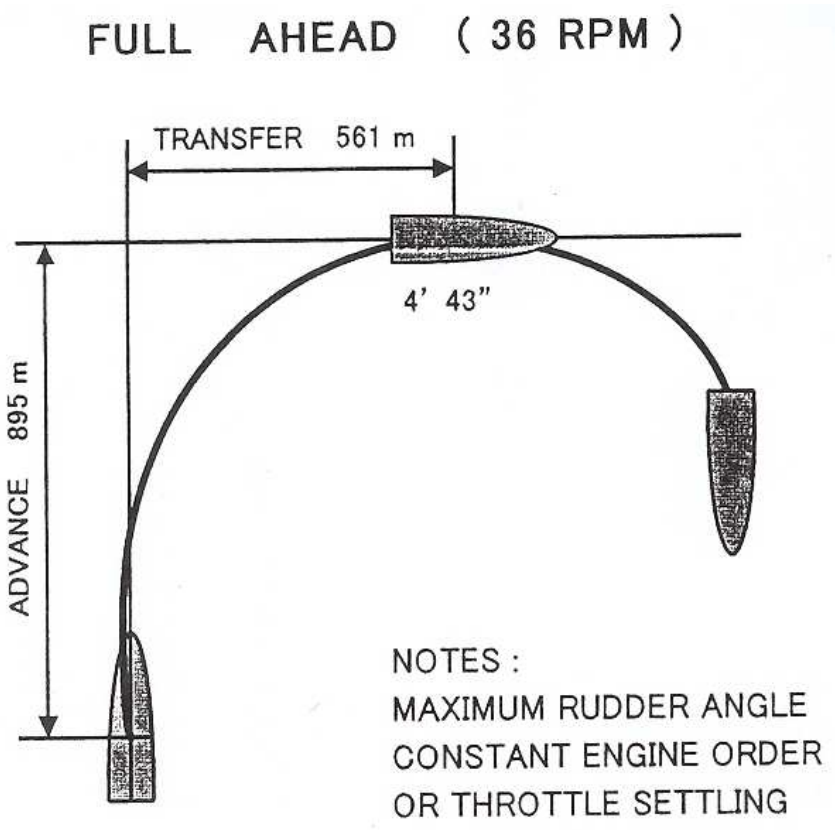
Bridge is fitted with equipments in accordance with INS standards : GPS, radars, ARPA, ECDIS, AIS, VDR.

3.2.3 Engine room

Unattended Machinery Space.

3.2.4 Manoeuvrability

Turning circle: Full ahead with maximum rudder angle.



3.2.5 Class

NIPPON KAIJI KYOKAI.

3.2.6 Hydrostatic an cargo data

Departure from Jeddah (and estimated on arrival port) :

DEPARTURE PORT	JEDDAH	1.028	GM =	6.00 M	
DRAFT FWD	8.70		DISPLACEMENT =	60352.00 MT	
AFT	10.55		INVISIBLE DISTANCE =	364.00 M	
MEAN	9.63		WATER BALLAST =	5733.00 MT	
TRIM	1.85		FRESH WATER =	165.00 MT	
ARRIVAL PORT	PORT LOUIS	1.025	GM =	5.74 M	
DRAFT FWD	8.60		DISPLACEMENT =	59107.00 MT	
AFT	10.30		INVISIBLE DISTANCE =	363.00 M	
MEAN	9.45		WATER BALLAST =	5733.00 MT	
TRIM	1.70		FRESH WATER =	230.00 MT	

CARGO

	20' F	20' E	40' F	40' E	UNITS	TEU	TONS
ARRIVAL	1116	400	381	540	2437	3358	41401.7
DISCHARGED	440	139	340	135	1054	1529	19138.7
LOADED				150	150	300	600.0
DEPARTURE	**676**	**261**	**41**	**555**	**1533**	**2129**	**22863.0**
DISCH NEXT PORT							
IN TRANSIT	**676**	**261**	**41**	**555**	**1533**	**2129**	**22863.0**

4 CREWS

4.1 *SAMCO EUROPE*

The *Minimum Safe Manning certificate* indicates 19 crew members. Actually there are 27 crew members on board :

- six officers are French (captain, chief officer, chief engineer, second engineer, 3rd and 4th engine officers) ;
- the two cadets are French ;
- three officers are Indian(2nd and 3rd mates, one engine officer) ;
- the electrician is Indian ;
- fifteen seamen are Filipinos.

All have the necessary certificates and are able to perform their respective functions in accordance with the STCW Convention.

The **captain**, aged 35, is an experienced officer, who holds a level 1certificate without restriction, issued in 2002. He is fully qualified for service onboard tanker ships.

He made all his navigation as an officer on board tanker ships. He joined the company V. Ships France in June 2001, during the reclassification of crew MOBIL OIL France. He gained his first command in 2006.

The **2nd mate**, on watch during the event, aged 24, is of Indian nationality.
He holds a level 2 certificate without restriction (*Certificate of competency* as *Second mate of a foreign – going ship*) issued in 2006.

It was the first time that he was sailing on board a French vessel (since 19 November 2007). Previously, he sailed twice on board a VLCC.

The **AB seaman**, on watch during the event, aged 42**,** is of Filipino nationality. He holds a "Support" level and a deck rating capacity.

4.2 *MSC PRESTIGE*

The *Minimum Safe Manning certificate* indicates 14 crew members. Actually there are 21 crew members of Indian nationality on board:

All have the necessary certificates and are able to perform their respective functions in accordance with the STCW Convention.

The **captain**, aged 53, is an experienced officer. He has been in command for at least the past 3 years (given the copy of his professional booklet on which the previous appointments are not listed). He has beenon board for more than 4 months.

The **2nd mate**, on watch during the event, aged 35, holds a First mate certificate of competency issued in 2007.

The **AB seaman**, on watch during the event, aged 27, completed a Navigational watch training on board training ship RAHAMAN in 1998.

5 SEQUENCE OF EVENTS

In UTC (local time on board *SAMCO EUROPE* : UTC + 3H30) ;

(local time on board *MSC PRESTIGE* : UTC +3).

On 3 December 2007

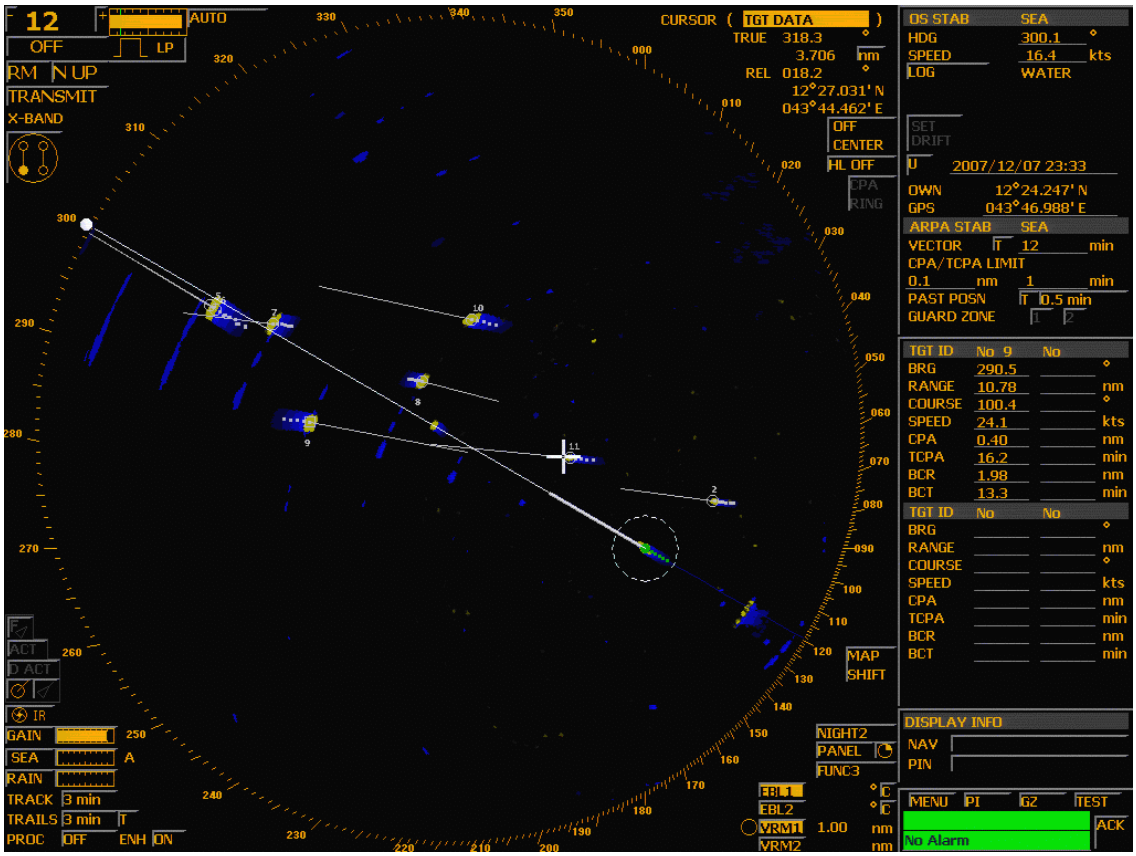
At **14H50**, *SAMCO EUROPE* **sails from** the loading buoy of Lavan Island (Iran) for Rotterdam via Ain Sukhna and Suez Canal.

