



# **THE BAHAMAS MARITIME AUTHORITY**

**“EUROMAGIQUE”**

**IMO Number 7504524**

**Official Number 728148**

**Report of the investigation into  
the engine room fire of  
“EUROMAGIQUE”**

**on**

**17 June 1995**

*The Bahamas Maritime Authority investigates incidents at sea for the sole purpose of discovering any lessons which may be learned with a view to preventing any repetition. It is not the purpose of the investigation to establish liability or to apportion blame, except in so far as emerges as part of the process of investigating that incident.*

*It should be noted that the Bahamas Merchant Shipping Act, Para 170 (2) requires officers of a ship involved in an accident to answer an Inspector's questions fully and truly. If the contents of a report were subsequently submitted as evidence in court proceedings relating to an accident this could offend the principle that a person cannot be required to give evidence against himself. The Bahamas Maritime Authority makes this report available to any interested parties on the strict understanding that it will not be used as evidence in any court proceedings anywhere in the world.*

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1. SUMMARY

- 1.1. “EUROMAGIQUE” was a passenger and vehicle ferry engaged on a regular trade between Sheerness in the United Kingdom and Vlissingen, Netherlands.
- 1.2. She departed from Sheerness at 1055 hours BST 17 June 1995. At 1935 hours BST later the same day, when approaching the port of Vlissingen, a fire was detected at the aft end of the starboard engine.
- 1.3. The fire alarm was sounded and all 85 passengers on board were safely and efficiently mustered and later evacuated from the vessel.
- 1.4. In the mean time initial attempts at localised fire fighting failed as the fire increased in intensity. The engine room was evacuated, shut down and sealed off prior to the vessel’s CO<sub>2</sub> smothering being activated.
- 1.5. The CO<sub>2</sub> smothering was largely successful and later attendance by the Netherlands Fire Service extinguished the minor remnants of the fire.
- 1.6. The vessel was towed into the port where repairs were undertaken to Classification Society satisfaction.
- 1.7. The repairs were completed on 14 July 1995

2. PARTICULARS OF VESSEL

2.1. “EUROMAGIQUE” was a Roll on - Roll off Passenger and Vehicle Ferry of welded steel construction with a stern door and ramp. The machinery was located aft. She was provisionally registered at Nassau, Bahamas and had the following principal particulars:

- Length overall - 162.11 metres
- Length BP - 153.20 metres
- Breadth - 18.00 metres
- Depth - 13.35 metres
- Gross Tonnage - 11,591 tons
- Deadweight - 5,867 tonnes
- Call Sign - C6ND9

2.2. She was powered by two Sulzer “Zgoda” Zaklady Urzadzen, type 8ZZL40/48 four stroke, eight cylinder main engines that developed a total of 7,650 kW (10,400 bhp) and which drove two fixed bladed propellers. She was fitted with one transverse thruster forward and had three generators that developed a total of 1,411 kW.

2.3. The Vessel was capable of carrying 109 cars, 115 trailers and 308 teu.

2.4. “EUROMAGIQUE” was built in 1977 at Lodose, Sweden and was previously named “Attika”, Naesborg”(twice), “Dana Corona” and “Kaprifol.” She had undergone a major conversion in 1994.

2.5. At the time of the incident she was Owned by Reylands Carriers S.A., Monrovia, (Owner’s Agents: A K Ventouris Inc. Faliro, Greece). She had been bareboat chartered to the Mersey Docks and Harbour Board and was managed by Crescent Shipmanagement, Kent, UK from March 1995.

2.6. The vessel was sailing under a Bahamas Provisional Certificate of Registry dated 28 March 1995 and was entered with RINA Classification Society. At the time she complied with the all statutory and international requirements and certification.

2.7. “EUROMAGIQUE” received a voluntary inspection by a United Kingdom MSA inspector in January 1995 which noted, amongst other comments:

- The oil fuel installations pipework etc. needed attention
- Hot pipes were unlagged
- Lagged pipes were deeply soaked in oil
- “Tin can” drip trays abounded

- Fire protection insulation was not attached to the steelwork
- Vapour barriers had disintegrated, (particularly in the purifier room.)

2.8. “EUROMAGIQUE” was last subjected to a Bahamas Maritime Authority Annual Inspection at the Port of Piraeus on 04 April 1995. The following observations were made:

- The machinery spaces were found to be generally satisfactory - however there were engine repairs going on at the time of the inspection and the machinery spaces were noted to be, quite naturally, dirty.

This in itself is not surprising except that it had also been seen in a similar condition three months earlier.

