

Rpt. 13.

No. 89776

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

-7 FEB 1933

Date of writing Report

19

When handed in at Local Office

6/2/33

Port of

NEWCASTLE-ON-TYNE

No. in
Reg. Book.

Survey held at NEWCASTLE ON TYNE

Date, First Survey

3rd Aug/32

Last Survey

6th Feb

1933

9/2/5

on the

CHANGKIANG

(Number of Visits...6...)

Tons
Gross
Net

Built at

NEWCASTLE ON TYNE

By whom built

SWAN HUNTER & W.R. LTD

Yard No.

1422

When built

1933

Owners

MINISTRY OF RAILWAYS OF THE REPUBLIC
OF CHINA.

Port belonging to

NEWCASTLE ON TYNE.

Electric Light Installation fitted by

SWAN HUNTER & W.R. LTD

Contract No.

1422

When fitted

1933.

Is the Vessel fitted for carrying Petroleum in bulk

No.

System of Distribution

Double Main ✓

Pressure of supply for Lighting

110

volts, Heating

110

volts, Power

—

volts.

Direct or Alternating Current, Lighting

Direct ✓

Power

If alternating current system, state frequency of periods per second

—

Has the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on or off

Yes ✓

Generators, do they comply with the requirements regarding rating

Yes ✓

, are they compound wound

Yes ✓

are they over compounded 5 per cent.

Yes ✓

, if not compound wound state distance between each generator

—

Where more than one generator is fitted are they arranged to run in parallel

No

, is an adjustable regulating resistance fitted in

series with each shunt field

Yes ✓

Are all terminals accessible, clearly marked, and furnished with sockets

Yes ✓

, are they so spaced or shielded that they cannot be accidentally earthed,

short circuited, or touched

Yes ✓

Are the lubricating arrangements of the generators as per Rule

Yes ✓

Position of Generators

Engine Room

Starboard Side ✓

is the ventilation in way of the generators satisfactory

Yes ✓

, are they clear of all inflammable material

Yes ✓

if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the generators

— and —

, are the generators protected from mechanical injury and damage from water, steam or oil

Yes ✓

are their axes of rotation fore and aft

Yes ✓

Earthing, are the bedplates and frames of the generating plant efficiently earthed

Yes ✓

are the prime movers and

their respective generators in metallic contact

Yes ✓

Main Switch Boards, where placed

Engine Room

Starboard Side ✓

If the generators and main switchboard are not placed in the same compartment, is each generator provided with

a fuse on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard

Switchboards, are they placed in accessible positions, free from inflammable gases and acid fumes

Yes ✓

are they protected from mechanical injury and damage from water, steam or oil

Yes ✓

, if situated near unprotected

woodwork or other combustible material, state distance of same horizontally from or vertically above the switchboards

—

and —

are they constructed wholly of durable, non-ignitable non-absorbent materials

Yes ✓

, is all insulation of high dielectric strength and of

permanently high insulation resistance

Yes ✓

, if semi-insulating material is used, are all conducting parts insulated from the slab

with mica or micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework

and is the frame effectively earthed

Yes ✓

Are the fittings as per Rule regarding: — spacing or shielding of live parts

Yes ✓

accessibility of all parts

Yes ✓

, absence of fuses on back of board

Yes ✓

, proportion of omnibus

bars

Yes ✓

, individual fuses to voltmeter, pilot or earth lamp

Yes ✓

, connections of switches

Yes ✓

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches

D.P. Change-over

switches and fuses for each dynamo. P.P. switches and D.P. fuses for each outgoing circuit.

Instruments on main switchboard

2

ammeters

/

voltmeters

—

synchronising device for paralleling purposes.

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system

Earth lamps

connected to earth through switches and fuses.

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules

Yes ✓

Joint Boxes Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule

Yes ✓



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Cables: Single, twin, concentric, or multicore Single are the cables insulated and protected as per Tables IV, V, XI or XIII of the Rules. Yes

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 4.5 volts (5.3 Rule)

Cable Sockets and other connections, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets Yes

Paper Insulated Cables, If cables are paper covered, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound None

Cable Runs, are the cables fixed as far as possible in accessible positions not exposed to drip or accumulation of water or oil, or to high temperature from boilers, steam pipes, uptakes or other hot objects, or to avoidable risk of mechanical damage Yes

Support and Protection of Cables, state how the cables are supported and protected L.C. and Sounded in Machinery Space
L.C. Clipped up in Accommodation V.I.R. in Galvanised Pipe through holds.

If cables are run in wood casings, are the casings and caps secured by screws —, are the cap screws of brass —, are the cables run in separate grooves —. If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VIII Yes

Refrigerated Chambers, if lights are fitted, are the cables and fittings in accordance with the special requirements None

Joints in Cables, state if any, and how made, insulated, and protected None

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands Yes

Bushes in Beams and Non-watertight Partitions, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed Yes state the material of which the bushes are made Rubber

Earthing Connections, state what earthing connections are fitted and their respective sectional areas —, are their connections made as per Rule —

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule Yes

Emergency Supply, state position and method of control of the emergency supply and how the generator is driven None

Navigation Lamps, are these separately wired Yes, controlled by separate switch and separate fuses Yes, are the fuses double pole Yes, are the switches and fuses grouped in a position accessible only to the officers on watch Yes, has each navigation lamp an automatic indicator as per Rule Yes