On 6 December 2007

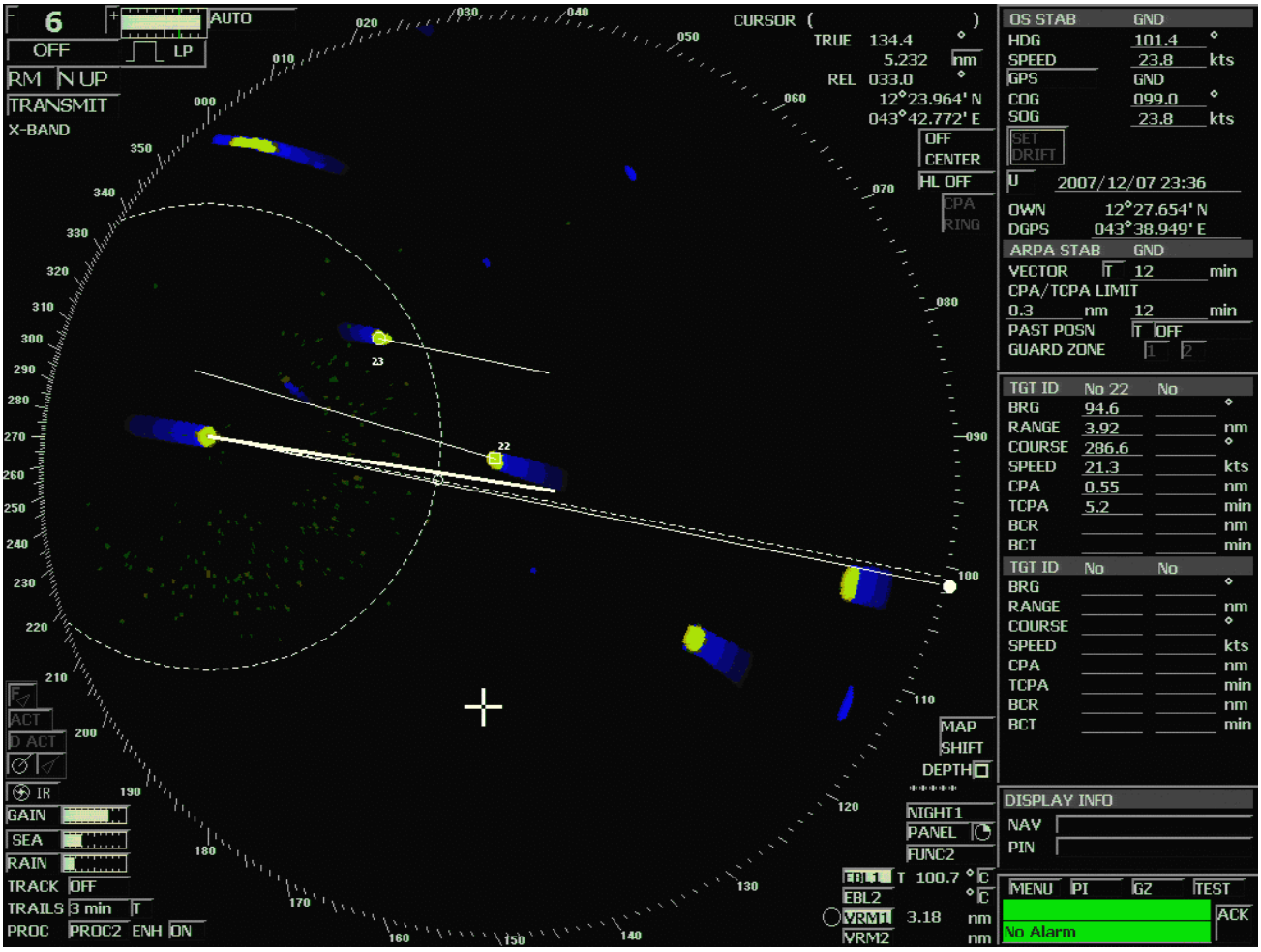
At **23H30**, *MSC PRESTIGE* sails from Jeddah for Port-Louis (Mauritius).

On 7 December 2007

At **23H31** (VDR time), *SAMCO EUROPE* course is 300° and she is 21 miles from the souther n entrance of Bab El Mandeb TSS. *MSC PRESTIGE* is the target n°9, just taken into account by ARPA calculator.

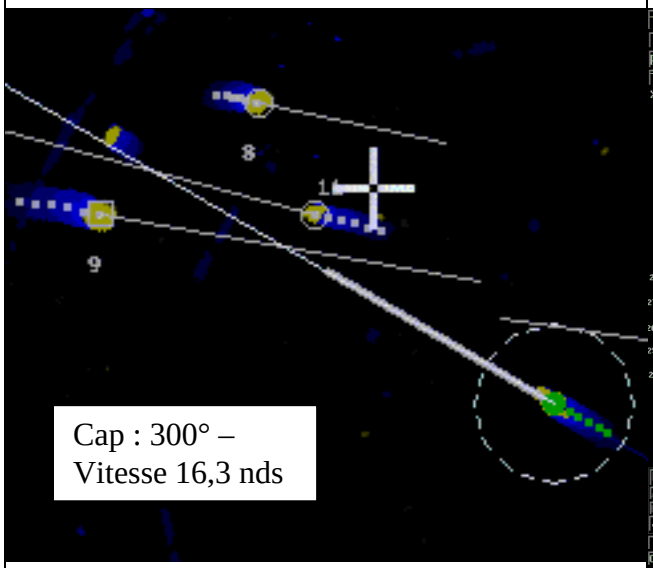
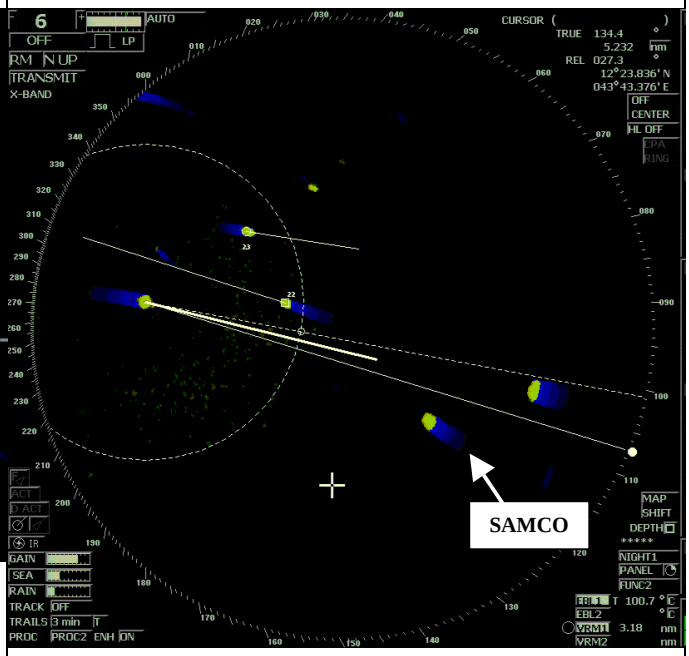


At **23H36**, *MSC PRESTIGE* course is 101° and she is ready to alter her course on starboard to pass between the two vessels ahead, respectively at # 7 NM in the bearing 112° (*SAMCO EUROPE*), and at # 9 NM in the bearing 102° (target n°2 on the *SAMCO EUROPE* ARPA) . Target n°22, a passing ship, is clear, on her portside :

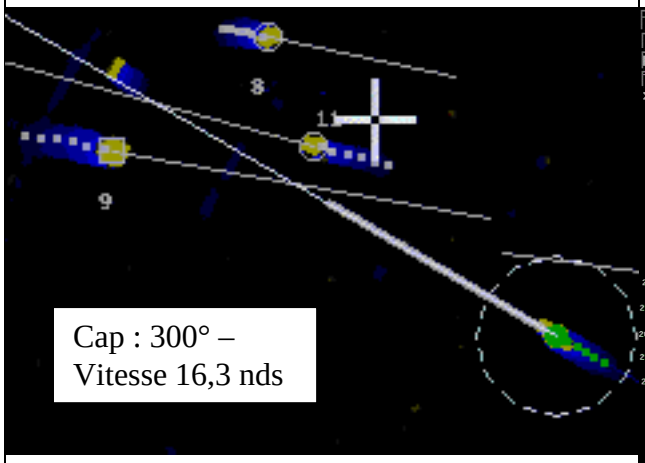
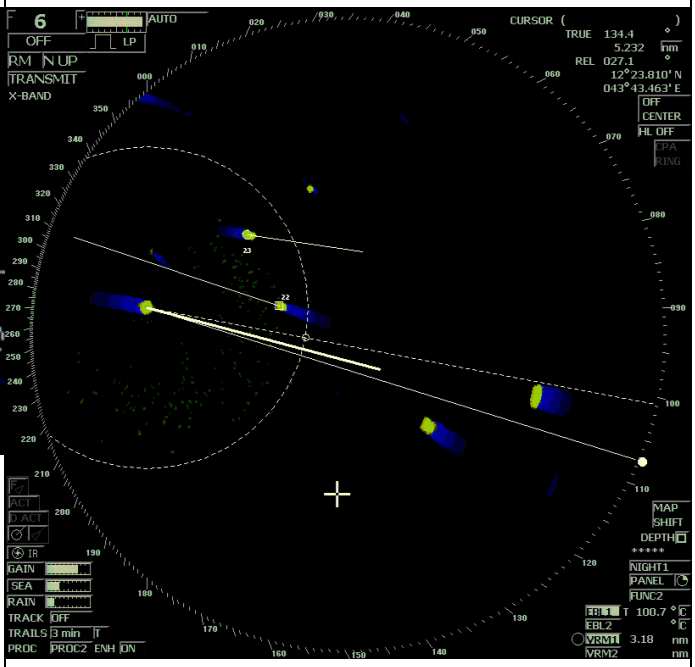


For the following, pictures of the two vessels ARPA displays are presented in synchronism. **However these images, may have an interval of several seconds**.

