

## **M/T „TOCPRO”**

***M/T „TOCPRO”PHOTO***

# **CARGO SYSTEM CONDITION INSPECTION REPORT**

***Name of Vessel: TOCPRO***

***Former names: NAUTILUS until 2007 July***

***Type of ship: OIL/CHEMICAL TANKER***

***IMO Number: 1234567***

***GRT: 3794 tons***

***DWT: 4738 tons***

***Date delivered: July 1996***

***Builder: MEYER SHIPYARD - BREMEN, GERMANY***

***Previous Class: +100 A1 Chemical Tanker Type A, SG up to 1,5, Ice Class 3***

***Present Class: Oil Tanker with Exemption according to Reg. 3.4 from Marpol Annex 1  
(not fitted with Oil Discharge Monitoring equipment and Oil/Water Interface detector)***

**Date of Inspection:** 10th of February 2014

**Place of Inspection:** Rostock, Germany. Rostock ship yard

**Inspector's Name:** Captain Bryan Crapton. Tanker Operations Chief Consulting Expert

**Client Name:** Haifisch Reederei

**M/T „TOC PRO” Cargo and Ballast System Risk Analysis (present condition)**

| <b>Risk Profile</b>  | <b>Low</b> | <b>Medium</b> | <b>High</b> |
|--|------------|---------------|-------------|
| <i>Hull Failure (There is a possibility for structural damages caused by ship-ice interaction during winter navigation)</i>                                      |            | ✓             |             |
| <i>Cargo tank failure</i>  |            | ✓             |             |
| <i>Ballast tank failure</i>  |            | ✓             |             |
| <i>Cargo damage (Off specification liquid cargo)</i>   |            |               | ✓           |
| <i>Cargo piping failure</i>  |            |               | ✓           |
| <i>Cargo machinery failure</i>   |            | ✓             |             |
| <i>Risk of marine pollution</i>  |            | ✓             |             |
| <i>Compliance with Condition Assessment Scheme (CAS) - for cargo tank wall thickness measurements and welded part conditions</i>                                 |            | ✓             |             |
| <i>Compliance with MARPOL Convention Annex II, Bulk Chemical Code (BCH) requirements (Ship constructed before 1 July 1986)</i>                                   |            | ✓             |             |
| <i>Possibility to get Certificate of Fitness (CoF) and approved Procedures and Arrangements (P&amp;A) Manual for the Carriage of Dangerous Chemicals in Bulk</i> |            | ✓             |             |
| <i>Compliance with International Safety Management (ISM) Code</i>  |            |               | ✓           |
| <i>Compliance with Ice Class standarts (expensive modifications)</i>   |            |               | ✓           |
| <i>Compliance with Classification Society standards</i>  |            |               | ✓           |
| <i>Compliance with shipping insurance provisions</i>   |            |               | ✓           |

| <b>Nr.#</b> | <b>Inspection Performed</b>  | <b>Comments</b>   |
|-------------|--|---|
| 1.          | <p><b>Cargo tanks</b><br/>(Condition: Satisfactory)</p> <p><b>Cargo pumps</b><br/>(Condition: Satisfactory)</p> <p><b>Cargo pumps hydraulic system</b><br/>(Condition: Poor)</p> <p><b>Cargo control and measurement instruments</b><br/>(Condition: Poor)</p> <p><b>Cargo pipelines and Cargo valves</b><br/>(Condition: Poor)</p> <p><b>Cargo system pressure test result:</b><br/>N/A</p> | <p><b>12 Cargo tanks Epoxy coated (ex Zinco-silicate) fitted with:</b></p> <ul style="list-style-type: none"> <li>• 12 Deepwell hydraulic pumps (125 m<sup>3</sup>/hr – designed capacity) – to be overhauled and checked all moving parts – bearings, rings, shaft, impellers, etc.. (because of prolonged system stand by and due to ice damage – it was found 150 mm of ice at the bottom of each cargo tank). In addition it was found that the cargo pump activation cabinet (hydraulic cabinet) was filled with water and completely rusted.</li> <li>• 2 Stripping Twinscrew pumps (6 m<sup>3</sup>/hr – designed capacity) – situated in Pump room – to be checked and overhauled</li> <li>• Local Ullage gauge – to be overhauled (most probably its connected to High Level alarm system)</li> <li>• Independent High High level alarm was not find – to be installed as per ISGOTT</li> <li>• Opened type sampling and connection to UTI system on every hatch covers</li> <li>• 3 Temperature sensors inside every tank – to be checked and callibrated</li> <li>• Cargo valves – Ball, Hand type – to be overhauled</li> <li>• P/V valves – 20/70 mbar – to be tested</li> </ul> |
| 2.          | <p><b>Cargo tank heating system</b><br/>(Condition: Poor)</p>  | <p><b>Individual Ducted Hot water Heating external to tanks:</b></p> <ul style="list-style-type: none"> <li>• The procedure is following: Freshwater is heated by exhaust gas boiler and pumped to special closed compartment on cargo tank/ballast tank side (700 mm x 5 mm – cargo tank half side) following to cargo tank/ballast tank connection on complete bottom side and back to boiler. The system is contolled by economiser vessel, situated on main deck.</li> <li>• With this system its possible to heat the glycerine to desired temperature of 40°C and to heat the ballast tanks during vessel ballast condition at rough winter, means that during winter time the system must at all the time running to prevent freezing/destroying the whole system.</li> <li>• During inspection it was found that the system is under reconstruction, many pipes were removed and replaced. The condition of outlet and inlet valves is unknown.</li> </ul>  |

