

# GOSHIP SURVEY

TM



## PRE-PURCHASE INSPECTION

Star Deltas  
IMO:9654218  
Bulk Carrier

INSPECTED AT FUJIAN, CHN  
8th JUNE 2017

REPORT BY COMPANY NAME  
Edited by Mr SURVOREY

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# SHIP DETAILS

Ship name:Yin Nian

IMO:9654218

Type:null

Class:CCS

Flag:China P. R.

LOA(m) :190.0

Beam(m) :32.3

DWT(ton) :44,926

Draft(m) :10.5

GT:29,644

LDT(ton) :

SS(m/y) :

Bunkers(ton) :

Builder:Qingdao Wuchuan HI

Ex. Name:

Ship type:1

Location:Shanghai, CHN

Inspection data:null

Inspection data:12/5/2017



## Main engine

Maker:	MAN	Type:	B. & W. 5S60ME-C8.2
MCR KW:	7500	MCR RPM:	3000
Running hours:	5200		
Critical RPM:	1256		
Other:	M/E is good condition.		

## Auxiliary Power

Maker:	YANMAR	Type:	YAN S TYPE
Load:	750KW	A1 r/h:	365
A2 r/h:	400	A3 r/h:	
Other:	789		

## Boiler

Maker:	SAAAK	Type:	SA' S TYPE
Evaporation :	9876	Heating area	
Other:	Boiler is good condition.		

# GRADING

ITEM	GRADING	SHIP SCORE
船体	<b>8.2098</b>	<b>8. 3628</b>
甲板	<b>8.0388</b>	
货舱	<b>8.7143</b>	
轮机	<b>8.5282</b>	
电气	<b>8.4683</b>	
驾驶台	<b>8.2076</b>	

# DEFECTS

S/N	Description	Estimated cost (USD)
1	One of log should be repair in dock.	300,000
2	The cargo line U bolts were wasted and rusted; however, the managers are planning to renew the U bolts. The air and hydraulic lines were rusted especially in the contact area with the frame and the U bolts. The cargo line flanges were rusted on their edges and the bolts were heavily corroded.	50,000

# Condition inspection

## Surveyor' s summary

### Hull

The vessel was inspected whilst she was anchored in Fujairah Roads, U.A.E. on 20th December, 2014. She was in ballasted condition with a draft of 8.0 fwd and 10.0 meters aft.

The hull plating and steelwork appears to be structurally sound but the coating was seen to be in fair condition. There was a large rust stained area under the drainage pipes. There were isolated paint damages from scratching in way of no. 2w, 3w and 4w WBT shell plating areas. The upper part was stain rusted, however the coating in general was still intact. The entire anti-fouled area was seen with numerous areas of worn paint and rust, mostly in way of Nos. 2-4 P/S COTs. The hull was rust stained over its top coating. The submerged part of the vessel was noted with visible sea growth. The bulbous bow was seen with numerous anchor chain scratching and rust was present in the areas where the coating had broken down.

The anti-fouling certificate was issued in Bahrain where vessel underwent her 2nd Special Survey in 16th March 2010. The vessel' s appeared to be free from deep indentations.

An ESP assessment was conducted in 2010 during the vessel' s dry docking at which time the rating for the hull, cargo and ballast tanks was "good".

All markings, Load Line, Name and Port of Registry were clearly visible, except the fwd draft which not visible on the lower side.

### Forward mooring deck/Aft mooring deck/Main deck

The mooring winches and anchor windlasses on the forecastle deck were seen free from oil leaks but with several rusted areas including over the controller. Even so they, appeared to be in working condition. The mooring ropes were seen rusted but still satisfactory. The forward deck was noted with isolated pitting arrested by coating. The forepeak store was fully coated and noted to be in good condition; however the lower side of the collision bulkhead was seen with worn paint and rust on the lower side wings.