At **23H37**, initial situation, *SAMCO EUROPE* course is 300° and *MSC PRESTIGE* gyro course is now 107° (course over the ground 104°). If no change of course is done, *MSC PRESTIGE* will pass ahead of *SAMCO EUROPE* at 2,28 NM and CPA will be 0,48 MN (data calculated by the *SAMCO EUROPE* ARPA which has not yet "seen" the alteration of course of the *MSC PRESTIGE*).

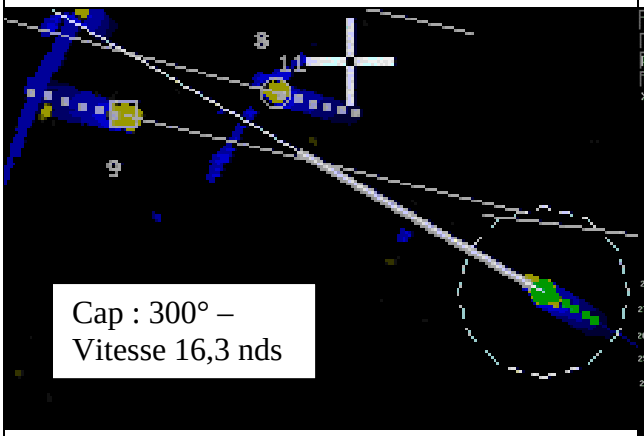
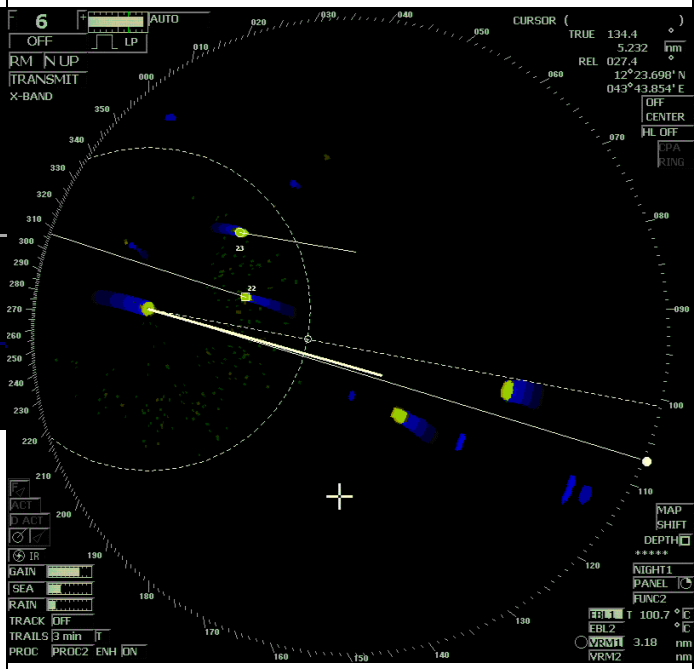
SAMCO EUROPE ARPA **(Range 12 NM)**	*MSC PRESTIGE* ARPA **(Range 6 NM)**
TGT ID No 9 BRG 292.4 RANGE 6.12 COURSE 99.7 SPEED 24.0 CPA 0.48 TCPA 9.2 BCR 2.28 BCT 5.9	*SAMCO EUROPE* is not « targeted» by *MSC PRESTIGE.* Course and speed *MSC PRESTIGE* : OS STAB GND HDG 107.1 ° SPEED 23.8 kts GPS GND COG 104.0 ° SOG 23.8 kts
	

Situation at **23H38** :

SAMCO EUROPE ARPA	*MSC PRESTIGE* ARPA
TGT ID No 9 BRG 292.5 RANGE 5.98 COURSE 100.1 SPEED 24.0 CPA 0.45 TCPA 9.0 BCR 2.18 BCT 5.8	No bearing/ distance or ARPA information about *SAMCO EUROPE*. Course and speed *MSC PRESTIGE* : OS STAB GND HDG 107.3 ° SPEED 23.8 kts GPS GND COG 105.0 ° SOG 23.8 kts
 Cap : 300° – Vitesse 16,3 nds	

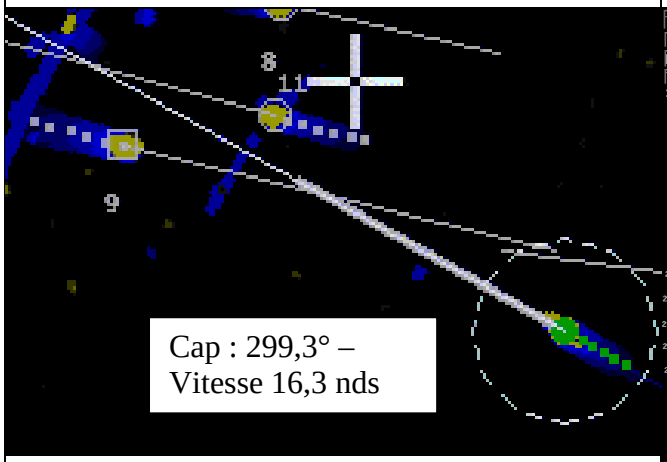
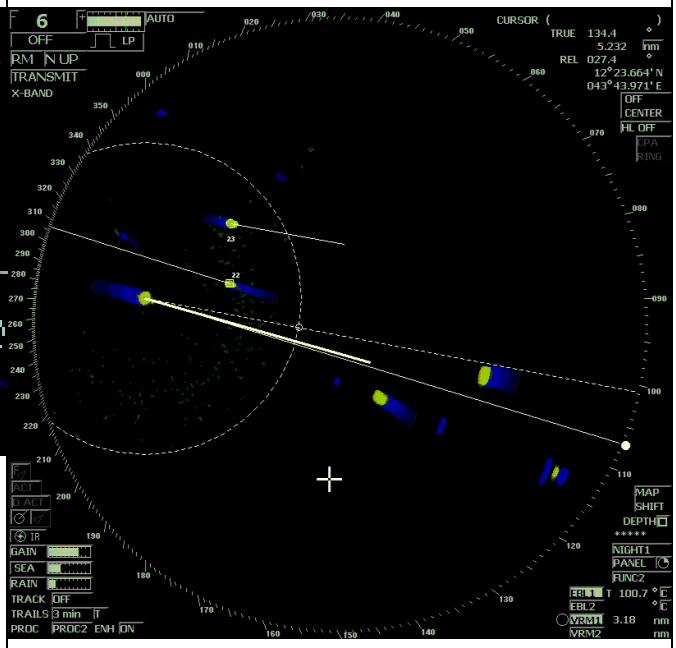
The difference between the course calculated by ARPA *SAMCO EUROPE* and the course displayed on *MSC PRESTIGE* remains.

Situation at **23H39** :

SAMCO EUROPE ARPA	*MSC PRESTIGE* ARPA
TGT ID No 9 BRG 292.8 RANGE 5.29 COURSE 103.5 SPEED 24.0 CPA 0.24 TCPA 8.0 BCR 1.41 BCT 5.9	No bearing/ distance or ARPA information about *SAMCO EUROPE*. Course and speed *MSC PRESTIGE* : OS STAB GND HDG 107.0 ° SPEED 23.8 kts GPS GND COG 106.0 ° SOG 23.8 kts
	

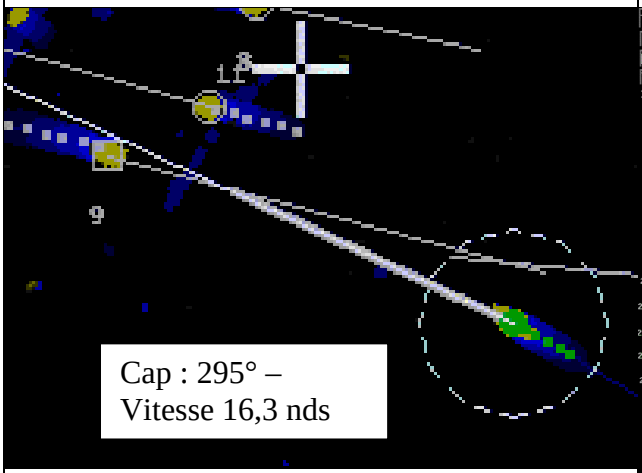
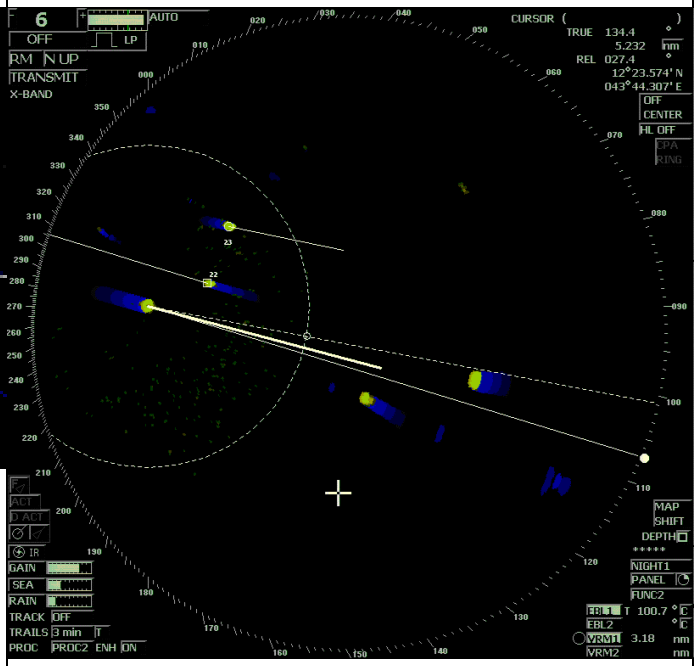
Two minutes after the « initial situation», CPA is divided by 2. The difference between the course calculated by *SAMCO EUROPE* and display of the *MSC PRESTIGE* course tends to decrease.

