M.T. TZ GLORY

TECHNICAL REPORT

No.: CJPG-JS-22-KY-468

INSPECTED IN TAIZHOU, CHINA

12th October，2022

TECHNICAL REPORT of MT TZ GLORY

1. Statement

Entrusted by the customer, Zhejiang Shipping Exchange Market Co., Ltd., organized the surveyors to have conducted a technical condition inspection of "TZ GLORY", and issue the technical report based on the onboard condition and the ship information provided by the transferor (ship owner). This report is intended for the sole use of a better knowledge for any potential clients. The report is subject to any access restrictions as described herein, and always subject to the level of cooperation and completion of all technical files afforded to the surveyors during the inspection itself. All details in this report are given in good faith, and without any guarantee. If there is any discrepancy, the actual condition of the ship shall prevail. Zhejiang Shipping Exchange Market Co., Ltd shall not undertake any legal responsibility.

2. Principal Particulars

Name of Ship	TZ GLORY	IMO No.	9576832
Type of Ship	CHEMICAL/OIL Tanker (IMO II)	Class	ABS
LOA	142.50m	Flag	Liberia
LBP	132.60m	Port of Register	Monrovia
MLB	23.00m	Ship Hull	Double bottom and double hull
MLD	12.60m	Trading Range	Unrestricted
Scantling Draft	9.20m	Shipbuilder	Zhejiang Hongxin Shipbuilding Co., Ltd
Gross Tonnage	11386	Date of Keel laying	July 1st, 2009
Net Tonnage	5590	Date of Delivery	October 18th, 2022

Max. Deadweight	18187.5t	Model of M/E	MAN-B&W 7S35MC-MK7
Cargo Tank Capacity	20299.4m³	Rated Power/Rated Speed/No.	5180KW×173r/min × 1 set
Light weight	5953.78t	Manufacturer of M/E	STX Engine Co.,Ltd. Korea

3. Overview

3.1 In General

- The ship was built as chemical and oil ship (IMO II) with double bottom and double hull, driven by single engine with single propeller, stern engine. The ship was a newly built with bulbous bow, forecastle and poop. The ship has 14 tanks in total, 12 of which are liquid cargo tanks (NO.1-6, P&S) and 2 are slop tanks (P&S) with double bottom and double hull structure. SIGMA PHENGUARD epoxy special coating is used for cargo tanks and slop tanks. 12 cargo heaters were equipped on deck for liquid cargo tanks. The ballast water treatment system (BWTS) has been installed. The approval of PSPC Exemption was achieved on October 18, 2021, exempting the compliance with the PSPC requirement of SOLAS regulation II-1/3-2. Dry docking date of the ship is September 10, 2022.
- According to International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk dated October 18th, 2022, 717 types of the products are fitted for carriage, consisting of Category X 68, Category Y 463, Category Z 166 and Category OS 20.
- **Class Notation**

  Assigned the Class: ✠A1, Chemical Carrier, Oil Carrier, ESP, Ⓔ, ✠AMS, ✠ACCU

  Additional notations: BWT, RRDA, TCM, UWILD, VEC
- As advised by the Sellers, the service speed of the ship is about 14 knots, main engine oil consumption is about 15.5t/day, auxiliary engine oil consumption is about 1.5t/set/day;

eco speed is about 11 knots, main engine oil consumption is about 11.5t/day, auxiliary engine oil consumption is about 1.5t/set/day.

3.2 Main Equipment Configuration

The ship was equipped with 1 set of main engine and 3 sets of main generators. The main technical parameter is as follows:

Equipment Name	Qty	Type	Parameter	Manufacturer	Parent Engine NOx Emission Value	Existing Certificate Meets
Main Engine	1	MAN-B&W 7S35MC-MK7	5180KW×173r/min	STX-Korea	14.8g/kWh	Tier I
1# Generator	1	HFC6 502-14K	520KW×AC450V	Zhenjiang China Marine Xiandai Gen Co., Ltd.	/	/
1# Diesel Generator	1	5DK-20e	570KW×720r/min	An Qing CSSC Diesel Engine CO., Ltd	/	Tier II
2# Generator	1	HFC6 502-14K	520KW×AC450V	Zhenjiang China Marine Xiandai Gen Co., Ltd.	/	/
2# Diesel Generator	1	5DK-20e	570KW×720r/min	An Qing CSSC Diesel Engine CO., Ltd	/	Tier II
3# Generator	1	HFC6 502-14K	520KW×AC450V	Zhenjiang China Marine Xiandai Gen	/	/