On the forecastle deck, the two tongue-type towing brackets fitted centrally on the forward part of the foc' sle were seen in good condition and fully coated. Both stoppers have a SWL of 200T and were properly marked. The chafing chain was secured on the deck platform near the SPM Bracket and was also in good condition. The bulwark brackets were seen rusted.

### Deck machinery (mooring,crane,outfittings,etc.)

The aft mooring deck was also found in a satisfactory condition with signs of recent maintenance but again little anti slip paint had been applied and we would recommend that when next painted , anti slip paint be used particularly in the mooring working areas where the crew are handling mooring ropes in wet conditions.

The deck outfitting items such as tank vent headers, air and sounding pipes were found in a satisfactory condition.

The mooring machinery was found in a satisfactory condition and reasonably well maintained. The anchor windlass brake linings were satisfactory and those roller fairleads that we tried turned easily reflecting that the crew have been carrying out the greasing.

All the winches both forward, aft and also in way of additional deck mooring stations located between hatches 1-2 and 6-7 were found in a satisfactory condition.

## Ballast tanks & Void spaces

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## Accommodation & deck

The Officers' and Crew accommodation spaces and living areas are built to European standards. Every cabin has an en-suite toilet and shower room.

The Senior Officers' cabins have a dayroom with a separate bedroom but all other cabins consist of a single room. The accommodation is in extremely good condition, however, the external porthole frames were seen to be rusted on the upper level.

The vessel is fitted with a hospital which has two beds. The hospital has its own bathroom with a full sized bath tub.

There is an elevator facility access from the 'D' deck to the Engine Room decks located on the port side of the internal accommodation stair cases which was found to be in good condition.

The toilets in the accommodation are designed with a vacuum system and holding tank, all in good working.

## Navigation bridge & Communication equipments

The Navigating and Bridge deck is in good order, clean and well maintained with the usual safety instructions, turning circles, etc. The Radio Room is located on the starboard side of the bridge.

Navigation equipment was seen to be in good order. The ECDIS was not approved and is used for Deck Officer training only.

The communications equipment: Inmarsat C, F, Iridium telephone, FBB band and the VDR-MDP-A3 were in good condition.

## Machinery space & Engine room machinery



### Main Engine

The main engine was seen without major oil or water leaks. The two turbochargers and the gas exhaust were free of soot traces.

According to the logbook records, the vessel is running in loaded condition as follows;

- 13.4 knots speed @ 70.0 RPM with 79.8mt/24hrs consumption
- 13.5 knots speed @ 70.0 RPM with 83.0 mt/24hrs consumption
- 13.6 knots speed @ 70.1 RPM with 79.7 mt/24hrs consumption
- 13.9 knots speed @ 71 RPM with 82.5 mt/24hrs consumption
- 14.7 knots speed @ 72.5 RPM with 94.9 mt/24hrs consumption

### Auxiliary Engines

There are three MAN B&W 6L28/32H Ssangyong diesel generators, each with an output of 1,710 BHP at 720 RPM and an Emergency diesel-driven generator with an output of 1,180 kW. Nos. 2 and 3 diesel generators were seen in working condition without oil and water leaks with normal exhaust gas temperatures. The emergency generator compartment located on the main deck level, funnel block port side was seen in good condition. The exhaust outlet temperatures for no.1 DG were (340-365), no. 2 DG (340-360) and no. 3 DG (330-350).

Daily consumption of the DG is 5.0 mt/24 hrs (Heavy FO/per unit).

### Boiler/Economiser

There are two Mitsubishi fully automatic, forced draft, heavy fuel burning marine boilers, each with a rated evaporation capacity of 40,000 kg/hr at a working pressure of 16kg/sq.cm, which are sufficient to supply steam for the cargo pump turbines, inert gas, fuel heating and accommodation requirements. The boilers were seen in working condition without any gas leak or soot traces.

There is also an Exhaust Gas Economiser boiler of Mitsubishi manufacture and forced circulating fin tube type which was seen in good condition and working properly.

