

M.V “MING ZHOU 58”

Technical Report

【CJPG-JS-23-KY-412】

Technical Report

1. Summary

Entrusted by the customer, our company organizes the surveyor to inspect the technical condition of "MING ZHOU 58" and issue the technical report according to the ship data provided by the customer. The report reflects the ship's technical status at the time of inspection and is for reference only. In case of any discrepancy, the current situation of the ship shall prevail, and our company shall not assume legal liability. The specific report is as follows:

2. Principal Particulars

Ship Name	MING ZHOU 58	PoR	Ningbo, China
Type of Ship	Bulk Carrier	Identification No.	CN19897200502
LOA/ LBP	216.00/201.60m	Class	CCS
MLB	31.80m	Trading Area	Offshore
MLD	16.95m	Shipbuilder	Nikolaev Shipyard
Summer Draft	12.300m	Date of Keel Laying	July 20th, 1989
Gross Tonnage	31638	Date of Delivery	September 14th, 1990
Net Tonnage	17717	Model of M/E	8L60MC
DWCC	52600t	Rated Power/Rated Speed /No.	9500kW×100r/min×1 set
Light Displacement	13400t	Manufacturer of M/E	Bryansk Machine building Plant

Note: The above data comes from the ship certificates provided by the owner and is for

reference only.

3. Ship Description

3.1 Overview

The ship was built as a bulk carrier with single deck, and driven by single engine and single propeller. The ship has 10 watertight transverse bulkhead and 8 cargo holds with folding hatch cover. The ship is currently in operation. According to the certificate, the ship will reach 33 years of age on September 13th, 2023.

3.2 Major Equipment

3.2.1 Engine Machinery

Machinery	No.	Model	Parameter	Manufacturer
Main Engine	1	8L60MC	9500kW×100r/min	Bryansk Machine building Plant
1#2# Main Generator	2	HFC6 456-84K	400kW×400V	Zhenjiang China Marine Xiandai Gen Co., Ltd.
Diesel Engine of 1#2# Main Generator	2	6DE-18	430kW×750r/min	Anqing CSSC Diesel Engine Co. Ltd
3# Main Generator	1	1FC6501-6SA4 2	640kW×400V	Jiali Elec. Machinery Co., Ltd.
Diesel Engine of 3# Main Generator	1	XCW6200ZD	698kW×1000r/min	Chongqing Weichai
Emergency Generator	1	--	200kW×400V	--
Diesel Engine of Emergency Generator	1	12B-300FC1	300kW×1500r/min	

Steering Gear	1	--	2000kN • m	MA WNHA PYNEBAR
Windlass	2	--	85kW	--
Propeller	1	Fixed type	Bronze Dia.6000mm	--

3.2.2 Communication and Navigation Equipment

Equipment	No.	Model
ECS	1	HM-5817
GPS	1	GP-150
Magnetic Compass	1	ARK60451
Gyro Compass	1	SPERRY-MK-37
Radar	2	FAR-2817
Echo Sounder	1	DS-2006
AIS	1	FA-150
GPS	1	GPSMAP 189C
Rudder Angle Indicator	1	HA3AA BNEPEA
VHF-Radiotelephone 1	1	FM-8800S
VHF-Radiotelephone 2	1	GM600
MF/HF radio installation	1	SRG-1150DN
TWO-WAY VHF	3	STV-160
Ship earth station (SES)	1	FELCOM 18
EPIRB	1	Tron 40S

SAR transponder	2	ACR
NAVTEX receiver	1	NX-700A

3.2.3 Cargo Hold Capacity

According to the capacity plan of this ship, the cargo hold capacity is distributed as follows:

No.	Capacity (m ³)	Hatch Dimension (m)
No.1	6970	12.8×13.6
No.2	7470	12.8×17.0
No.3	7060	12.8×17.0
No.4	8230	12.8×17.0
No.5	6540	12.8×17.0
No.6	7810	12.8×17.0
No.7	7710	12.8×17.0
No.8	8370	12.8×17.0
Total	60160	--

4. Class Status and Surveys

4.1 Statutory Certificates or Documents of Compliance

No.	Certificates Description	Issue Date	Expiry Date
1	Certificate of Registry	2022.11.20	2023.09.13
2	Classification Certificate	2020.10.16	2023.09.13
3	Minimum Safety Manning Certificate	2022.11.20	2023.09.13
4	Transportation Business License	2022.10.20	2023.09.13

5	Domestic Ship Safety and Environmental Protection Certificate	2022.10.19	2023.09.13
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The certificates listed above are validity.