| Nr.# | Inspection Performed  | Comments   |
|------|---|--|
| 3.   | <p><b>Ballast system</b><br/>(Condition: Poor)</p> <p><b>Ballast system pressure test result:</b> N/A</p> | <p><b>Double bottom tanks (1 P/S to 8 P/S):</b></p> <ul style="list-style-type: none"> <li>• Vessel is in full comply with SBT requirements under Marpol for all the ballast tank</li> <li>• Ballast tank in high rusty condition. No anode system provided. Not dry. Ice accumulation on bottom side were found. All system to be pressure checked to ensure the operation of valves and pipings.</li> <li>• Ballast system pumps (2x main and 2xstripping) to be checked.</li> </ul> |

*(Ship's cargo and ballast systems photos attached at the end of this document)*

**General Conclusion from Inspection Findings by Inspector:**

*M/T "TOCPRO" cargo system is at present moment in satisfactory condition. Cargo system may be used for the carriage of Clean Petroleum Products (CPP) and light chemicals in bulk (MARPOL Annex II Category "Z") after significant reconditioning, survey and certification.*

**HOWEVER:**

*The vessel's cargo system needs extremely high investments as per latest SOLAS, MARPOL Conventions, IBC, BCH Codes and ISGOTT requirements to sail inside European waters.*

*There is a possibility for structural damages caused by ship-ice interaction during winter navigation.*

*There is a possibility that tanker cargo heating system will not be capable of raising the cargo temperature to the required level and maintain it during discharge (more than 40°C). Especially in winter.*

*It is expected that in most cases the cost of marine and cargo insurance will be high due to vessel's age and condition, so difficulties can arise with time charterparty agreements.*

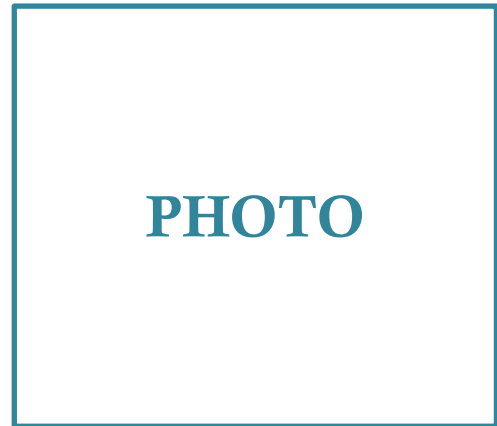
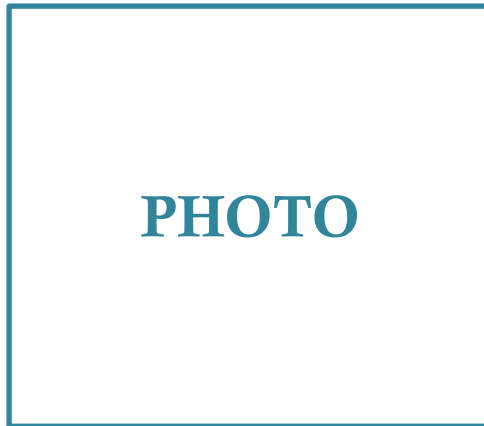
*We suppose that the other vessel's systems and equipment (Ship Machinery, Navigation equipment) require high investments as well.*

*It is expected that invested funds will hardly make a profit soon. Considering the age of the ship it is most likely impossible.*