### Auxiliary Machinery

The purifier room located on the stbd side was seen without oil leaks and was clean and tidy. The vessel is fully automated using bridge controls. The machinery spaces can be operated in UMS mode and this is in use when the vessel is on the open sea.

### Engine Control Room

The Engine Control Room located port side of the 3rd Engine Deck has a frontal view to the main engine top. The space was clean and tidy and appeared to have a full working panel. There is a lift access on the port side in way of the ECR.

### Steering Gear

The steering gear compartment is entered either through the rear of the boiler flat or directly from the deck, at the after end of the engine casing. The access doors and stairs were seen to be in good condition and compartments were found to be clean and tidy.

There were no apparent oil leaks from the ram seals or seawater leaks from the rudder-post glands. The oil save-alls were clean and dry.

The hydraulic electrical power packs for the mooring winches located on the forward port side of the steering flat were seen free of oil leaks and in working condition.

The emergency fire pump driven by 132 kW electrical motor, located in the forward part of the steering compartment locker, was seen with a water leak but still in good condition.

## Life saving ,Fire and safety equipment

There are two enclosed GRP life boats, each of 36 person capacity, fitted on the upper deck, port and stbd., of the raised launch platform. The lifeboat and its securing arrangements were seen in a well maintained condition, fully coated and marked. Access stairs to the launch platform were noted to be in good condition.

All lifesaving inventories were properly maintained and in date with periodical checks being carried out.

The life Boats were annually checked in Feb. 2014.

There was a foam analysis report issued on 6 Feb. 2014 for the 6,000 ltrs capacity foam system.

The Emergency DG (MAN D2866LXE30 KWA312) was seen in good condition.

The Engine and Pump room has a separate low expansion foam system for fire fighting which was last inspected in October 2014.

The fixed CO2 fire fighting used for local applications workshop, purifiers etc. was inspected in Feb. 2014.

## Galley, provision and refrigerated rooms

There are four cold rooms located under the galley space on the upper deck level. The provisions rooms can be accessed directly from the stern upper deck by an external door on both sides of the provisions crane area.

There is a dry provisions store space with a door to the lobby which provides access to the dairy, fish, meat and vegetable rooms. All spaces were bright, clean and fitted with a common type of cooler unit. Temperatures being maintained were in accordance with normal requirements. There was no sign of frost in the Reefer spaces.

The galley and mess rooms are separate for Officers (stbd side) and the crew (on port) spaces were provided with adequate equipment to accommodate dual nationality cooking arrangements.

## Ballast water treatment system

Good condition, New device.

# TECHNICAL APPENSIX & EQUIPMENT INFORMATION

## Navigation & Communications Equipments

Equipment	Maker	Type
Magnetic Compass	Anschutz	-
Gyro Compass	Anschutz	STD-20
Auto pilot	Anschutz	NP-20
X-Radar	JRC	ST340 X-band
S-Radar	JRC	ST340 S-band
INMARSAT-C No. 1	JRC	JUE-75C
INMARSAT-C No. 2	JRC	JUE-75C
FBB	JRC	
GPS 1	JRC	JLR 7700 MK II
GPS 2	JRC	JLR 6800
Echo Sounder	JRC	JFE- 570S
Speed Log	JRC	EML 500
Weather Facsimile	JRC	JAX-9A
Navtex Receiver	JRC	
AIS	JRC	JHS-180
Anemometer	JRC	KB-101
GMDSS	JRC	A1 A2 A3
ECDIS NO. 1	JRC	
ECDIS NO. 2	JRC	
MF/HF	JRC	JSS-710/720
V-sat	JRC	
VHF/DSC	JRC	JHS-32A
Two way VHF	JRC	
EPIRB	JRC	
Whistle	JRC	
Talk back	OKI	
Public address	OKI	