				Co., Ltd.		
3# Diesel Generator	1	5DK-20e	570KW×720r/min	An Qing CSSC Diesel Engine CO., Ltd	/	Tier II

Notes: According to International Pollution Prevention Convention MARPOL ANNEX VI Regulation 13: when 130r/min≤ rate speed n＜2000r/min, the maximum NOx emission limits for diesel engine conforms Tier II as follows:

(1) When n=173 r/min, the maximum limits $44 \cdot n^{(-0.23)}$=13.4g/kWh

(2) When n=720 r/min, the maximum limits $44 \cdot n^{(-0.23)}$=9.7g/kWh

The ship was equipped with FRAMO hydraulically driven deep well pumps, main technical data as follows:

Model	Capacity(m^3/h/set)	Qty	Power（kW）	Position
SD150-6	335	12	105.3	Liquid cargo tank
SD100-6	100	2	42.8	Slop tank
SB200-3	400	2	27.9	Ballast tank (mid)
TK-80	70	1	21.0	--

3.3 Other Equipment

NO.	EQUIPMENT	MANUFACTURER
1	BWTS	LEE'S ELECTRIC
2	OIL SUPPLY MODULE	Alfa Laval
3	FO PURIFIER	Alfa Laval
4	M/E LO SELF-CLEANING FILTER	Alfa Laval
5	FO BOILER	Alfa Laval
6	COMPOSIT BOILER	JIANGYIN SANJIE
7	HOT WELL	JINGJIANG DONGXING
8	INCINERATOR	NANJING LUZHOU
9	FRESH WATER GENERATOR	Alfa Laval

10	OIL-WATER SEPERATOR	WUXI YIHANG
11	SEWAGE WATER TREATMENT PLANT	WUXI YIHANG
12	M/E STARTING AIR COMPRESSOR	TAIZHOU HAIGUANG
13	WORKING AIR COMPRESSOR	ATLAS
14	CO2 FIRE-FIGFHTING SYSTEM	ZHEJIANG YONGHANG
15	DECK FOAM FIRE-FIGFHTING SYSTEM	DESMI
16	E/R WATER MIST FIRE-FIGFHTING SYSTEM	DESMI
17	E/R PUMP	HEISHIN
18	AIR CONDITION & REFRIGERATION SYSTEM	SINDEX
19	FAN	QINGDAO HENET
20	INERT GAS SYSTEM	NANTONG YATAI
21	REMOTE CONTROL VALVE SYSTEM	EMERSOM
22	P/V VALVE	PROSAVE
23	ODME	JOWA
24	FIXED TANK WASHING MACHINE	POLARMARINE
25	TANK MONITORING SYSTEM	MASASINO
26	REMOTE LEVEL GAUGING SYSTEM	MASASINO
27	GAS DETECTION SYSTEM	CONSILIUM
28	MAIN SWITCHBOARD	SIBO
29	BRIDGE CONTROL CONSOLE&CARGO CONTROL	SIBO
30	Monitoring and Alarm System	SIBO
31	BMS	SIBO
32	NAVIGATION SYSTEM	FURUNO
33	NTERCOM SYSTEM	JIAXING KEXUN
34	BOW THRUSTER	KAWASAKI
35	HYDRAULIC SLEWING CRANE	JIANGSU ANHAI
36	PROPELLER	DALIAN ANDA
37	WINDLASS & MOORING WINCH	ZHENJIANG DAHAO
38	FIRE ALARM SYSTEM	CONSILIUM
39	GYRO COMPASS & MAGNETIC COMP	NANJING ZHAOGE

40	STEERING GEAR	ZHEJIANG WANTONG
41	LIFEBOAT&RESCUE BOAT	ZHEJIANG WANTONG
42	PISTON HORN WITH HEATER	IBUKI
43	CARGO TANK COATING	PPG
44	PAINT	IP