2.9. She had received a joint United Kingdom/Netherlands Port State Control Inspection between the Ports of Sheerness and Vlissingen (Flushing) on 20 April 1995 at the commencement of operations on the route. A large list of defects was noted amongst which the following were relevant:

- Chemicals stored unsafely in ER casing
- ER oily bilges to clean
- Oil leaks to repair in ER
- Oil soaked lagging to renew
- Temporary flexible hoses of fuel oil, lubricating oil and sludge pumping systems to replace or remove
- Starboard fuel valve cooling exp. [sic: expansion] tank cover to fit
- Port side main engine gas bellows leaking.

It is understood that all the defects were rectified.

3. **NARRATIVE OF EVENTS**

3.1. The weather at the time of the incident was overcast with rain. The visibility was moderate being between two and five miles. The wind was South West Beaufort force 6 to 7. The sea was moderate from a West South West direction.

3.2. The port main engine had developed a serious water leak into the scavenge space from the charge air cooler at about 1630 hours 17 June 1995 while on passage to Vlissingen from Sheerness. It was decided to defer the repair until arrival at that port although the engine was available for use if required by the Master.

3.3. “EUROMAGIQUE” was approaching the port of Vlissingen and the Bridge, Engine Room and both mooring stations were manned in readiness for arrival.

3.4. The bridge was manned by the Master, Chief Mate, Pilot and Helmsman. The engine room was manned by the Chief Engineer, Second Engineer, Electrician and a Motorman.

3.5. At about 1933 the Motorman observed white smoke in the engine room.

3.6. The Chief Engineer, in company with the Motorman inspected the source of the smoke. From the inboard gratings of the starboard engine he saw smoke and a small puddle of oil on the plates above the turning gear at the aft end of the engine. From the outboard side of the engine he saw flames apparently coming from the aft end of the exhaust manifold casing.

3.7. The fire alarm was raised at 1935 hours, the Second Engineer notifying the bridge of such details as were then known.

3.8. **Passenger Evacuation**

The following account took place at the same time as the fire fighting but is noted separately for simplicity:

3.8.1. The passengers were alerted and the passenger muster procedure initiated.

3.8.2. All passengers were accounted for and mustered on the port weatherdeck. The accommodation was searched for the first of three times throughout the incident.

3.8.3. The port lifeboats were lowered to the embarkation deck.

3.8.4. Passengers, followed by the catering and hotel crew, except for the Hotel Services Manager, were evacuated to the tug “Fighter” and other harbour support craft from the starboard side of the vessel. This commenced at about 1945 hours and was complete by 2030 hours.

3.8.5. There were no reported injuries to any passengers or crew.

**3.9. Fire Fighting and Vessel Safety**

- 3.9.1. Initial, unsuccessful, attempts were made by the Chief Engineer to fight the fire with portable extinguishers while the engine was stopped and normal fire fighting actions were begun. It was soon apparent that the fire was out of control and so the engine room was evacuated and all engine room fans, ventilators and other openings not already closed were secured in preparation for flooding by CO<sub>2</sub>.
- 3.9.2. The two tugs that were already on standby for the vessel's arrival were made fast by about 1940 hours.
- 3.9.3. The tugs turned the vessel to such a heading that the wind was blowing from the port side. The harbour tugs later changed roles so that those with fire fighting capabilities could assist by boundary cooling and others could assist with the evacuation of the passengers, catering and hotel crew.
- 3.9.4. At approximately 1945 hours the engine room was reported to be evacuated and secure. The Master then authorised flooding by CO<sub>2</sub>.
- 3.9.5. The port anchor was dropped at 1955 hours in Weilingen Noord Anchorage in the vicinity of buoy W8.
- 3.9.6. About 30 minutes after the CO<sub>2</sub> flooding the Chief and Second Engineers entered the engine room, wearing breathing apparatus. They determined that the main fire was out but that there may have been some other minor, secondary fires still burning.
- 3.9.7. At 2105 hours the Netherlands Fire Brigade personnel arrived on board to assist. A team of their men entered the machinery space and found some wooden boxes still smouldering. These were soon extinguished.
- 3.9.8. At 2147 hours the Netherlands Fire Brigade declared that the vessel was safe to enter harbour and at 2309 hours they declared that the fire was completely out.
- 3.10. A Salvage agreement was signed with Smit Tak BV at 2137 hours.
- 3.11. The Vessel berthed safely at 0112 hours 18 June 1995.
- 3.12. The emergency generator cut out during the early stages of the fire fighting because of a constant high overload which was the result of the numerous short circuits from the bare cables in the vicinity of the fire.