Situation at **23H39min15sec** :

SAMCO EUROPE ARPA	*MSC PRESTIGE* ARPA
TGT ID No 9 BRG 292.7 RANGE 5.12 COURSE 104.2 SPEED 23.9 CPA 0.19 TCPA 7.7 BCR 1.27 BCT 5.8	No bearing/ distance or ARPA information about *SAMCO EUROPE*. Course an speed *MSC PRESTIGE* : OS STAB GND HDG 107.0 ° SPEED 23.8 kts GPS GND COG 106.0 ° SOG 23.8 kts
	

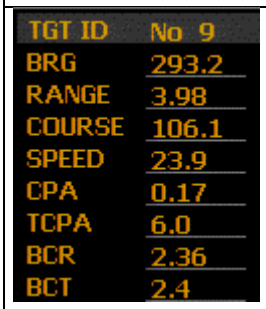
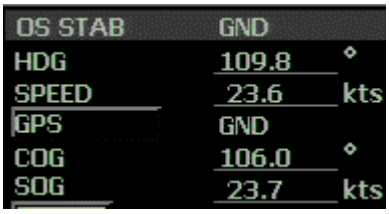
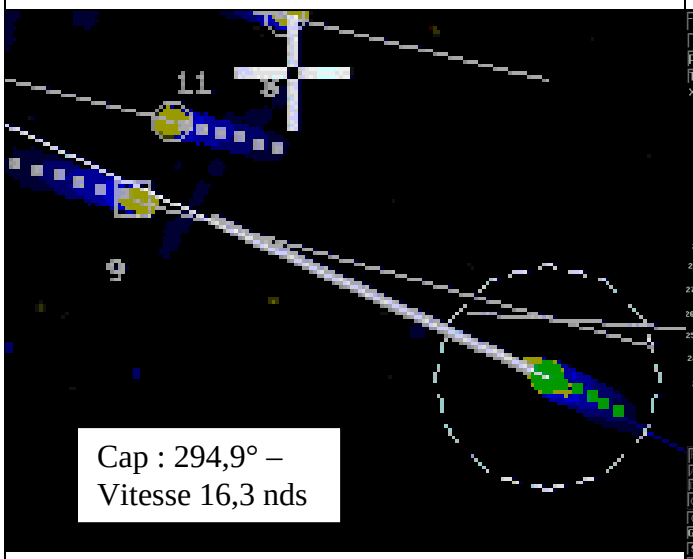
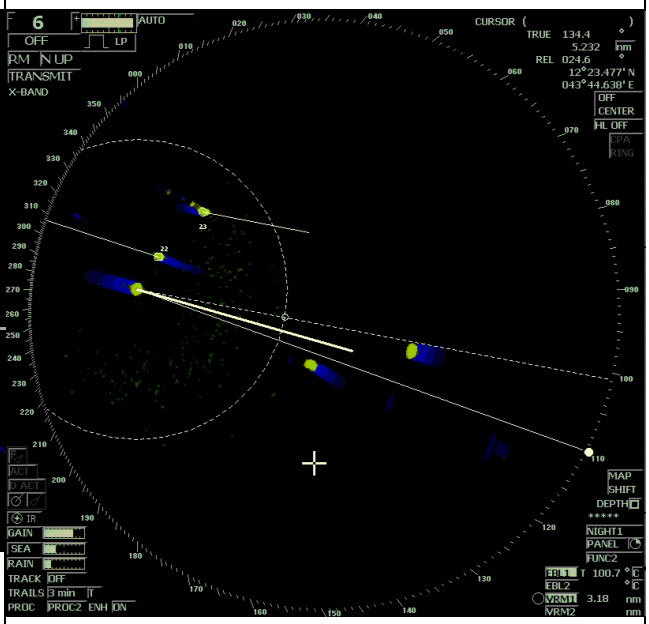
SAMCO EUROPE began to alter her course to portside (The helm is “Port 10” up to a course of 295°). CPA decreases yet.

Situation at **23H40** :

SAMCO EUROPE ARPA	*MSC PRESTIGE* ARPA
TGT ID No 9 BRG 292.7 RANGE 4.62 COURSE 105.0 SPEED 24.0 CPA 0.15 TCPA 6.9 BCR 1.95 BCT 4.0	No bearing/ distance or ARPA information about *SAMCO EUROPE*. Course and speed *MSC PRESTIGE* : OS STAB GND HDG 107.0 ° SPEED 23.8 kts GPS GND COG 105.0 ° SOG 23.8 kts
	

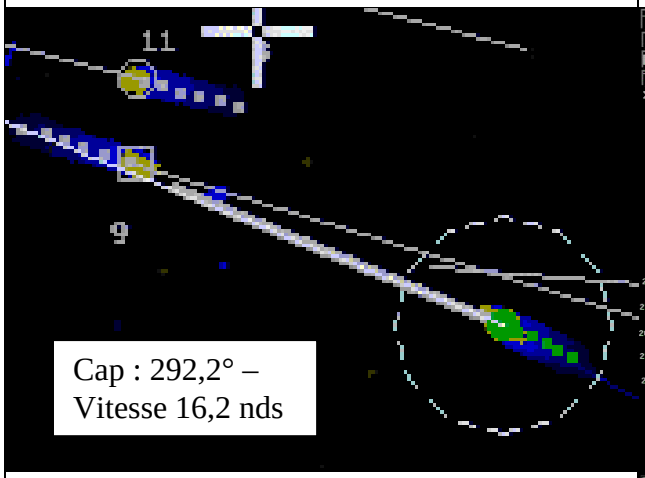
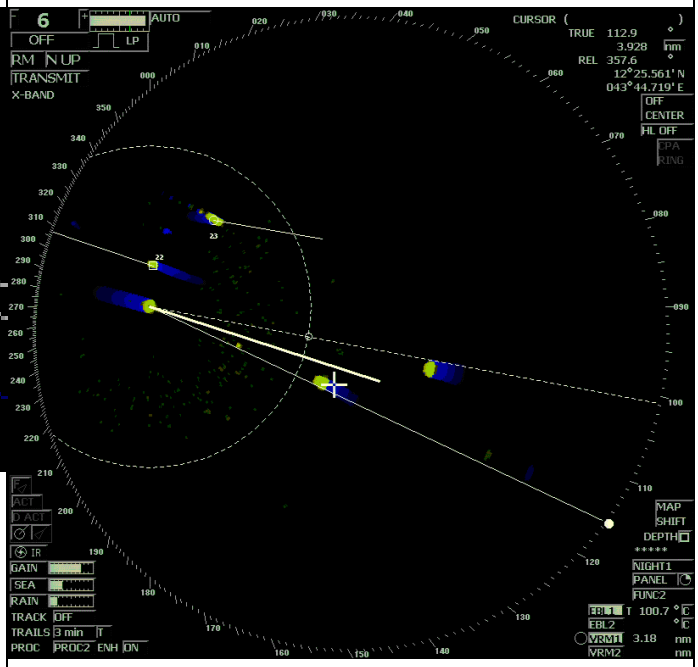
The CPA is below a ship's length.

Situation at **23H41** :

SAMCO EUROPE ARPA	*MSC PRESTIGE* ARPA
	No bearing/ distance or ARPA information about *SAMCO EUROPE*. Course and speed *MSC PRESTIGE* : 
	

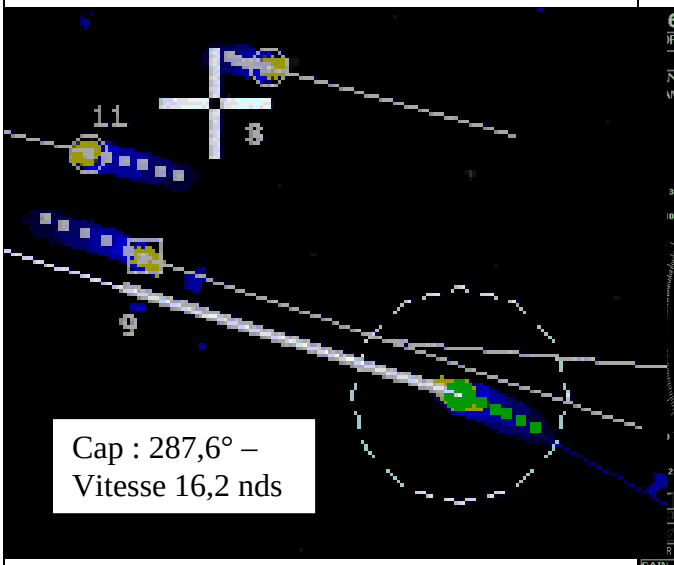
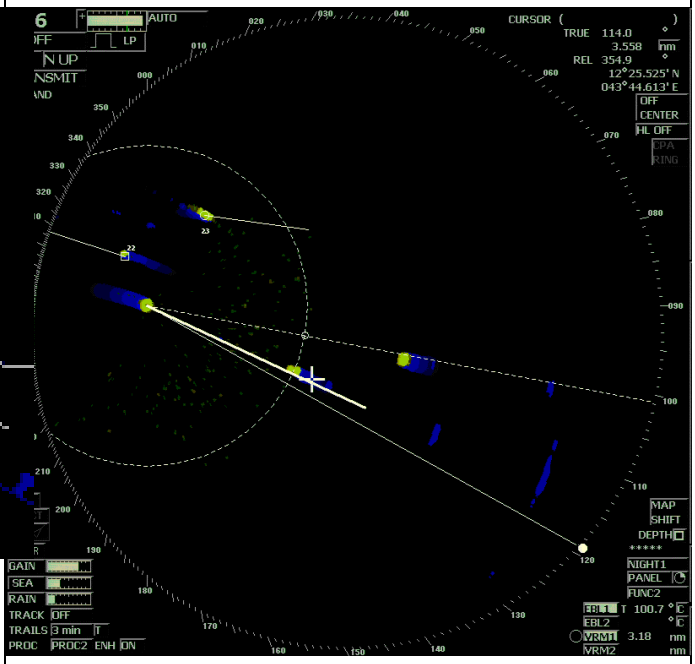
The change of course of the *MSC PRESTIGE*, to a “port to port” passing, appears on the course and speed display of the *MSC PRESTIGE*.