## Cargo hold capacities(Only Bulker)

Hold #	(m3)
No. 1	25000
No. 2	25897
No. 3	25897
No. 4	28974
No. 5	26987

## Hatch dimensions(Only Bulker)

Hold #	m×m
No. 1	10×10
No. 2	10×10

No. 3	10×10
No. 4	10×10
No. 5	10×10

### Vessel tank capacity

Ballast Tank #	Frames	(m3)
FPT	205-220	1012
No. 1 WBT (P)	170-205	1619
No. 1 WBT (S)	170-205	1619
No. 2 WBT (P)	135-170	1570
No. 2 WBT (S)	135-170	1570
No. 3 WBT (P)	102-135	1137
No. 3 WBT (S)	102-135	1137
No. 4 WBT (P)	66-102	1229
No. 4 WBT (S)	66-102	1229
No. 5 WBT (P)	30-66	1315
No. 5 WBT (S)	30-66	1315
APT	-4-10	659

### Vessel tank capacity

Heavy Fuel Oil Capacity Tank #	Frames	(m3)
HFO (P)	66-102	603
HFO (S)	66-102	650
HFO Sett. Tank (P)	22-25	21.6
HFO Serv. Tank (P)	25-28	22.6

### Vessel tank capacity

Diesel Oil Capacity Tank #	Frames	(m3)
D.O. Store Tank (S)	8-15	103.9
No. 1 D.O. Serv. Tank (P)	12-15	17.3

### Vessel tank capacity

Fresh Water Capacity Tank #	Frames	(m3)
F.W. Tank (P)	30-42	138
F.W. Tank (S)	30-42	138

### Vessel tank capacity

Lube Oil Capacity Tank #	Frames	(m3)
M/E Cyl. Oil Store Tank	16-25	15
M/E Sys. Oil Store Tank	25-28	24
M/E Cyl. Oil Sett. Tank	22-25	18
A/E L.O. Store Tank (P)	16-25	31
A/E L.O. Store Tank (P)	20-22	6

### Vessel tank capacity

Miscellaneous Tanks Capacity Tank #	Frames	(m3)
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Bilge Holding Tank	18-29	19
H.F.O. Overf. Tank	18-29	19
S/T L.O. Sump Tank	10-15	12
M/E L.O. Sump Tank	21-28	3
S/T C.F.W Tank	7-10	8

## Main deck and equipment

Name of Equipmet	Frames
Windlass	Capacity: 200 KN Location: po
Mooring Winches	e: K81U3 / hydraulic windlas
Anchor	ght: 11,200 kg Type: SPEK And
Chains	er: 81 mm Grade: 3a Length: 6

## Cargo handling equipment

Name of Equipmet	Frames
Manifold Cranes	x Make: NA Type: NA SWL@metr
Hatch cover	tch cover Description : hydra

## Lifesaving & firefighting equipment

Name of Equipmet	Frames
Rescue Boat Cranes	
Rescue Boats	ANGYIN Beihai LSA Type: Fibr









# DOCUMENTS

Title	Attachment
Class status	Exit
HPVQ	Exit
Crew list	Exit
Certificate of fitness appendix for list of cargoes	Exit
Voyage reports showing speed and consumptions	Exit
Copy of last CSR	Exit
Capacity plan	Exit
Mooring plan	Exit
Painting scheme	Exit
IOPP	Exit
Maker listn	Exit
Cargo history	Exit

# DETAIL GRADING

船体状态评估与等级划分说明		
Grade	Standard	技术状态
10~9	Good	根据检查和测量结果，钢结构和舾装件处于完好状况，涂层状况属于完好状况且构件未发现明显腐蚀、变形、裂纹，主要构件经过大量修复割换状况保持完好。构件的焊缝未发现明显腐蚀、裂纹。
8~6	Fair	根据检查和测量，发现有轻微缺陷，但构件和舾装件仍处于良好状况，板厚磨损量在现行规范允许值范围以内，无需修理和特别关注。
5~3	Poor	根据检查和测量发现存在缺陷或构件显著减薄情况，结构腐蚀量处于显著腐蚀区域，但测量数据平均高于船级社割换标准要求，结构和舾装件处于可维持使用状况，无需立刻进行修理。
2~1	Unsatisfactory	根据检查和测量，发现钢结构和舾装件存在严重不足和缺陷，对保持船级、外部安全检查构成影响，钢结构测厚平均数据低于船级社规定值、需立即进行修理。