Secondary Batteries, are they constructed and fitted as per Rule None

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight Yes, are any fittings placed in spaces in which goods are liable to be stacked in close proximity to them; if so, how are they protected None, are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected None, how are the cables led —, where are the controlling switches situated —

Searchlight Lamps, No. of —, whether fixed or portable —, are their fittings as per Rule —

Arc Lamps, other than searchlight lamps, No. of —, are their live parts insulated from the frame or case —, are their fittings as per Rule —

Motors, are their working parts readily accessible Yes, are the coils self-contained and readily removable for replacement Yes, are the brushes, brush holders, terminals and lubricating arrangements as per Rule Yes, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material Yes, are they protected from mechanical injury and damage from water, steam or oil Yes are their axes of rotation fore and aft Yes, if situated near unprotected woodwork or other combustible material, are the motors of the totally enclosed, pipe ventilated, forced draught, drip or flame proof type —, if not of this type, state distance of the combustible material horizontally or vertically above the motors — and —

Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule Yes

Lightning Conductors, where lightning conductors are required, are these fitted as per Rule —

Ships carrying Oil having a Flash Point less than 150° F. Have the special requirements of the Rules been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings —

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office —

PARTICULARS OF GENERATING PLANT.									
DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.		
		Kilowatts.	Volts.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.	
MAIN	1	10	110	91	450	Steam Engine			
AUXILIARY	1	10	110	91	1440	A.C. motor supplied from shore.			
EMERGENCY									
ROTARY TRANSFORMER									

GENERATOR, LIGHTING AND HEATING CONDUCTORS.									
DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT AMPERES.		Approximate Length (Lead and Return) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR	1	1009	19	.083	91	118	30	V.I.R.	L.C. & A.
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR	1	1009	19	.083	91	118	80	do	do
EMERGENCY GENERATOR									
ROTARY TRANSFORMER									
ENGINE ROOM	1	.02214	7	.064	35	46	20	do	do
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
ACCOMMODATION + NAVIG.	1	.02214	7	.064	34	46	110	do	do
WIRELESS									
SEARCHLIGHT									
MASTHEAD LIGHT	1	.00194	3	.029	.36	7.8	100	do	L.C.
SIDE LIGHTS	1	.00194	3	.029	.36	7.8	80	do	do
COMPASS LIGHTS	1	.00194	3	.029	.1	4.8	30	do	do
DECK LIGHTS	1	.00194	3	.029	.36	7.8	560	do	Pipe.
CARGO LIGHTS									
ARC LAMPS									
HEATERS									

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP										
MAIN BILGE LINE PUMPS										
GENERAL SERVICE PUMP										
EMERGENCY BILGE PUMP										
SANITARY PUMP										
CIRC. SEA WATER PUMPS										
CIRC. FRESH WATER PUMPS										
AIR COMPRESSOR										
FRESH WATER PUMP										
ENGINE TURNING GEAR										
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS										
OIL FUEL TRANSFER PUMP										
WINDLASS										
WINCHES, FORWARD										
WINCHES, AFT										
STEERING GEAR—										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR										
WORKSHOP MOTOR										
VENTILATING FANS	2	1	.00194	3	.029	4.5	7.8 ✓	120 ✓	V.I.R. ✓	L-C + A
do do	2	1	.00194	3	.029	2.5	7.8 ✓	120 ✓	do	do
A.C. motor for M.G. Set plug for shore supply for fore end of ship.	1	1	.01046	7	.044	22 per phase.	31 ✓	224 each lead.	do	Pipe.

All Conductors are of annealed copper conforming to British Standard Specification No. 7.
The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.
The foregoing is a correct description.

FOR
SWAN, HUNTER, & WIGHAM RICHARDSON, LTD.

Electrical Engineers.

Date 31st Jan 1933.

COMPASSES.

Distance between electric generators or motors and standard compass 150 feet approx

Distance between electric generators or motors and steering compass 150 feet approx

The nearest cables to the compasses are as follows:—

A cable carrying 1 Ampères 10 feet from standard compass 10 feet from steering compass.

A cable carrying Ampères feet from standard compass feet from steering compass.

A cable carrying Ampères feet from standard compass feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power yes

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted yes

The maximum deviation due to electric currents was found to be nil degrees on each course in the case of the standard compass, and nil degrees on each course in the case of the steering compass.

SWAN, HUNTER, & WIGHAM RICHARDSON, LTD.
GEO. MORRISON

Builder's Signature.

Date 6 February 1933

Is this installation a duplicate of a previous case No If so, state name of vessel —

General Remarks (State quality of workmanship, opinions as to class, etc. This installation has been fitted)

on board under special survey. The steam driven dynamo has been tested under full working conditions and found satisfactory. Suitable alternating power supply was not available for the running of the motor generator set and copies of the maker's test certificates are attached.

The materials and workmanship have been found to be good and sound.

It is submitted that
this vessel is eligible for
THE RECORD Electric Light

CW
7.2.33

Total Capacity of Generators 20 Kilowatts.

The amount of Fee £ 17 : 10 : 11.1.19.33
When applied for,
Travelling Expenses (if any) £ : : 22.1.19.33
When received.

R. C. Clayton

Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 10 FEB 1933

Assigned

Elec. Lt.



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