Situation at **23H41min45sec** :

SAMCO EUROPE ARPA	*MSC PRESTIGE* ARPA
TGT ID No 9 BRG 293.5 RANGE 3.64 COURSE 107.1 SPEED 24.1 CPA 0.18 TCPA 5.4 BCR BCT	No bearing/ distance or ARPA information about *SAMCO EUROPE*. Course and speed *MSC PRESTIGE* : OS STAB GND HDG 115.3 ° SPEED 23.6 kts GPS GND COG 108.0 ° SOG 23.8 kts
	

SAMCO EUROPE ARPA : *MSC PRESTIGE* has just passed on the starboard side of *SAMCO EUROPE.*

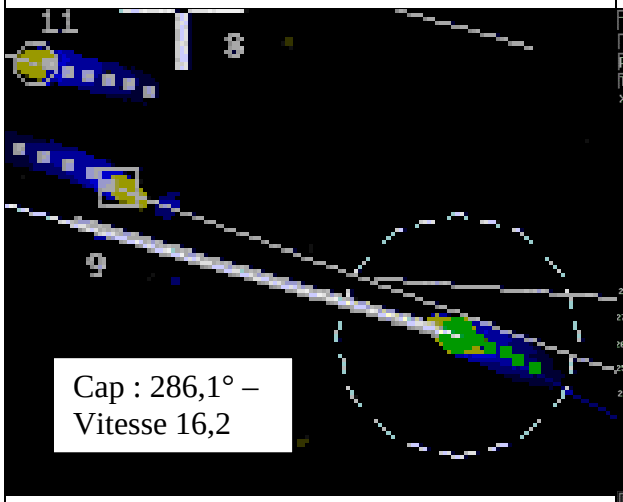
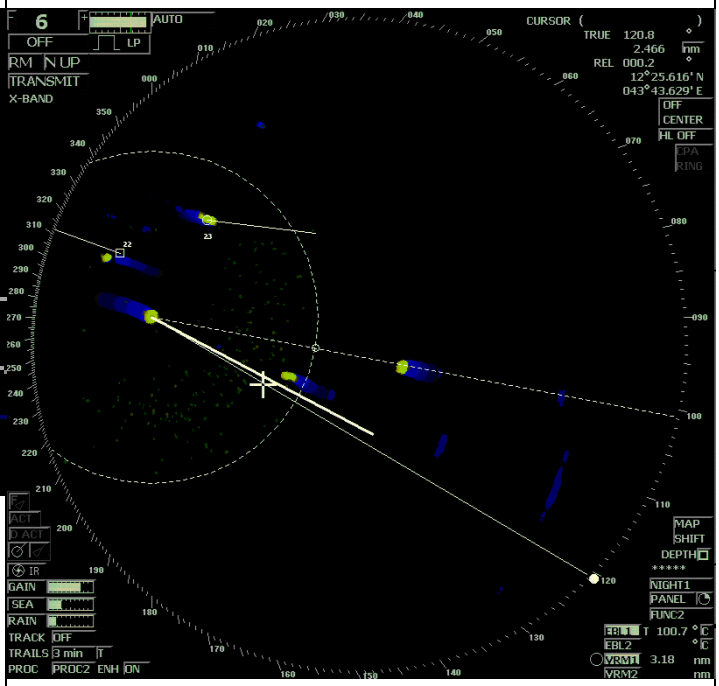
Situation at **23H42** :

SAMCO EUROPE ARPA	*MSC PRESTIGE* ARPA
TGT ID No 9 BRG 293.5 RANGE 3.14 COURSE 108.9 SPEED 24.1 CPA 0.13 TCPA 4.7 BCR BCT	*SAMCO EUROPE* « cuts » VRM1 set at 3.18 NM. Course and speed *MSC PRESTIGE* : OS STAB GND HDG 119.1 ° SPEED 23.8 kts GPS GND COG 115.0 ° SOG 23.9 kts
Difference between *MSC PRESTIGE* course calculated by ARPA *SAMCO EUROPE* and heading of MSC display	
	

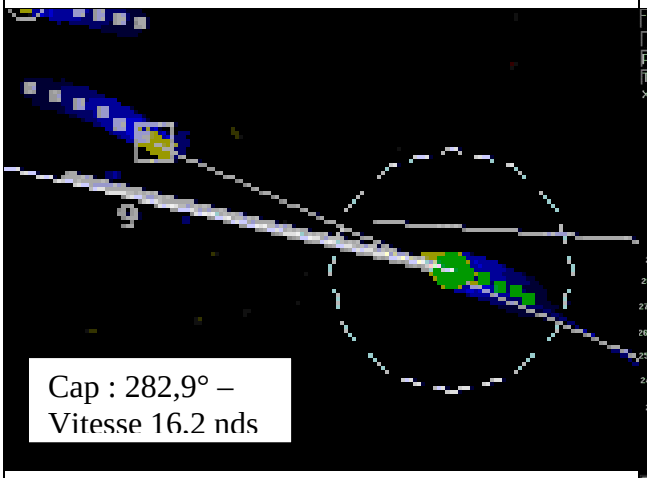
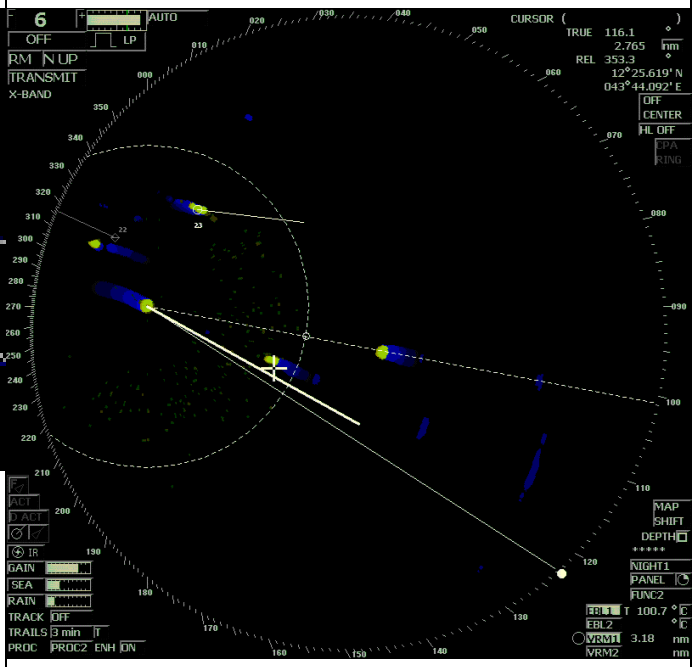
The difference of distance between the pictures (range ARPA *SAMCO EUROPE* = 3.14 NM and VRM1 radar MSC = 3.18 NM) is 0.04 NM, i.e. # 6 secondes.

On **23H42min12sec**, first VHF contact, at the initiative of *MSC PRESTIGE* : a red to red passing seems to be agreed by the two OOWs (VDR audio recording). The *MSC PRESTIGE* "leadership" is clear and the OOW of *SAMCO EUROPE* informs that he is already changing his course on the left, which is not compatible with the "port to port contract" ; the OOW of *SAMCO EUROPE* shares his incomprehension to his helmsman.