机械设备状态评估与等级划分说明		
Grade	Standard	技术状态
10~9	Good	无任何影响安全操作和性能的缺陷，设备状况完好，无需修理；资料及保养记录齐全。
8~6	Fair	有轻微的缺陷，但不影响安全操作和性能，设备状况良好，没有需要立即修理的项目；资料及保养记录齐全
5~3	Poor	有缺陷，但不影响安全操作和性能，需要考虑进行必要的修理；资料及保养记录齐全。
2~1	Unsatisfactory	有严重缺陷，且影响安全操作和性能，需要立即进行修理或更换备件。

**\*注：实船照片请在网上查看并下载**

Inspection Item	Grade	Remark	Site Photo
船体	8.21		
1、船体外板	8.5263		
船底板	9		
左舷顶列板	8		
右舷顶列板	8		
左舷船壳板	9		
右舷船壳板	9		
附属件	7		
舳龙骨	9		
海底阀箱	8		
通海阀	8		
牺牲阳极（锌块）	9		
外加电流保护系统	9		
防海生物系统	9		
球鼻艏	8		
挡浪板	9		
2、船首结构	8.5		
首楼甲板	9		
首桅	9		
首尖舱	8		
锚链舱	8		
首物料间	9		
前液压设备间	8		
前油漆间	8		
3、船体结构	8.4286		
主甲板	8		
货舱	8		
顶边水舱	9		
底边水舱	9		
双层底	8		
箱形龙骨（管弄）	9		
横舱壁上墩	8		
横舱壁下墩	8		
横舱壁	9		
通风道	9		
桅屋	9		
纵舱壁	8		
舱口围	8		
舱口盖	9		
4、船尾部结构	8.0357		
后主甲板	8		
尾楼甲板	7		
机舱	9		
舵机间	9		
机舱风机间	6		
舵杆	9		
尾淡水舱	8		

尾尖舱	8		
尾轴冷却水舱	8		
烟囱	10		
主桅（雷达）	9		
CO2间	8		
蓄电池间	8		
后物料间	4	杂乱，无人打扫	
空调设备间	7		
应急发电机间	8		
<b>5、生活区</b>	<b>8.3824</b>		
总体保养	8		
外甲板及梯道	9		
居住区	9		
公共场所	8		
厨房	8		
洗衣间	8		
病房	8		
药物间	9		
甲板/轮机办公室	7		
生活区物料间	8		
冰库	9		
理货间	9		
<b>6、防腐</b>	<b>7.4783</b>		
船体外壳油漆	7		
干舷	7		
直底	8		
平底	8		
水尺及载重线标志	9		
左甲板油漆	8		
右甲板油漆	8		
货舱间甲板油漆	8		
舱口围油漆	7		
舱盖油漆	8		
生活区油漆	8		
货舱油漆	7		
压载舱油漆	8		
淡水舱油漆	8		
干隔舱油漆	6		
货舱壁顶凳和底登内部油漆	7		
管弄内油漆	8		
压载舱牺牲阳极	4	大部分需要更换	
<b>甲板</b>	<b>8.039</b>		
<b>1、系泊设备</b>	<b>7.9062</b>		
锚机	9		
绞缆机	9		
止链器	8		
导缆轮和滚筒	8		
锚和锚链	7		

