



THE BAHAMAS MARITIME AUTHORITY

“MC PEARL”

IMO Number 7356408

Official Number 715510

**Report of the investigation into
the development of a sudden severe list to
the container vessel “MC PEARL”**

on

23 September 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. "MC PEARL" departed from Kandla, India on 23 September 1995 bound for Dubai with a cargo of 405 teu of mixed containers. After about four hours steaming the vessel developed a list of approximately 20°. The electrical generation machinery blacked out soon after but the vessel was able to anchor in position 22° 43.3'N, 68° 25.8'E.
- 1.2. Measures were taken by members of the Crew, the Indian Government Coastguard and a Wijsmuller Salvage team to reduce the list, re-secure the cargo and to restart some machinery. There was considerable friction between the crew and salvors on one side and the Coastguard on the other, including the presence of armed personnel from the Coastguard, before a settlement was reached whereby "MC PEARL" was released to be towed to Dubai on 17 October 1995.
- 1.3. The Managers sought the assistance of the Bahamas Maritime Authority and the High Commission in their dispute with the Indian Government Coastguard service during the salvage operations. Once the dispute had been settled the vessel sailed under tow to Dubai. The Managers were changed by the Owners six months after the incident and the vessel was eventually deleted from the register.

2. PARTICULARS OF VESSEL

2.1. "MC PEARL" was a geared general cargo/container ship registered at Nassau, Bahamas, of welded steel construction having a raised forecastle and poop and five cargo holds. The accommodation and machinery spaces were situated between holds four and five. She had the following principal particulars:

- Length overall - 159.09 metres
- Length BP - 146.84 metres
- Breadth - 22.86 metres
- Depth - 14.21 metres
- Gross Tonnage - 12,216 tons
- Deadweight - 16,215 tonnes
- Call Sign - C6HP4

2.2. She was powered by an MAN Type 14V52/55A main engine that developed 10,004 kW (13,600 bhp) and which drove a single fixed bladed propeller. She had three MAN generators that developed a total of 1,725 kW.

2.3. The cargo was carried in five holds that were arranged with eight hatches: Holds 2, 3 and 4 having a pair of hatches, either side of the centre line. There was also the capability to carry vegetable oil. She was fitted to carry 544 teu of containers.

2.4. The Vessel was built in 1976 at Sorel, Canada, (St. Lawrence River) and was formerly named "Pearlstone," "Pioneer Sky," "Kitty Bay," "Celya" and "Tours." At the time of the incident she was Owned by White Bay Shipping Company of Gibraltar, Chartered to, and Managed by, Momentum Maritime of Piraeus.

2.5. The Vessel was first registered under the Bahamas Flag in 1989 and was entered with the RINA Classification Society. At the time she complied with the all statutory and International requirements and Certification.

2.6. "MC PEARL" was last subjected to a Bahamas Maritime Authority Annual Inspection at the port of Colombo, Sri Lanka on 31 August 1995. The following observations were made:

- There were only three engineers on board: one Chief, one third and one fourth. A Second engineer was due to join the vessel at the next port.
- There were two engine room ratings less than the seven required on the Safe Manning Certificate.

3. NARRATIVE OF EVENTS

- 3.1. "MC PEARL" departed from Kandla, India on 23 September 1995 bound for Dubai with a cargo of 405 teu including four 40 foot refrigerated units.
- 3.2. After having sailed a reported 45 miles from the port and positioned about 29 miles off the coast of India, the vessel developed a list of about 20°. The electrical generation machinery blacked out but the vessel was able to anchor in about 20 - 23 metres of water at position 22° 43.3'N, 68° 25.8'E. (See attached copy of Chart BA 39.)
- 3.3. On 24 September 1995 a distress message was transmitted. The Indian Coastguard Authorities responded and took off some of the non-essential crew by helicopter.
- 3.4. On 25 September 1995 the list was reported to be 22°. The Coastguard assisted by returning with some crew and together they restarted a generator and jettisoned some cargo in order to reduce the list. Later that day the Master advised the Coastguard Commander that no further assistance was required as the Owners had engaged Wijsmuller Salvage on an LOF95 salvage contract.
- 3.5. There ensued a, sometimes, acrimonious dispute between the Owners, Salvors and the Indian Coastguard concerning access to the stricken vessel and the Salvage operation. The details of that are not a concern of this report except to note that the delay, while the dispute was settled, resulted in an unnecessary additional risk to the vessel and those remaining on board, before effective salvage operations could be undertaken.
- 3.6. The Master sent a telex on 28 September which reported a list of 20°.
- 3.7. Salvors eventually gained access and had secured the vessel for towage by 02 October 1995. The Salvage Master's situation report of that date noted the following:
- Generator No. 2 was reactivated.
 - Generators Nos. 1 and 3 were out of operation.
 - All tanks and cargo holds had been sounded and it was noted:
 - ◊ No. 2 mid deep tanks were interconnected and as such were causing additional free surface effect.
 - Displaced containers found on top of No. 2 Hatch were repositioned using the ship's equipment.
- 3.8. By 17 October 1995 a settlement concerning the salvage contribution of the Coastguard had been reached. "MC PEARL" was thereafter released, and towed to Dubai.