Situation at **23H42min30sec** :

SAMCO EUROPE ARPA	*MSC PRESTIGE* ARPA
TGT ID No 9 BRG 293.3 RANGE 2.98 COURSE 110.3 SPEED 24.1 CPA 0.09 TCPA 4.4 BCR BCT	No bearing/ distance or ARPA information about *SAMCO EUROPE*. Course and speed *MSC PRESTIGE* : OS STAB GND HDG 120.6 ° SPEED 23.9 kts GPS GND COG 118.0 ° SOG 23.9 kts
 Cap : 286,1° – Vitesse 16,2	

Situation at **23H43** :

SAMCO EUROPE ARPA	*MSC PRESTIGE* ARPA
TGT ID No 9 BRG 292.9 RANGE 2.62 COURSE 113.8 SPEED 23.9 CPA 0.00 TCPA 3.9 BCR BCT	No bearing/ distance or ARPA information about *SAMCO EUROPE*. Course and speed *MSC PRESTIGE* : OS STAB GND HDG 122.8 ° SPEED 23.8 kts GPS GND COG 119.0 ° SOG 23.9 kts
	

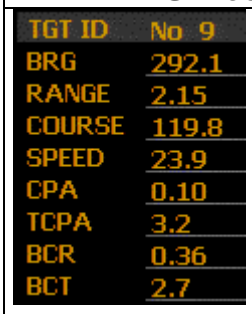
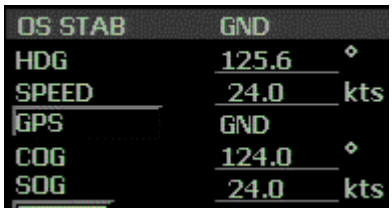
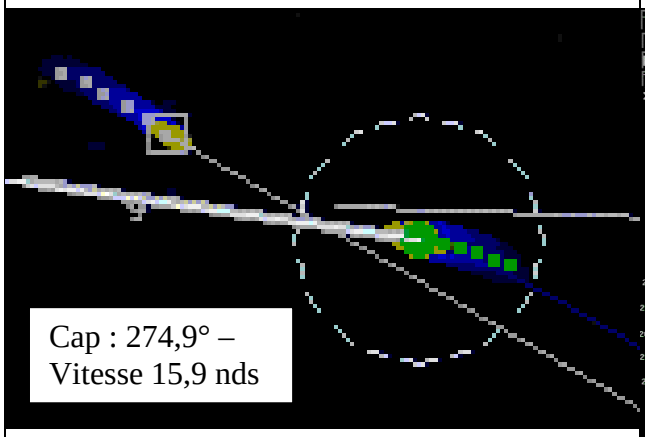
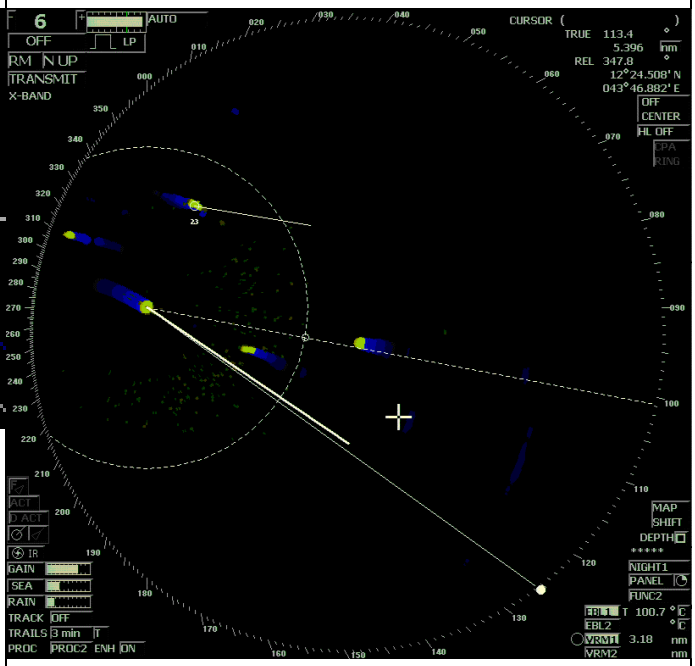
The CPA is nil.

On the *MSC PRESTIGE* display the *SAMCO EUROPE* is at # 2,6 NM bearing 114°, which is consistent with *SAMCO EUROPE* display indications.

But the *SAMCO EUROPE* blip is on the left of the *MSC PRESTIGE* heading line : there is an “offset” with the *SAMCO EUROPE* display (*MSC PRESTIGE* course headed right towards the SAMCO).

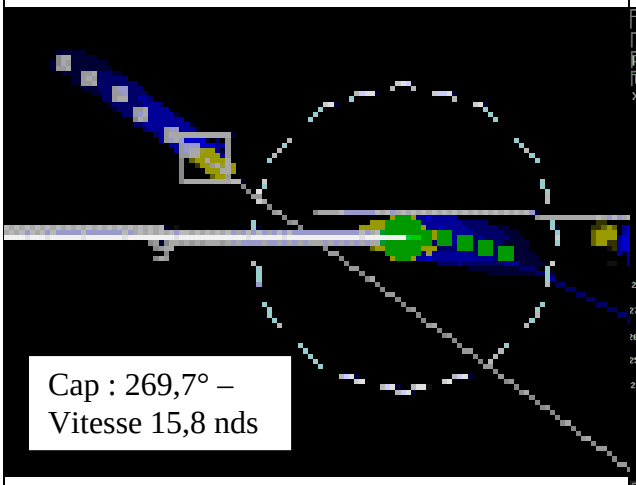
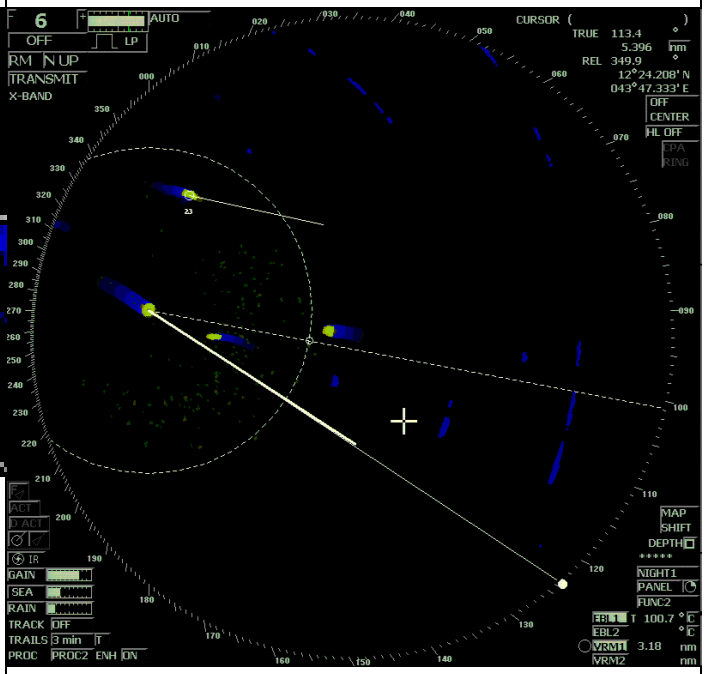
From **23H43min30sec** to **23H44min13sec**, new contact by VHF, at the initiative of *SAMCO EUROPE* OOW. MSC *PRESTIGE* OOW announces that he maintains his course (and his intention of a "port to port" passing) and he asks to the *SAMCO EUROPE* to go to portside. The "*MSC PRESTIGE* leadership" is confirmed. The OOW of *SAMCO EUROPE* expresses doubts to the OOW of *MSC PRESTIGE*.

Situation at **23H44** :

SAMCO EUROPE ARPA	*MSC PRESTIGE* ARPA
	No bearing/ distance or ARPA information about *SAMCO EUROPE*. Course and speed *MSC PRESTIGE* : 
	

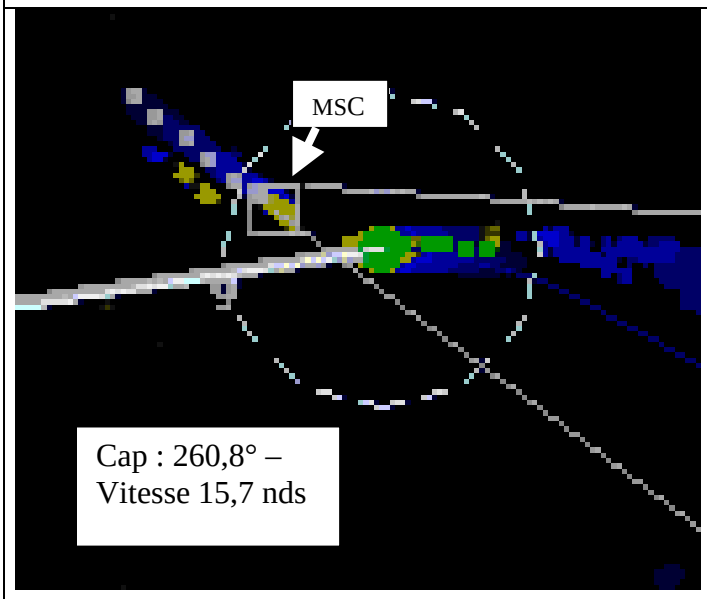
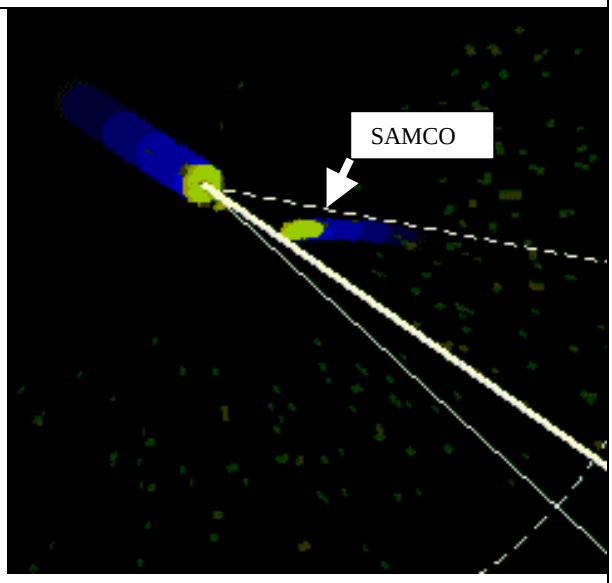
Both vessels continue to change course

Situation at **23H45** :

SAMCO EUROPE ARPA	*MSC PRESTIGE* ARPA
TGT ID No 9 BRG 290.7 RANGE 1.30 COURSE 126.3 SPEED 24.7 CPA 0.11 TCPA 2.0 BCR 0.26 BCT 1.6	No bearing/ distance or ARPA information about *SAMCO EUROPE*. Course and speed *MSC PRESTIGE* : OS STAB GND HDG 123.5 ° SPEED 23.9 kts GPS GND COG 123.0 ° SOG 23.9 kts
 Cap : 269,7° – Vitesse 15,8 nds	