系缆索/钢缆	6		
液压系统	8		
<b>2、载重线项目</b>	<b>7.1522</b>		
干舷标志	9		
水密门	8		
水密小舱口	7		
空气管	8		
测量管	7		
通风筒	8		
天窗	5	许多打不开	Exit
舷墙/栏杆	5	腐蚀严重，需要更换。	Exit
甲板安全通道及保护索	6		
舷梯/引水梯	8		
窗户/舷窗	8		
疏排水孔	7		
<b>3、消防设备</b>	<b>8.1639</b>		
主消防泵	9		
应急消防泵/自吸装置/原动	9		
消防总管	8		
消防皮龙 / 箱	8		
固定式CO2系统（包括释放前	9		
灭火器	8		
消防栓	7		
速闭阀	7		
消防员装备	7		
火警探测与报警系统	9		
油漆间防火装置	9		
分油机间防火装置	8		
水雾自动喷淋系统	8		
风油遥控应急切断	8		
<b>4、救生设备</b>	<b>8.3571</b>		
救生艇及自动脱钩装置	9		
艇机	8		
吊艇架	7		
放艇试验	8		
救生筏及静水压力释放器	8		
驾驶室烟火报警装置	9		
无线电示位标（EPIRB）	9		
救生圈	9		
救生衣、保温服	9		
自助式逃生、应急呼吸器（	8		
<b>5、防污设备</b>	<b>8.8636</b>		
油水分离器、15PPM监测装置	9		
防油污器材，集油盘	9		
垃圾收集、处理和焚烧	9		
焚烧炉	8		
生活污水处理与排放	9		
<b>6、操舵系统</b>	<b>8.3793</b>		
舵机	9		

液压系统	8		
舵角指示器	9		
自动舵	9		
驾控、通讯	8		
舵叶	7	舵叶锌块腐蚀严重	Exit
<b>7、管系</b>	<b>7.8333</b>		
燃/柴油系统	8		
液压油系统	7		
压缩空气系统	8		
控制空气系统	8		
电缆管	6		
淡水系统	7		
蒸汽和冷凝系统	9		
海水系统	9		
<b>8、起重装置</b>	<b>7.7222</b>		
燃油管吊	9		
起货机	8		
单轨吊（机舱物料和备件吊	8		
苏伊士运河吊杆	7		
机舱行车	7		
<b>9、舱盖</b>	<b>7.8958</b>		
舱口围板	9		
压条	8		
垫块	7		
轨道	7		
舱盖板	9		
舱盖密封	7		
关闭装置	7		
滚轮	8		
液压系统	8		
开舱设备	9		
<b>货舱</b>	<b>8.714</b>		
<b>仪器</b>	<b>8.7143</b>		
货舱进水报警装置	9		
便携式货舱灯	8		
<b>轮机</b>	<b>8.528</b>		
<b>1、机舱</b>	<b>7.4</b>		
总体保养	8		
专用工具（齐全、完好）	6	缺少部分工具	
工作间	8		
<b>2、主机</b>	<b>8.0521</b>		
底座	10		
缸盖	10		
排气阀	9		
缸套	8		
活塞、连杆、轴承	8		
十字头轴承	8		
曲轴，主轴承	7		

盘车机	9		
推力块	8		
拉紧螺栓	8		
支撑物	8		
贯穿螺栓	7		
凸轮	7		
增压器	8		
空冷器	8		
扫气总管	9		
排烟管	7		
燃油系统	7		
冷却系统	8		
润滑系统（包括气缸油系统	9		
启动空气系统	7		
控制空气系统	8		
调速器	8		
减震器	8		
<b>3、推进装置</b>	<b>8.8333</b>		
轴系	9		
中间轴承	8		
轴接地装置	9		
轴封	9		
尾管轴承	9		
螺旋桨	9		
<b>4、副机</b>	<b>8.8571</b>		
主发电原动机	9		
底座	9		
增压器	8		
燃油系统	9		
冷却系统	9		
润滑系统	8		
应急发电机	10		
<b>5、蒸汽系统</b>	<b>8.325</b>		
辅锅炉	9		
废汽锅炉	9		
吹灰器	8		
给水和冷凝	8		
蒸汽管系、阀	8		
大气冷凝器	9		
热水井	8		
给水泵	8		
锅炉循环泵	8		
<b>6、燃油系统</b>	<b>8.9167</b>		
泵	9		
管系、阀	9		
重油分油机	9		
柴油分油机	9		
混油装置	9		
加热器	9		