4. ANALYSIS

4.1. Cause of the fire

- 4.1.1. The evidence at the seat of the fire suggested that an fuel injector pipe at the aft end of the starboard main engine had leaked fuel into the water cooling system.
- 4.1.2. By the time of the incident the water piping was mostly full of fuel oil. The water cooling system and its piping is operated under low pressure. The leakage of fuel oil from the high pressure system eventually caused the water piping to give way at a “temporary” flexible rubberised type of joint near to the starboard main engine exhaust.
- 4.1.3. This sprayed a heated mixture of fuel and water over the aft end of the exhaust manifold casing and caught fire.
- 4.1.4. The protection guard around the “temporary” rubberised joint was not in place as the rubberised joint was larger than the original steel one - as was sighted on the port main engine.
- 4.1.5. Investigation of the records indicated that this “temporary” joint had been in place for at least two months, since the current management had assumed responsibility for the vessel. The managers were not able to indicate when the injectors had last been checked or maintained.
- 4.1.6. The primary cause of fire was the failure of the injector fuel pipe which leaked fuel oil into the cooling water system. Why this failed was not possible to define.
- 4.1.7. The failure of satisfactory maintenance and specifically the replacement of the cooling water joint at the aft end of the starboard main engine was the secondary cause of the fire after the fuel oil leakage into that cooling system.
- 4.2. The reports of the oily and dirty state of the engine room are noted in this report and are taken as indicative of the standards of maintenance that the ship was operated on before the new management took over in April 1995. Such reports do however imply that similar standards may have been evident with respect to the maintenance and specially the option of replacing the cooling water joint with a steel part similar to that fitted on the port main engine.
- 4.3. The fire burned locally and did not spread far from its starting point. The closing down of the engine and the CO<sub>2</sub> smothering succeeded in extinguishing all of the main fire. There were isolated secondary fires that smouldered until they were put out by the later entry into the engine room of the Netherlands Fire Brigade. The cleanliness of the engine room was not identified as being causative of this fire, neither was such a condition reported to have been found at that time.
- 4.4. The fire fighting equipment of the ship, the procedures adopted and the conduct of the officers and crew on board were equal to the task set them by this incident.

4.5. The mustering and evacuation of the 85 passengers and the later evacuation of the catering and hotel staff was conducted calmly without any reports of panic, injuries or failed procedures.

4.6. **Managemant Knowledge of the Vessel**

4.6.1. The new managers who took over operational responsibility for the vessel did not appear to receive details of the past maintenance procedures of the vessel. In particular there was evidence of some ignorance on their part of main engine maintenaance history in respect of the inspection regime of the fuel oil injectors.

4.6.2. This is a common yet undesirable practice, where for the sake of commercial confidence, a departing manager may pass on as little data as possible to a new manager except what is discoverable in a survey of Classification Society Records or what may be commercially agreed in negotiations before transfer.

4.6.3. There is no evidence whatsoever that had the new managers known about the fitment of the temporary rubberised joint that they would have repaired it to the same standard as that on the other engine. Similarly it cannot be speculated how long that repair had been in use or whether, if the managerial responsibility had not been changed, the old managers would have completed a permanent repair.

4.6.4. We cannot therefore suggest that one or the other managers or one or the other sets of crews, before or after the transfer should bear responsibility for not identifying the failure that eventually led to the fire.

5. **CONCLUSIONS**

5.1. **The fire**

- 5.1.1. The fire was caused by a fuel oil pipe to the starboard main engine which had leaked fuel into the water cooling system. The resulting high pressure from the fuel system caused the water piping to give way at a temporary flexible rubberised type of joint near to the starboard main engine exhaust.
- 5.1.2. When the joint failed a hot spray of a mixture of fuel and water fell over the aft end of the exhaust manifold casing and caught fire.
- 5.1.3. The "temporary" rubberised joint had been in place for at least two months, since the current management had assumed responsibility for the vessel. The managers were not able to indicate when the injectors had last been checked or maintained.
- 5.1.4. The normal protection guard around this rubberised joint was not in place as the temporary joint was larger than the original steel one.
- 5.2. The engine room was noted to have been dirty and oily on several visits dating back from January 1995 while the vessel was in the process of overhaul and a transfer of managerial responsibilities.

5.3. **The Emergency Procedures**

The vessel's fire fighting and lifesaving equipment operated in a satisfactory manner. The fire fighting and evacuation procedures for the crew and the passengers worked satisfactorily. 85 passengers and a number of crew were evacuated. The fire was fought efficiently including inspections using breathing apparatus. There were no reported injuries during any of these activities

5.4. **Transfer of Information at Times of Managerial Change**

Neither the Managers and the crew on board at the time of the incident nor those who undertook the same responsibilities before the transfer of management in April 1995 can be held fully responsible or be completely without blame in the failure to satisfactorily renew the joint of the cooling water pipe that failed and which led to the fire.

6. **RECOMMENDATIONS AND ACTIONS**

- 6.1. A summary of this investigation was sent to the United Kingdom Marine Accident Investigation Branch.
- 6.2. This report to be passed to the Managers and the Owners' agents for their information.