4.2 Class Surveys

The last special regular survey has been completed on September 29th, 2022 in Zhoushan, and the ship will reach 33 years of age on September 13th, 2023.

5. Performance Records

5.1 Speed and Fuel Consumption

The fuel oil consumed by the main engine is 180CST or MGO.

Condition	Economic Speed kn	Rotary Speed rpm	Fuel Consumption (t/d)
Laden	12.0	75	19.0
Ballast	9.8	70	18.5

The fuel oil consumed by the auxiliary engine is 180CST or MGO.

Condition	Working Set	Fuel Consumption (t/d)
Sailing	2	HFO1.6T、MGO1.6T
Berthing and Departing	1	HFO 1.6T or MGO 1.6T

5.2 Last 10 Ports and Cargos

No.	Date of Arrival	Port	Cargo
1	2023.07.30	Liuheng-Caofeidian-Liuheng	Coal 50223t
2	2023.07.15	Liuheng-Caofeidian-Liuheng	Coal 46693t
3	2023.07.04	Liuheng-Caofeidian-Liuheng	Coal 50281t
4	2023.06.21	Liuheng-Caofeidian-Liuheng	Coal 50021t

5	2023.06.08	Yueqing-Jingtang-Liuheng	Coal 50262t
6	2023.05.29	Liuheng-Caofeidian-Yueqing	Coal 49877t
7	2023.05.17	Liuheng-Jingtang-Liuheng	Coal 49816t
8	2023.05.04	Liuheng-Qinhuangdao-Liuheng	Coal 50076t
9	2023.04.22	Yueqing-Caofeidian-Liuheng	Coal 50236t
10	2023.04.10	Liuheng-Caofeidian-Yueqing	Coal 50370t

6. Hull Thickness Measurement

The ship has completed hull thickness measurement at Zhoushan Jinhai Shipyard On September 29th, 2022, and the results are as follows:

No.	Location	Original Thickness (mm)	Corrosion Rate (%)	Ultimate Corrosion Rate (%)
1	Main Deck (Port Side)			
1.1	Fore area	12-24	15.0	30.0
1.2	Midship area	26-30	8.8	
1.3	Aft area	20-24	11.0	
2	Cargo Hold (Port Side)			
2.1	Deck longitudinal	10	16.0	30.0
2.2	longitudinal in top side ballast tank	10	16.0	
2.3	longitudinal on side shell	10	16.0	
2.4	Longitudinal on bulkhead in top	10	16.0	

	side ballast tank			
2.5	Bulkhead in top side ballast tank	10-20	14.0	
2.6	Inclined plate in top side ballast tank	14	17.1	
2.7	Inner bottom plate	22	21.4	
2.8	Inner bottom inclined plate	16-22	19.5	
2.9	Bottom longitudinal	10	11.0	

The port side of the main deck has corrosion rate of 15.0%, and the inner bottom plate of the cargo hold has significant corrosion rate of 21.4%.

7. Technical Status

7.1 Shell Plate

The paint on the shell plate was found to be intact, and the ship name, draft marks were partially worn, while the port of registry and IMO marking were clear and full painted.

The overall condition of the shell plate was found average, with local coatings damage and corroded.

The bulwark at the bow and stern was found to be free of deformation, but local paint damage. The railings on both sides were found intact without deformation.







7.2 Main Deck and Deck Machinery

The overall condition of the main deck was found general good, with local painting damage and rust. The internal condition of the ballast tank was unknown, because the watertight manhole cover was rusted and could not be opened.

The condition of the forecastle deck was found general good, with pitting corrosion and no deformation of the bulwark brackets. The body structure of the windlasses was found basically intact, with obvious painting damage on the body and base. The body structure of mooring equipment such as bollard was found intact, with local wear and corrosion. The mooring rope was found to be free of significant breakage.

Two sets winches were installed on the main deck aft, with basically intact paint on the body. The surface of the guide pulley and bollard was found locally corroded.







7.3 Cargo Holds

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The ship has 8 cargo holds, with folding hatch cover.

The painting of the hatch cover was found intact, without significant damage. The reverse side of the hatch cover was found corroded, as well the edges of the reinforcement. The fastening wedge was found slightly rusted, without damaged on the rubber.

The condition of the hatch corner area was found average, with local cracking mark. The rust marks were found on the batten and water guide channel on the top plate of the hatch coaming.