3.4 Cargo Tank Capacity

According to the capacity plan of the ship, the tank capacity as follows:

No.	Frame #	Tank Name	Capacity (m^3)
1	#133+0.7m～#156	NO.1 Cargo Tank (P/S)	1398.6/1390.7
2	#114+0.7m～#135	NO.2 Cargo Tank (P/S)	1641.5×2
3	#95+0.7m～#116	NO.3 Cargo Tank (P/S)	1699.3×2
4	#76+0.7m～#97	NO.4 Cargo Tank (P/S)	1699.3×2
5	#57+0.7m～#78	NO.5 Cargo Tank (P/S)	1699.4×2
6	#37～#59	NO.6 Cargo Tank (P/S)	1806.7/1801.2
7	#138～#156	Slop Tank P/S)	212.2/211.0
In total			20299.4

4. Class Status and Survey

- **Statutory Certificates or Documents of Compliance**

No.	Certificates Description	Issued Date	Expiry Date

1	Interim Class Certificate	2022.10.18	2023.03.17
2	International Tonnage Certificate	2022.08.16	--
3	International Load line Certificate	2022.10.18	2027.10.17
4	Safety Construction Certificate	2022.10.18	2027.10.17
5	Safety Equipment Certificate	2022.10.18	2027.10.17
6	Safety Radio Certificate	2022.10.18	2027.10.17
7	International Oil Pollution Prevention Certificate	2022.10.18	2027.10.17
8	International Sewage Pollution Prevention Certificate	2022.10.18	2027.10.17
9	International Air Pollution Prevention Certificate	2022.10.18	2027.10.17

Notes: The above certificates are in the validity period.

5. Technical Status

5.1 Shell Plate

The ship's name, port of registry, load line, tank boundary, tug and other marks on the shell plate were found clear and full painted. The welding seams were found to be good and smooth. The rudder blade and rudder post above the water line were found complete in structure, and the coating at the coupling flange of rudder carrier was found intact, basically without corrosion. The condition of hull under water is unknown.


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IMO 9576832

5.2 Fore /aft deck and Deck Machinery

The coating on the forecastle and poop deck was found completely attached, and the coating of the deck bollards and small hatch cover was found basically complete with local damage.

2 sets of windlasses were installed on the forecastle deck, and no obvious corrosion was found on the windlass body, but local slight corrosion was found at the lever chain stopper and the hydraulic pipeline connection. The foundation of windlass was found complete, and the coating of the reinforcing brackets was found complete without obvious corrosion. The anchor chain was found rusted without significant thinning.

2 sets of winches were installed on the aft main deck. The coating of the winch body was found basically complete, and the foundation was slightly rusted.

5.3 Side Ballast Tank and Forepeak Tank

No.4 side ballast tank (S) and forepeak tank were selected for inspection during the inspection.

There were 12 ballast tanks (NO.1-6, P&S) with 2 ballast pumps in mid-section: model SB200-3, capacity 400m^3 /h/set. The frame structure, platform in the side ballast tank were found complete with partial slightly rusted.

The interior structure of the forepeak tank was found complete without deformation and cracks, and the coating was found basically intact without obvious corrosion.






5.4 Cargo Tank and Control System

5.4.1 Cargo Tank Structure and Piping

There were 12 cargo tanks (No.1-6, P&S) and 2 slop tanks (P&S) onboard. There were stainless steel heating coils in slop tanks; 12 cargo heaters were installed on deck for heating the cargo tanks by means of vapor circulation, i.e. the oils are pumped out from the cargo tanks and pass the cargo heaters on deck and then return to the cargo tanks. The cargo tanks and slop tanks were coated with SIGMA PHENGUARD epoxy. The materials of the deep well pump were stainless steel.

The coating of the flying passage was found basically complete, the grille and railings were intact. There was no obvious corrosion on the cargo tank cover, and the opening / closing mechanism of the tank cover was found flexible without obvious corrosion.

The coating of the deck frames in the cargo tank area was found complete. The deck frames were attached by double-sides continuous welds. The longitudinal and strong beams were found complete without obvious corrosion, deformation and cracks.

The coating of the deck pipeline was found basically intact, and without obvious corrosion on the nozzle flange. The PV vent valves of the cargo tank were found complete without obvious corrosion.