滤器	8		
燃油柜	9		
油舱加热管	9		
<b>7、滑油系统</b>	<b>8.6</b>		
泵	9		
管系、阀	9		
冷却器	9		
净油机	8		
滤器	7		
滑油柜	9		
<b>8、海水冷却系统</b>	<b>8.6471</b>		
泵	9		
管系、阀	9		
冷却器	9		
滤器	7		
<b>9、污水和压载系统</b>	<b>8.8636</b>		
泵	9		
管系、阀	9		
压载控制台	9		
污水井报警系统	9		
压载水清洗系统	8		
阀操作系统	9		
<b>10、淡水冷却系统</b>	<b>8.6429</b>		
泵	8		
管系、阀	9		
淡/海水冷却器	9		
<b>11、压缩空气系统</b>	<b>8.2593</b>		
空压机	9		
应急空压机	9		
空气瓶	9		
空气干燥/冷却器	9		
管系、阀	7		
控制空气干燥器	9		
控制空气管系、阀	6	阀漏油，管路需要清洗，标记不清	Exit
<b>12、辅助系统</b>	<b>8.5385</b>		
冷藏系统	9		
造水机	9		
日用淡水系统	9		
空调系统	7		
<b>13、压载水处理系统</b>	<b>8.6818</b>		
电解单元	9		
反冲洗滤器	8		
中和单元	8		
TRO检测单元	9		
控制系统	9		
<b>电气</b>	<b>8.468</b>		
<b>1、电力系统</b>	<b>8.6957</b>		
主发电机	9		



联轴节	8		
轴承	8		
空气滤器	6	需要更换	
应急发电机	9		
通用蓄电池	9		
变压器	9		
<b>2、配电装置</b>	<b>9</b>		
主配电板、应急配电板	9		
断路器	9		
启动器	9		
<b>3、电器设备</b>	<b>8.32</b>		
马达	9		
马达（泵）	9		
马达（风机）	9		
马达（其它）	7		
绝缘测试	7		
加热器	9		
照明	8		
<b>4、自动化控制</b>	<b>8.2</b>		
主机遥控和安保	9		
副机自动控制和安保	8		
机舱监测报警系统（包括DE	8		
自动化电站综合保护装置	8		
锅炉自动控制	8		
<b>5、惰气系统（油轮）</b>	<b>7.975</b>		
惰气风机	8		
洗涤塔	8		
惰气海水泵	8		
水封泵	7		
氧份仪	8		
水封塔	8		
惰气总管控制阀	8		
大舱呼吸阀（P/V）	8		
惰气管路系统	9		
<b>6、货油系统（油轮）</b>	<b>8.4906</b>		
货油泵	9		
货油泵原动机（蒸汽透平）	9		
货油泵调速器	9		
货油泵应急停泵装置	9		
油泵间风机	8		
真空抽除器	9		
货油泵大气冷凝器	9		
专用海水冷却泵	9		
货泵间海底阀	8		
喷射泵	7		
货油管路	8		
原油洗舱机	8		
油轮专用检测仪器	7		

驾驶台	8.208		
1、总体保养	9		
驾驶室	9		
海图室	9		
蓄电池间	9		
2、通讯设备	8.3878		
GMDSS装置	9		
天线	8		
AIS	8		
VHF	9		
卫通	9		
VDR/SVDR	9		
应急示位标	9		
船内通讯	5	部分电话损坏，需要及时更换，缺少报警装置，	Exit
手提对讲机	9		
通讯用蓄电池	9		
3、航行设备	7.7179		
雷达	9		
GPS / DGPS	9		
气象传真	9		
航行灯/信号灯	9		
计程仪	2	两台计程仪，一台损坏，需要进坞修理，目前只	Exit
测深仪	9		
电罗经	9		
磁罗经	6	需要罗经师校磁。	Exit
4、船上办公室	7.6667		
船上办公室设备	9		
配载仪	7		