The reinforced bracket of the hatch coaming was found locally corroded, and the faceplate end of the bracket was welded to the main deck, with local corrosion.

During the inspection, the ship was unloading, and no significant depression was found on bulkhead of the cargo hold. The local deformation was found on the inner bottom plate. The stairway in the cargo hold was partially covered by coal, and no significant

damage was found in the visible parts.

The painting of the fire pipeline around the hatch coaming was found to be in good condition, and the fire hydrant was found completely arranged. The ventilation pipe of the cargo hold was found to be basically intact and locally corroded.





7.4 Bridge Equipment

No significant deformation or water leakage was found on the ceiling of the wheelhouse, the flame retardant floor was basically intact, and the water tightness of the front window was found good.

The structure of the door frame was found complete without deformation, with a sense of jamming when opening and closing, the bottom sliding groove was found slightly rusted, and the watertight adhesive strip was intact and undamaged.

The appearance of the console and relative equipment was found good, and the communication equipment was basically configured according to the certificate.





7.5 Engine Room and Machinery

7.5.1 Main Engine

The main engine is equipped with two turbochargers, and the body coating was found complete. There was oil stains attached to the body, and the binding material for the exhaust pipe was found basically complete.

The nameplate of the main engine was found complete, the control instruments beside the M/E were basically complete, without significantly damaged on dial.

The lower part of the scavenge box was found to be connected to multiple drip tray, with signs of leakage.

According to the monthly report provided by the owner, the 2 # and 5 # cylinders of the M/E have undergone maintenance recently.

The working hours of the M/E components are as follows:

Cylinder No.	Liner	Piston Head	High Pressure Oil Pump	Main Bearing	Rod Bearings	Running Time
1	32960.7	11411.2	990.2	1504.5	8293.0	2530.3
2	10764.1	11411.2	2743.9	1683.7	8206.0	1169.8
3	--	34867.2	2528.8	2289.5	8206.0	7706.9
4	--	25224.2	2458.0	1589.8	8206.0	7706.9
5	--	11395.3	990.2	1589.8	5827.8	2530.3
6	30516.7	34867.2	2528.8	2528.8	2528.8	3479.4
7	15677.7	19407.8	2528.8	2528.8	2528.8	2528.8
8	10562.2	10567.2	993.2	2528.8	5827.8	2528.8





7.5.3 Main Generator

The overall appearance of the 3 sets main generators in the engine room was found clean, without significant oil stains on the base, as well coating damage on the body. The pipelines and components were found intact without damage.

The weathertight door and door frame of the emergency generator room were found to be free of significantly rusted, without aged or deformed on the waterproof adhesive strip. The structure of the ventilation grille was found complete. The appearance of the emergency generator was found clean, the liquid level in the fuel tank was normal, and the steel wire of the quick closing valve was free of significantly rusted.

During the inspection, the 3 sets main generators were found to be in working and the parameters were normal.

Main Generator	1#	2#	3#
Total Running Time	17877.7	20833.5	44244.3

Running Time After Major Repair	3290.7	5539.6	2364.7
Running Time After Turbocharger Overhaul	5548.2	9545.2	1052.8