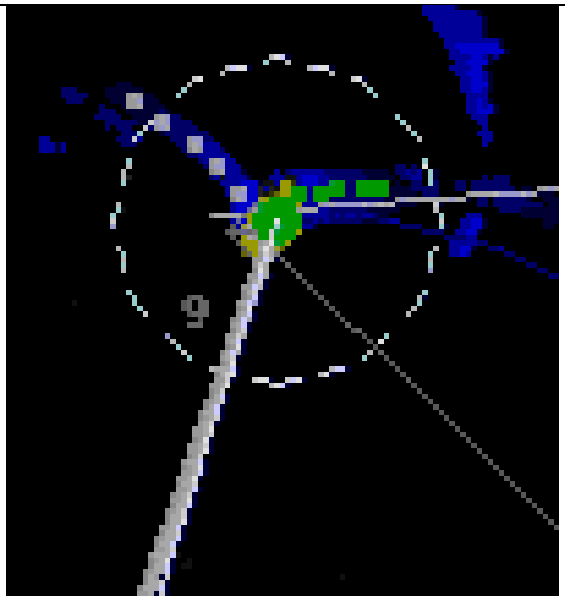
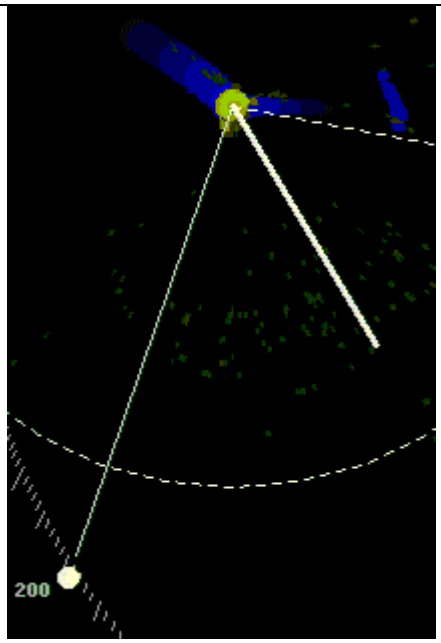
At **23H45min53sec**, VHF contact. The OOW of *SAMCO EUROPE* alerts the OOW of *MSC PRESTIGE* about the too close CPA. The OOW of *MSC PRESTIGE* requests to *SAMCO EUROPE* « hard to port », order already given at this time by the OOW of *SAMCO EUROPE*.

Situation at **23H46** :

SAMCO EUROPE ARPA	*MSC PRESTIGE* ARPA
TGT ID No 9 BRG 289.2 RANGE 0.68 COURSE 127.0 SPEED 25.3 CPA 0.06 TCPA 1.0 BCR 0.11 BCT 0.9	No bearing/ distance or ARPA information about *SAMCO EUROPE*. Course and speed *MSC PRESTIGE* : OS STAB GND HDG 132.3 ° SPEED 23.6 kts GPS GND COG 125.0 ° SOG 23.8 kts
	

The OOW of *SAMCO EUROPE* wakes the master up. While reacting very quickly, he will be on the bridge a few seconds before the collision.

Situation at **23H47** :

SAMCO EUROPE ARPA	*MSC PRESTIGE* ARPA
	

SAMCO EUROPE engine is stopped, the helm is “hard to port”. The two vessels collided “bow against bow” then “plating against plating”, before *SAMCO EUROPE* had time to put her engine astern.

6 ANALYSIS

6.1 Environmental factor

The *BEA*mer does not consider the weather conditions as a contributing factor to the accident (7 miles of visibility)

6.2 Technical factor

6.2.1 On board *SAMCO EUROPE*

Ergonomics :

No technical factor, concerning the ergonomics of the bridge, in particular the INS, has caught the *BEA*mer attention as presenting a risk for collision avoidance. The time

needed to update the values calculated by ARPA must be taken into account when ships are still manoeuvring. But the differences of course observed on displays (see narrative), have not been decisive for the actions taken by the two OOWs.

Manoeuvrability :

Vessel loaded, in deep water : less than 5 cables to alter course of 90° (cf. turning circle). For comparison, a large cruise ship equipped with pods has a turning circle diameter of about 3 cables, with an approach speed of 24 knots.

By stopping engine, 6.5 minutes are necessary to reduce speed at 12 knots. 5 minutes are necessary with engine astern.

The Manoeuvrability of the ship is not contributory to the accident

6.2.2 On board *MSC PRESTIGE*

Equipment and ergonomics :

Same as above.

Manoeuvrability :

Vessel loaded, in deep water : 561 m to alter course of 90° (cf. turning circle). The manoeuvrability of the vessel even creates an excess of confidence of the OOW who "accepts" a very close situation ahead of *SAMCO EUROPE*.

6.2.3 VTS aid

The *BEA*mer considers that in this area of convergence, particularly frequented by fast and large vessels, the Strait of Bab El Mandeb should be covered by a VTS aid.

6.3 Human factor

6.3.1 On board *SAMCO EUROPE*

Conduct of vessels in sight of one another : *SAMCO EUROPE* is stand-on vessel.

Navigation : navigation is done properly (GPS fixes are reported regularly on the chart, the ship is well maintained on her course, the log books are filled).

Collision avoidance : OOW didn't implement Rule 17 adequately :

- The altering of her course by *MSC PRESTIGE* of few degrees to the right, even if it is slow, is visible on the ARPA and the scope dedicated to the AIS.
- In this situation, the stand-on vessel must not alter course to port (Rule 17.c).

The partial application of Rule 17 by the officer on watch is a **contributing factor** in the accident.

The OOW, despite his young age, and while the situation has dramatically deteriorated, doesn't call the captain when he would yet help him. This reluctance is an **aggravating factor**, contributing to the accident.

The staff on board and the organization of work are adequate to operate the ship. During the seven days preceding the accident, the watch officer took 15 hours of rest per 24 hours. The AB seaman took rest periods between 11 and 14 hours per 24 hours.

Health aspect : neither of the two men on watch has consumed drugs or alcohol.

6.3.2 On board *MSC PRESTIGE*

Conduct of vessels in sight of one another : *MSC PRESTIGE* is give-way vessel.

Navigation : navigation is also done properly (GPS fixes reported regularly on the chart, the ship is well maintained on the course, the log books are filled).

Collision avoidance : OOW alters the course to a "port to port" passing, certainly at 4 miles, - that is to say 7 minutes before the collision, which, given the speed and the size of ships, is already late -, and not enough largely to be readily and quickly observed, visually or by radar, by the bridge team of the other vessel.

He is only partially compliant with Rule 16.

The partial application of Rule 16 by the officer of the watch is also a **contributing factor** in the accident.

The *SAMCO EUROPE* is not followed by electronic bearing line and VRM of the *MSC PRESTIGE*, or taken into account by the ARPA. OOW deprives himself of a precious tool for collision avoidance.

OOW, by continuing to alter course on starboard, even when his ship is already passed on starboard of *SAMCO EUROPE*, gets in an uncomfortable situation that will conduct to pass very close ahead of *SAMCO EUROPE*. This decision is an **aggravating factor.**

The staff on board and the organization of work are adequate to operate the ship. During the seven days preceding the accident, the watch officer took period of rest between 11 to 12.5 hours per 24 hours. The AB seaman took rest periods between 12 and 16 hours per 24 hours.

Health aspect : neither of the two men on watch has consumed drugs or alcohol (info from ANGLO EASTERN representative in London).

6.4 Other factors

6.4.1 On board *SAMCO EUROPE*

To be compliant with ISM procedures, a checklist for familiarization with bridge equipment (24 items) is filled by deck officers when embarking.

This checklist, if implemented as a formality, will contribute to deflect from “state of the art” to routine tasks and to inadequate reactions in case of emergency.

6.4.2 On board *MSC PRESTIGE*

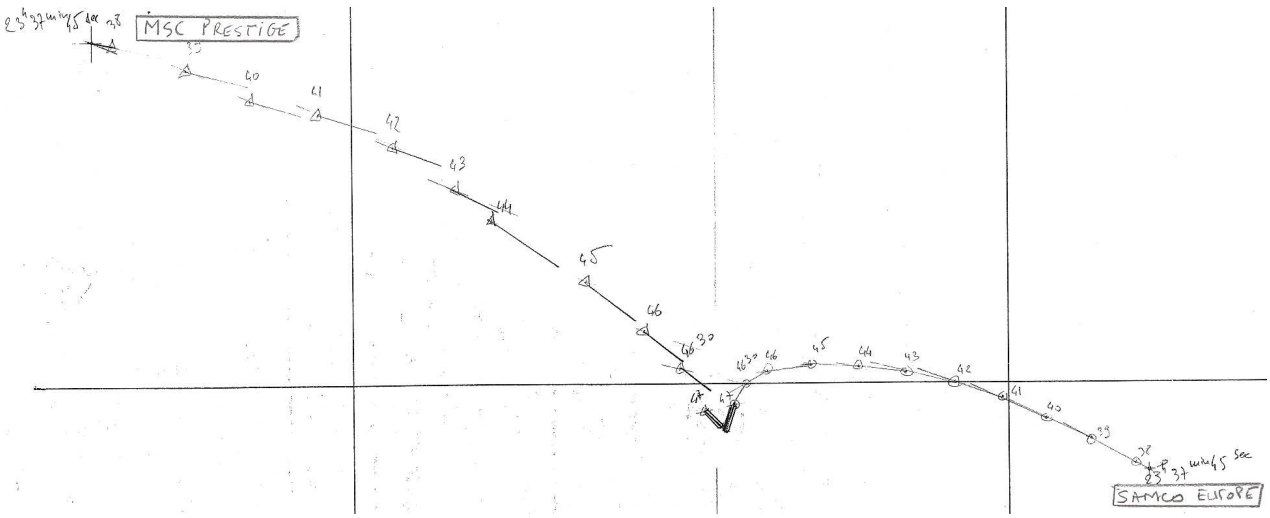
The company issues accurate procedures for deck officers on how to proceed on bridge : chapter 1.17.3 (Anglo – Eastern Group Main Shipboard Manual) clearly indicates that “*an alteration of 30 to 40 degrees is considered to be the minimum for it to be readily apparent to another vessel observing only by radar*”.