During inspection, except for NO.1 cargo tank (S) and NO 6 cargo tank (S) where were unable to enter, the other rest of the cargo tanks were carried out a general survey. The epoxy coating surface in the tank was found basically complete without damage or aged. The ladder,

temperature monitoring and liquid level monitoring pipelines were all made of stainless steel, with relatively good appearance. As informed by the ship staff, partial touch-up has been done recently.











5.4.2 Control System

The cargo monitoring room of the ship is located in the front of the poop deck, equipped with monitoring, liquid level radar, valve remote control and pump remote control. The appearance of the console and the monitoring display screen were found in good condition.

During the inspection, the monitoring screen was found in working condition, and all monitoring data and parameters were clear and complete.

The ship is equipped with a set of FRAMO hydraulic valve control station on the main deck, and the drive motor is ABB. The appearance of the equipment was found in good condition, and no obvious corrosion on the hydraulic pipeline, and the fireproof insulation laying was found complete without obvious damage.






5. 5 Bridge Equipment

The cleanliness of wheelhouse was found in good condition, and no obvious damage on the insulation laying and decoration facilities. The bridge equipment was found complete with good appearance. The wheelhouse is equipped with chart, navigation books, national flags, and information such as oil pollution emergency plan deployment tables. 2 sets of azimuth compasses were equipped outside the wheelhouse.






5.6 Engine Room and Equipment Condition

The structure and the coating condition in engine room were found complete without obvious paint damaged and corrosion. Partial bilge pipeline was found slightly rusted. The cable layout was found basically regular without obvious damage on the insulation. Some

stairways, railings, corrugated steel plates and other facilities visible in the engine room were arranged completely with generally cleanliness.

5.6.1 Main Engine

The surface coating of the main engine was found basically complete, no obvious leakage was observed, partial pipelines were found slightly rusted, and the nameplates were found complete and clear. The main engine was built in 2011.

5.6.2 Main Generators

The coating of main generator was found basically complete without obvious oil stain on the foundation. No obvious damage was found on the cable, and the nameplate was identified clearly.

The watertight door of the emergency generator room was found complete in structure, the indoor fire insulation was laid in place, the generator set was found normal in appearance,

and the nameplate was identified clearly.





5.6.3 Engine Control Room

The self-closing door of the engine control room and the indoor fire insulation laying were found basically complete. The console and main switchboard were located in the house. The structure in the room was found complete with good appearance. The appearance of the monitoring instrument was found normal, the indicator lights and button protection devices were basically complete without damage.

5.6.4 Boiler

The ship is equipped with 2 sets exhaust gas combined boilers for fuel oil heating and daily use. The boiler body was found complete in the structure without obvious corrosion. The insulation laying of the boiler air duct and exhaust pipe was found no obvious damage, and the nameplate was identified clearly.

5.6.5 Steering Gear Room

The protective railings in the steering gear room were found complete, the liquid level gauge of the hydraulic oil tank was at the normal oil level. The rudder angle indicator has been calibrated with the rudder angle indicator on the bridge. The coating of steering gear was found to be in good condition, and oil cylinder was free from obvious leakage.


5.6.6 Other Equipment in ER

The engine room is equipped with air compressor, air reservoir, fuel conditioning module, oil separator, oil-water separator, sewage treatment plant, various pumps and motors, etc. No obvious abnormity was found in the appearance, without oil stain.












5.7 Fire Fighting and Life Saving Equipment

The ship is equipped with foam fire extinguishing system in the cargo hold area, and CO2 fire extinguishing system in the engine room.

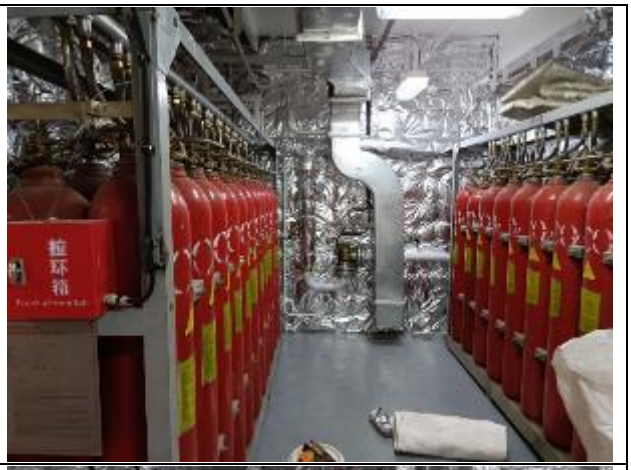
The fire insulation of foam room was found laid in place, and the foam generator and pipeline were found basically free of corrosion. The inspection marks were found complete.