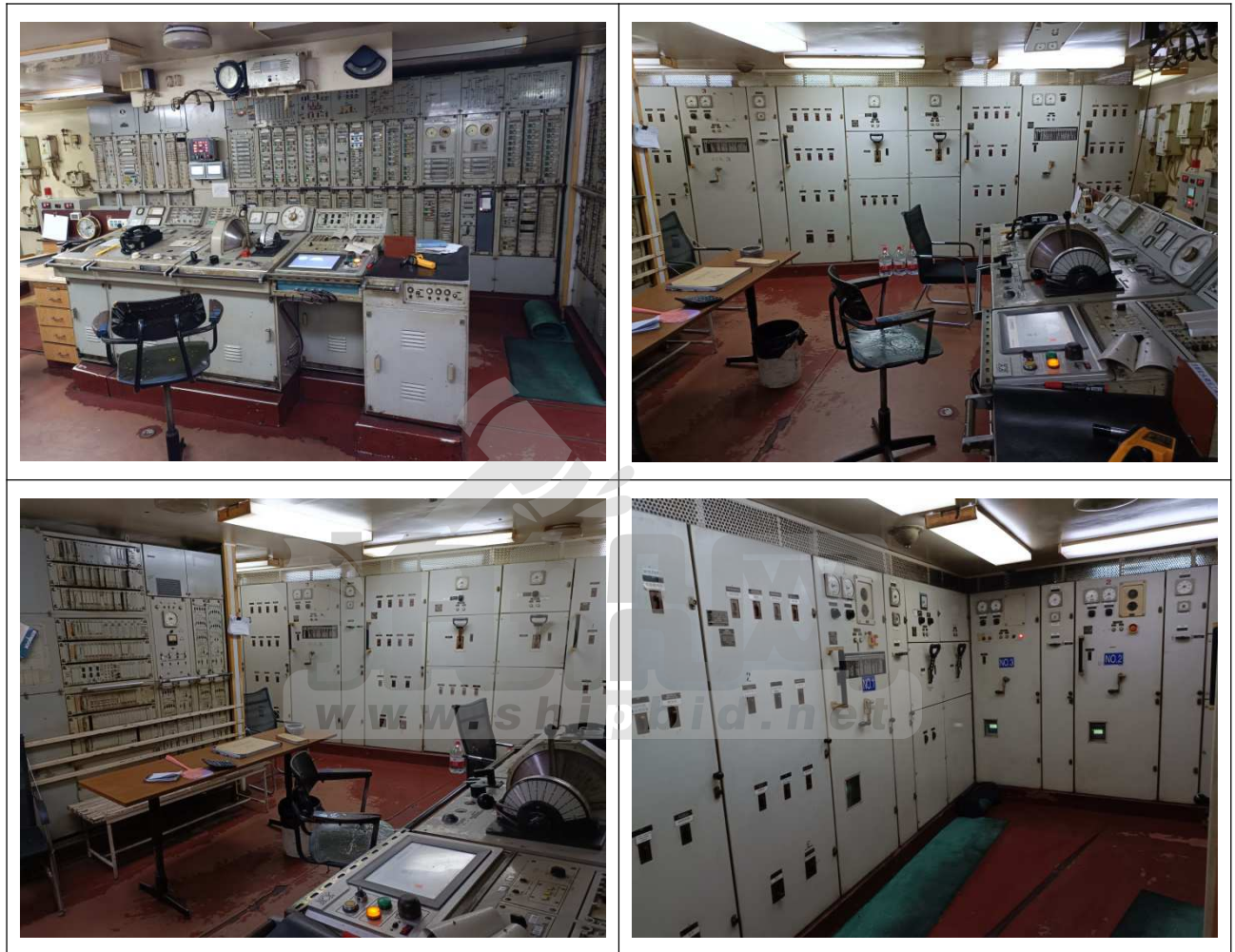
7.5.4 Engine Control Room

The self closing door, indoor lighting fixtures, and fire insulation laying in the engine

control room were found to be in good condition.

The appearance of each switch, indicator light, and instrument on the main switchboard was found normal.

The alarm lights and monitoring instrument panel on the console were found in real-time monitoring status.



7.5.5 Other Equipment

The engine room is equipped with a fuel supply unit, with a small amount of oil stains on the equipment chassis, and no significant corrosion or leakage in the pipelines.

The engine room is equipped with a domestic sewage tank and treatment device, and the pipelines and valves were found to be free of rust. The appearance of the control box and emission monitoring alarm was found normal.

The body of the oil purifier was found oil stains attached, and no significant leakage in the pipeline.





7.5.6 Steering Gear Room

The arrangement of the checkered plates in the steering gear room were found complete, and protective railings were installed next to the steering gear.

The body surface was found clean, without significant damage on coating.



7.6 Firefighting and Lifesaving Equipment

7.6.1 Lifesaving Equipment

The ship is equipped with 2 sets enclosed lifeboat on the boat deck, 1 set on each side, with a seating capacity of 30 people per boat. The appearance of the lifeboat was found no crack, and no damaged on the keel plate. The thruster facilities were found complete. The roller groove of the lifeboat frame was found to be free of significant rust or thinning, and no rust on the lifting rope and release hook.

The ship is equipped with 2 sets fall inflatable life rafts on the boat deck, 1 set on each side, with a seating capacity of 25 people per boat. The ship is equipped with 1 set fall inflatable life raft at the front area of No.1 cargo hold, with a seating capacity of 6 people. The overall condition of the life rafts were found good, with complete release device and the inspection marks.