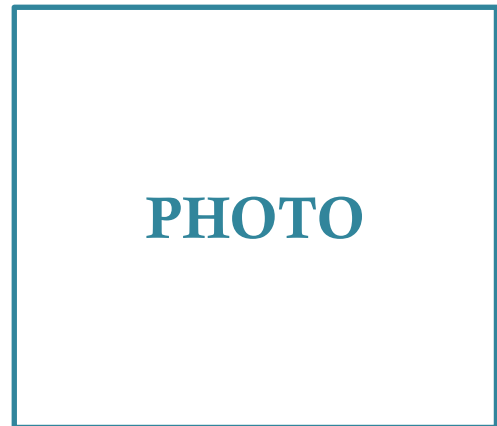
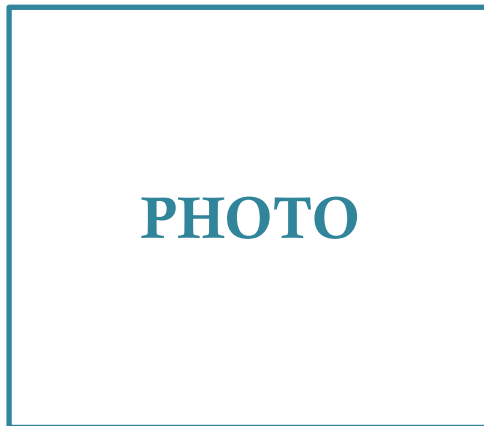
***There is no any benefit to make investments and manage m/t „TOCPRO" in future unless it agrees with your own reason to do so.***

***M/T „TOCPRO” Cargo and Ballast systems photos:***

***Cargo tanks:***



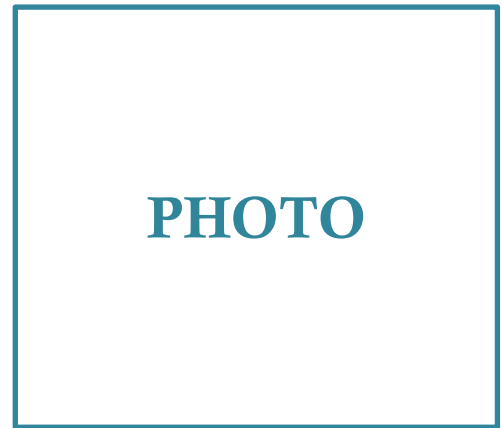
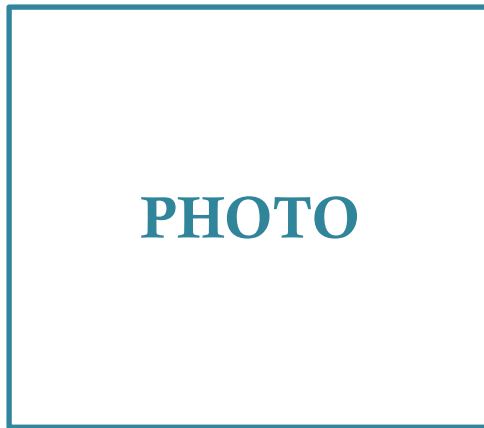
***Cargo pumps:***



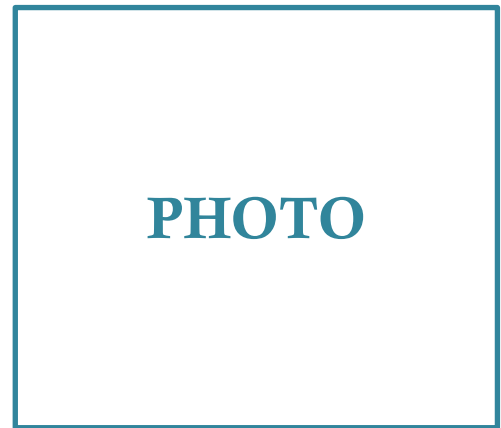
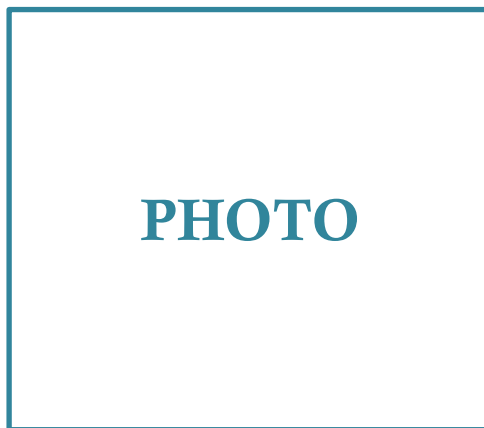
***Cargo pipelines:***



***Ballast tanks:***



***Cargo tank heating system:***



***M/T „TOC PRO” Cargo System Inspection report issued by:***

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