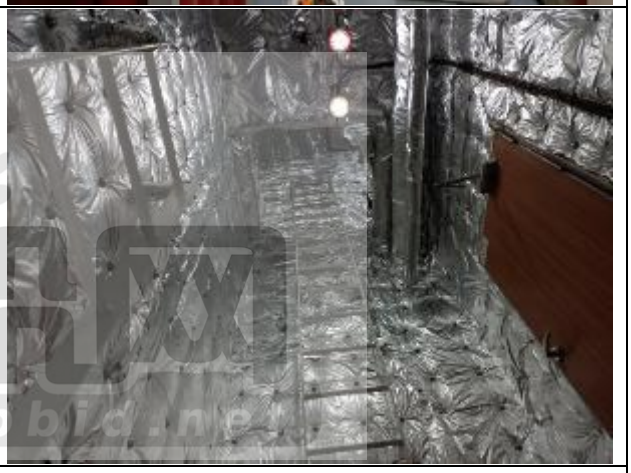
The weather tight door of CO2 room was found complete, and the indoor fire insulation was laid in place. The release valve and pipeline of CO2 bottle were found free of obvious corrosion. The appearance of the release control cabinet was found to be in good condition and the operation instruction and inspection marks were found complete.

The fire insulation of the emergency passage in the engine room was found laid in place without damage. The appearance of the self-closing door was normal, and the life ladder in

the channel was found complete and in good condition.

The ship was equipped with one lifeboat at the stern, without obvious crack and damage on the hull external.

6. Conclusion

The ship was built as a chemical/oil tanker (IMO II) with double bottom and double hull, and driven by single engine with single propeller, stern engined. It was delivered on October 18th, 2022, which is a newly built ship. The maximum deadweight is 18187.5t; total cargo capacity is 20299.4m³. The following conclusions were given against the ship information and survey analysis.

6.1 Survey and Operation Status

The ship was built under ABS classification and delivered on October 18th, 2022, The date of keel laying was July 1st, 2009. As advised by the Sellers, the service speed of the ship is about 14 knots, main engine oil consumption is about 15.5t/day, auxiliary engine oil consumption is about 1.5t/set/day; eco speed is about 11 knots, main engine oil consumption is about 11.5t/day, auxiliary engine oil consumption is about 1.5t/set/day. The ballast water treatment system (BWTS) has been installed. The approval of PSPC Exemption was achieved on October 18, 2021, exempting the compliance with the PSPC requirement of SOLAS regulation II-1/3-2. Dry docking date of the ship is September 10, 2022.

6.2 Shell Plate and Deck Machinery

The shell plate was found in good condition with high quality welding. Deck machinery was found in good condition, only several devices were observed slightly rusted. The coating in the side ballast tank was found in good condition with slightly corrosion. The deck piping was basically intact, no obvious corrosion or leakage was observed.

6.3 Cargo Tanks and Pipeline

There were 12 cargo tanks and 2 slop tanks onboard, each tank was equipped with one FRAMO pump. The epoxy coating was applied in the cargo tank and found complete. Cargo heaters were equipped for cargo tanks. Stainless steel heating coils were installed in slop tanks. The cargo pump and pipeline were made by stainless steel with relatively good appearance.

There were 1 set of cargo tank monitoring equipment and hydraulic valve control station.

6.4 Main Equipment Condition and Life-saving Device

The main engine comes from STX (Korea), and was built on 2011. The bridge equipment was found complete with good appearance. The main equipment was found in good cleanliness, no obvious oil stain was observed. The fire-fighting equipment was found arranged completely, and the life-saving device was found in good condition.

Zhejiang Shipping Exchange Market Co., Ltd

21st October, 2022