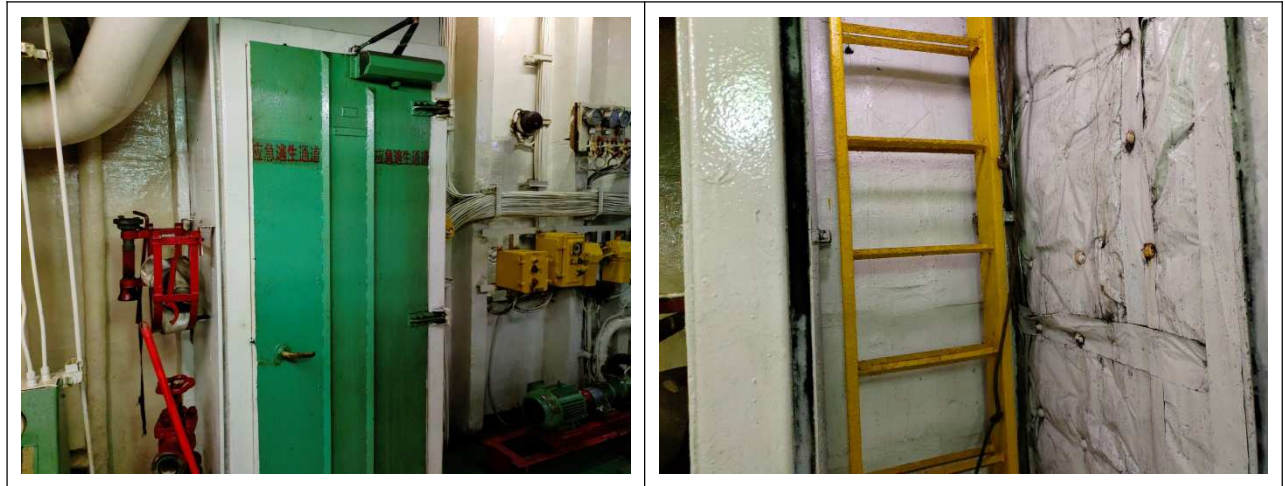


7.6.2 Firefighting Equipment

The CO2 fire extinguishing station of this ship is located in the fore peak tank. The foam fire extinguishing system and large halon fire extinguishing system are located on the poop deck, and a small amount of rust was found on the weathertight door rubber groove and the door frame. The indoor fire protection laying was found complete, and the release valve and bottom of the cylinder were free of rust. The inspection marks were found complete.

The self closing door of the emergency passage in the engine room was found to open and close normally, the fire protection material outside the passage was found basically complete, and the configuration of life ropes and life ladders inside the passage was complete.





7.7 Spare Parts

7.7.1 Main Spare Parts

The ship has one spare stern shaft placed on the main deck between No. 5 and No. 6 cargo hold. One spare anchor was placed on the port side of No.1 cargo hold. One spare bronze propeller was placed on the port side of the funnel. Spare cylinder liner was placed in the engine room.

7.7.2 Other Spare Parts

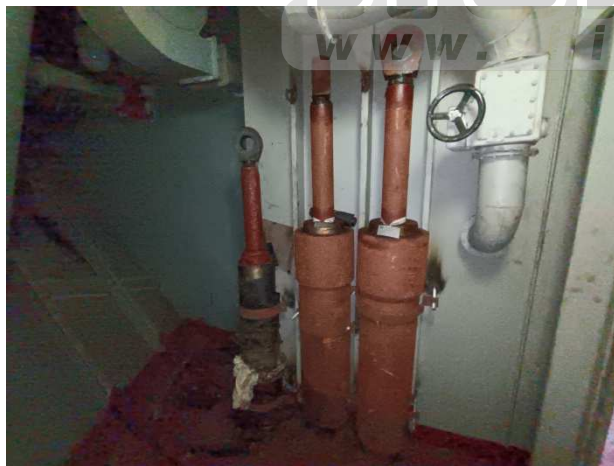
The spare connecting rods, mooring ropes, rope ladders, vent caps, steel wires, anchor chains, paints, leak stoppers, etc. Were found stored in the fore peak tank. A large number of mechanical spare parts were found stored in the engine room and spare parts room.