3.9. Later inspection of the vessel revealed the following:

- The ballast pump was out of action.
- All ballast operations were conducted using the general service pump.
- There were numerous leaking valves from the deep tanks and other ballast tanks.
- The same general service pump was used for the transfer of bilge water and other valves on the system were found to be leaking.

3.10. In March 1996, after this incident and once repairs had been completed, the Owners repossessed the vessel from Momentum Maritime and awarded the management to another company.

4. ANALYSIS

- 4.1. The list on “MC PEARL” developed within hours of departure from the port of Kandla, India.
- 4.2. One report received indicated that the list was as large as 40° although all others referred to 20° or 22°.
- 4.3. There is evidence that several tanks were common and that there were numerous leaking valves on the ballast and bilge system.
- 4.4. There is further evidence that the general service pump was in use soon after the vessel left the port of Kandla.
- 4.5. The list was stabilised by the crew and the Coastguard by jettisoning 12 containers. The contents of these was not recorded although the cargo manifest was taken ashore by the Coastguard and so was, presumably, known to them.
- 4.6. No report was received from the Indian Authorities of any pollution concerned with this incident, either from the jettisoned containers or directly from the vessel.
- 4.7. There were two deep tanks fitted for the carriage of vegetable oils. These were found to be common when the Salvors eventually gained access to the vessel and by subsequent inspection. Any presence of a slack ballast water ullage in these would have immediately produced a significant increase in the free surface effect which could have initiated an unexpected list.
- 4.8. The serious situation of the large list was stabilised and reduced. There was no explanation given as to why the main engine could not be restarted. Once remedial action had been taken the situation did not deteriorate indicating that the problem that caused the list was internal and related to the stability of the vessel when it sailed from the port of Kandla and any subsequent ballast or fuel transfer operations that may have been under way.
- 4.9. Once clear of the sediment laden estuaries or rivers it is common practice for vessels to re-organise their ballast. The sudden apparent increase of the list once outside the port is indicative of such ballast operations either loading into or out of the common port and starboard deep tanks, originally fitted to the vessel for the carriage of vegetable oils.
- 4.10. The arrest of the list, once it became critical, is indicative of the cause being operational and those operations ceasing after the list developed.
- 4.11. There was no report from the Master, Crew, Salvors or the Indian Coastguard of any structural damage to the vessel. It is therefore extremely unlikely that there was any fire, explosion or breach of the vessel's hull which could have been causative of the list.

- 4.12. The reports imply that some of the container cargo shifted from its stow - as it was subsequently replaced or restowed by the Salvors, using the ship's lifting equipment which was later operational. The strength of securing of the deck containers are also therefore brought into question.
- 4.13. The evidence of the commonality of the ballast tanks and the numerous leaking valves provide the environment under which, during minor ballasting or bilge pumping operations a small list can quickly develop into a major list once tanks become slack and the various levels of water within those tanks enables it to flow between them and, by a dampened free surface effect, increase the list to alarming proportions.
- 4.14. We understand that the Salvors, once they were given access, filled all ballast tanks and many slack bunker tanks with sea water. This had the effect of removing the free surface effect and securing the stability of the vessel
- 4.15. The temporary reduction in engine room manning should not have been a contributory factor in any ballast pumping operations that may have been taking place prior to the severe list developing.

5. **CONCLUSIONS**

- 5.1. The information available is not sufficient to draw an absolute Conclusion as to the cause of the apparent sudden list of the "MC PEARL."
- 5.2. The limited reports of the sequence of the development of the severe list, its stabilisation, the lack of any reported structural damage observed by the crew or salvors and the various indications as to the lack of water tight integrity between the tanks on board indicate that the cause was a procedural failure during some on board operations, most likely involving ballasting or de-ballasting of the two deep tanks, which, because of leaking valves and bulkheads between those tanks led to the sudden increase of the list on the vessel.