Likewise as for checklist, if company procedures are not implemented in all circumstances, they will loose their pedagogic interest and reassuring effect, especially in emergency situations.

6.5 Summary

- Rule 16 is partially implemented by the OOW of *MSC PRESTIGE* (course alteration to port).
- Rule 17 is not properly implemented by the OOW of *SAMCO EUROPE* (course alteration of "only a few degrees", relatively late).
- No reassessment of the manoeuvre to execute when the situation becomes very different from the initial conditions : the OOW of *MSC PRESTIGE* persists in the decision of a "port to port" passing.
- The VHF contacts didn't result to a satisfactory "agreement".
- ARPA possibilities were not sufficiently used (especially on board *MSC PRESTIGE*).
- Decreasing of the speed by reducing propulsion means was not used.
- The captain of *SAMCO EUROPE* is called by OOW when it's too late.
- *SAMCO EUROPE* manoeuvre during the last seconds before collision
- Checklists and procedures in critical situation are not "literally" followed.
- A VTS aid in Bab El Mandeb strait would be beneficial.

Path of the two vessels (from : ARPA *SAMCO EUROPE*) :



7 RECOMMENDATIONS

To shipowners :

- *BEA*mer recommends to ensure that OOWs have a good knowledge of the COLREG rules.

- *BEA*mer recommends to ensure, through regular sessions on bridge simulators that OOWs are sufficiently qualified for the use of electronic aids (ARPA and AIS).

- *BEA*mer recommends to ensure, through regular sessions on bridge simulators as well, that OOWs are sufficiently qualified for the appropriate application of the COLREG rules.

- The promotion by IMO of development of sophisticated "e-Navigation" equipment must be accompanied by appropriate and frequently updated training.

To masters associations :

- *BEA*mer recommends masters to ensure that in case of difficulty, officers on watch, particularly the less experienced, will not hesitate to call them on time, thus enforcing their standing orders unwaveringly.

- *BEA*mer has reservations about the systematic use of VHF. that could be, in some particular situation, of no effective assistance, especially when an officer of the watch tends to exert influence on the officer of the watch of the other vessel. COLREG rules are sufficient to be enforced "in silence".

To IMO :

- *BEA*mer encourages coastal states to install VTS in high density traffic areas. In this case, a surveillance radar installed on Perim Island would facilitate navigation in the Straits of Bab El Mandeb Trafic separation scheme, and its approaches.

ANNEXES

A. Decision to hold an enquiry

B. Photographs

C. Charts

Annexe A

Decision to hold an enquiry

Liberté • Égalité • Fraternité
RÉPUBLIQUE FRANÇAISE

Bureau d'enquêtes sur
les événements de mer

Paris, le 25 FEV. 2008
N/réf. : BEAmer

000047

BEA mer

DÉCISION

Le directeur du Bureau d'enquêtes sur les événements de mer ;

Vu la loi n° 2002-3 du 3 janvier 2002 relative aux enquêtes techniques après événements de mer ;

Vu le décret n° 2004-85 du 26 janvier 2004 relatif aux enquêtes techniques après événement de mer, accident ou incident de transport terrestre ;

Vu l'arrêté ministériel du 17 février 2004 portant nomination du Directeur du Bureau d'enquêtes sur les événements de mer ;

Vu le décret du 27 septembre 2007 portant délégation de signature (Bureau d'enquêtes sur les événements de mer) ;

Vu le message établi le 10 décembre 2007 par le CSN Le Havre ;

DECIDE

Article 1 : En application de l'article 14 de la loi sus-visée, une enquête technique est ouverte concernant la collision, survenue dans la nuit du 07 décembre 2007, entre le pétrolier *SAMCO EUROPE* et le porte-conteneurs *MSC PRESTIGE*, à 22 nautiques de Bab El Mandeb.

Article 2 : Elle aura pour but de rechercher les causes et de tirer les enseignements que ces événements comportent pour la sécurité maritime, et sera menée dans le respect des textes applicables, notamment le titre III de la loi sus-visée et la résolution A.849 (20) de l'Organisation Maritime Internationale.

L'Administrateur Général des
Affaires Maritimes
Jean-Marc SCHINDLER
Directeur du BEAmer

Ministère de l'Écologie,
du Développement,
et de l'Aménagement
durables

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Annexe B

Photographs

MSC PRESTIGE BOW after collision

SAMCO EUROPE bridge

SAMCO EUROPE

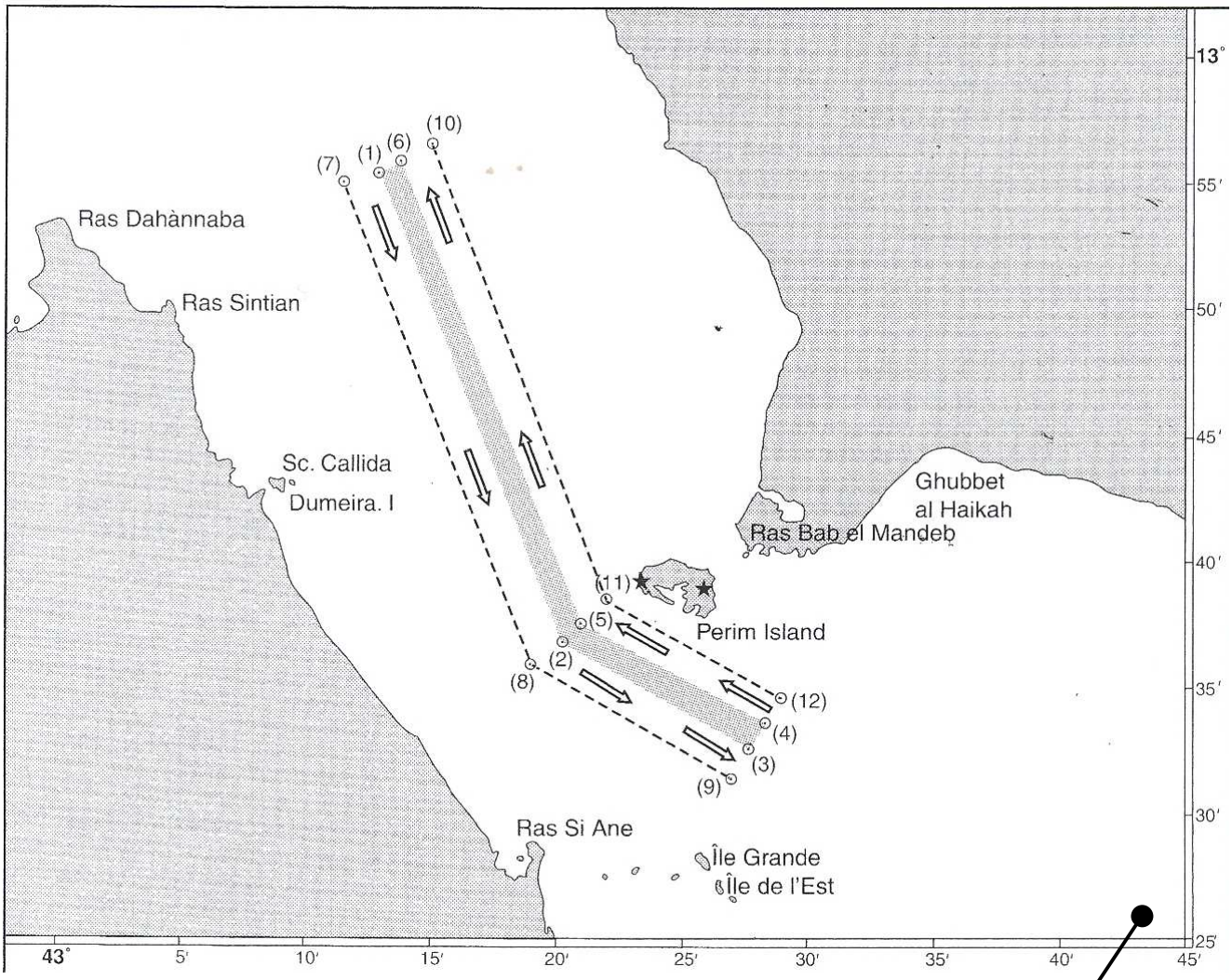
SAMCO EUROPE

SAMCO EUROPE

Annexe C

Charts

Carte générale du détroit de Bab El Mandeb



Collision *SAMCO EUROPE – MSC PRESTIGE*
12°25,8 N – 043°42,8 E

Perim Island High Light	
Position :	12°39′0″N 43°25′0″E [4]
Localisation :	Perim
Construction :	1912[4]
Hauteur :	81 m[4]
Portée :	24 miles nautiques[4]
Feux :	Quatre flashes blancs toutes les quinze secondes[4]
Se visite :	Non[4]

Ministère de l'Ecologie, de l'Energie, du Développement durable et de l'Aménagement du territoire

Bureau d'enquêtes sur les évènements de mer

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