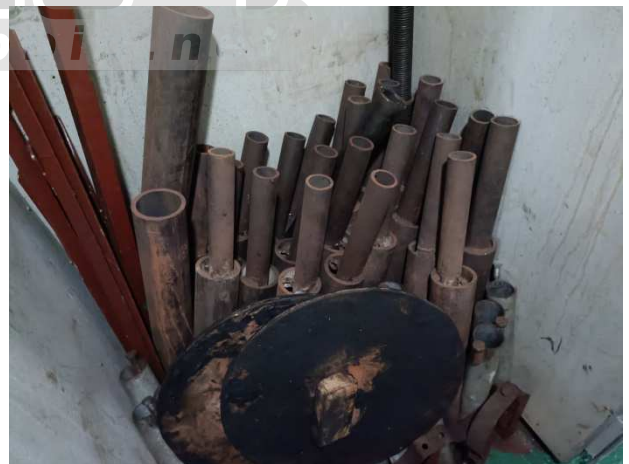
No.	Main Spare Parts	Quantity
1	Main engine	
1.1	Cylinder cover	1
1.2	Cylinder head	1
1.3	Starting valve bolts	2
1.4	Piston assembly	1
1.5	Piston ring	4

1.6	Piston head	2
1.7	Cylinder Liner	1
1.8	Upper "O"ring	1
1.9	Lower "O"ring	22
1.10	Coupling assembly	1
1.11	Starting valve complement	1+2 (old)
1.12	Fuel Injector Assembly	6
1.13	Fuel distributor	2
2	XCW6200ZD 3# Main Generator	
2.1	Cylinder head sealing ring	17
2.2	Cylinder liner sealing ring	13
2.3	Upper main bearing bush	10
2.4	Lower main bearing bush	10
2.5	Connecting rod upper bush	6
2.6	Connecting rod lower bush	6
2.7	Indicator valve	4
2.8	Oil sprayer	3
2.9	Piston	1
2.10	Cylinder liner	5
2.11	High pressure oil pump	2
2.12	Valve guide	31

3	6DE18 1#2# Main generator	
3.1	Main bearing bush	1
3.2	Thrust bearing bush	1
3.3	Connecting rod bearing	3
3.4	Piston ring 1	3
3.5	Piston ring 2	3
3.6	Piston ring 3	3
4	MAPX309B-00 Fuel oil purifier	
4.1	Bearing	4
4.2	Chamber cover	3
4.3	Thrust bearing	5
4.4	Damping spring	38









8. Conclusion

The ship was built as a bulk carrier with single engine and single propeller. The ship has 8 cargo holds and built in Ukraine. The deadweight cargo capacity is 52600t, and the light displacement is 13400t. According to the certificate, the ship will reach 33 years of age on September 13th, 2023. The following conclusions were given against the ship certificates, technical drawings and inspection.

8.1 Class Survey and Performance

8.1.1 The last special regular survey has been completed on September 29th, 2022 in Zhoushan.

8.1.2 Under ballast condition, when the main engine speed reaches 70r/min, the economic speed is about 9.8 kn, and the fuel consumption of main engine is about 18.5t. Under laden condition, when the main engine speed reaches 75r/min, the economic speed is about 12.0 kn, and the fuel consumption of main engine is about 19.0t. At present, the ship is sailing and has been carrying coal on recent voyages.

8.1.3 The ship has completed hull thickness measurement at Zhoushan Jinhai Shipyard On September 29th, 2022, and the corrosion rate was found within the extreme range. The port side of the main deck has corrosion rate of 15.0%, and the inner bottom plate of the cargo hold has significant corrosion rate of 21.4%.

8.2 Hull Structure Condition

7.2.1 The overall condition of the shell plate was found average. The paint on the shell

plate was found to be intact, and the ship name, draft marks were partially worn, while the port of registry and IMO marking were clear and full painted.

8.2.2 The overall condition of the main deck was found general good, with local painting damage and rust. The internal condition of the ballast tank was unknown, because the watertight manhole cover was rusted and could not be opened.

8.2.3 The condition of the hatch corner area was found average, with local cracking mark. The local obvious deformation was found on the inner bottom plate.

8.3 Status of Electrical & Machinery Equipment

8.3.1 The appearance of the console and relative equipment was found good, and the communication equipment was basically configured according to the certificate.

8.3.2 The oil and water pipeline joints of the main engine were found to be free of significant looseness, and The lower part of the scavenge box was found to be connected to multiple drip tray, with signs of leakage. the 2# and 5# cylinders of the M/E have undergone maintenance recently.

8.3.3 The appearance and structure of the equipment in the engine room were found intact, with oil stains adhering to the local surface of equipment.

8.3.4 The arrangement of firefighting facilities and escape passage in the engine room was found basically complete. The appearance of lifeboats and rafts was found in good condition.