

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report

10

When handed in at Local Office

11. 3.

1029 Port of GLASGOW.

Received at London Office

13 MAR 1929

No. in Survey held at
Reg. Book.

GLASGOW.

Date, First Survey 19. 4. 28 Last Survey

6. 3. 1929

92560 on the

T. S. S. VICEROY OF INDIA.

(Number of Visits 50)

Built at LINTHOUSE

By whom built

MESSRS. A. STEPHEN & SONS LTD

Yard No. 519

Tons { Gross 19648
Net 10069
When built 1929.

Owners PENINSULAR & ORIENT. ST. NAUO

Port belonging to

GLASGOW

Electric Light Installation fitted by MESSRS. A. STEPHEN & SONS LTD

Contract No. 519 When fitted 1929.

System of Distribution

Two wire insulated

Pressure of supply for Lighting

220

volts, Heating

220

volts, Power

220.

volts.

Direct or Alternating Current, Lighting

Direct

Power

Direct.

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 overload

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

Yes.

, is an adjustable regulating resistance fitted in

series with each generator

Yes.

Are all terminals accessible and clearly marked

Yes.

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

or short circuited

Yes.

Are the lubricating arrangements of the generators as per Rule

Yes.

Position of Generators

Main Engine Room Port & Starboard Halls.

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 axis 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 aft Bulkhead upper Platforms.

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

Yes.

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

Yes.

and

are they constructed wholly of durable, incombustible 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 connected to one pole

insulated from the slab with mica or micanite and the slab similarly insulated from its framework

Yes.

, and is the

frame effectively earthed

Yes.

Are the following fittings as per Rule, viz. :— spacing or shielding of live parts

, 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

For Main Generators D.P. Circuit Breakers & Earth Interlocks & Equalizers
Main Circuits D.P. Circuit Breakers for smaller circuits D.P. Switches & fuses.

Instruments on main switchboard

20

ammeters

2

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.

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

Yes.

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

Yes.

Insulation of Cables, state type of cables, single or twin *Single* are the cables insulated and protected as per Tables III or IV of the Rules *Yes*

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load *4.5 Volls.*

Cable Sockets and other connections, are the ends of all cables having a sectional area of 0.007 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 conductors protected from moisture by being suitably sealed with insulating compound *No paper tapes*

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 *Lead covered & armoured where necessary. Supported by clips & perforated iron trays etc.*

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

Refrigerated Chambers, if lights are fitted, are the cables and fittings in accordance with the special requirements *Yes*

Joints in Cables, state if any, and how made, insulated, and protected *No joints*

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 Positions, 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 *Lead*

Earthing Connections, state what earthing connections are fitted and their respective sectional areas *No earth connections*

are their connections made as per Rule *Yes*

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 *Boat deck*
controlled by switches on emergency switch board.

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*, are separate screens provided for the use of oil and electric side lights *Yes*

are separate oil lanterns provided for the mast head lights and side lights *Yes*

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 *Cast Iron*
guard.

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *No*

how are the cables led *Yes*

where are the controlling switches situated *Yes*

Searchlight Lamps, No. of *1*, whether fixed or portable *fixed*, are their fittings as per Rule *Yes*

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 axis 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 *Yes*, 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 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.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ...	4	500	220	2270	670	STEAM TURBINE RUNNING AT	8,000 RPM.	
AUXILIARY ...	2	165	220	750	275	PATTERS DIESEL.	DIESEL OIL	ABOVE 180°
EMERGENCY ...	1	50	220	227	370	" ENGINE	PETROL PARAFFIN	
ROTARY TRANSFORMER								

LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor, Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current, Amps.	Approximate Length (Lead and Return), Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR...	3.	1.0376	127	✓103	2270	120 170. 120 170.	Cambrie	Lead Covered.
	AUXILIARY GENERATOR	1	✓1435	91	✓103		50 53.	do	do
	EMERGENCY GENERATOR	1	✓1964	37	✓083	225	240	do	do
	EQUALIZER	1	✓1435	91	✓103	325	25. 28.	do	do
	MAIN EQUALIZER	1	✓1062	19	✓093	85	60 85 60 85	do	do
	ENGINE ROOM	1	✓060	19	✓064	85	36	do	do
	BOILER ROOM	1	✓060	19	✓064	70	200	do	do
	AUXILIARY SB "A"	2	1.049	127	✓093	650	376	do	do
	Do "B"	2	1.049	127	✓093	650	195	do	do
	Do "C"	1	✓1435	91	✓103	700	320	do	do
	Do "D"	2	✓1435	91	✓103	550	352	do	do
	MAIN EXCITATION	3	✓1435	91	✓103	1650	52	do	do
	CONSTANT CURRENT	2	✓1985	61	✓103	856	65	do	do
	Do "2"	2	✓1985	61	✓103	856	80	do	do
	Do "3"	2	✓1985	61	✓103	856	96	do	do
	DOMESTIC SWBO.	2	✓1009	19	✓083	300	440	do	do
	BOILER ROOM VENT FANS	1	✓0104	7	✓044	25	480	V.I.R.	do
	EMERGENCY SB	1	✓2165	37	✓093	250	144	Cambrie	do
	FROM DO DO	1	✓1964	37	✓093	200	144	do	do
	WIRELESS	1	✓0104	7	✓044	25	200	V.I.R.	do
	SEARCHLIGHT	1	✓0396	19	✓052	50	1000	Cambrie	do
	MASTHEAD LIGHT	1	✓0029	3	✓036	210	1050	V.I.R.	do
	SIDE LIGHTS	1	✓0029	3	✓036	5	145	do	do
	COMPASS LIGHTS	1	✓0029	3	✓036	5	100	do	do
	VENT FANS	1	✓1964	37	✓093	200	160	Cambrie	do
	CARGO LIGHTS	1	✓1045	7	✓029	15	100	V.I.R.	do
	HEATERS	1	✓1009	19	✓083	200	90	V.I.R.	do
		1	✓104	19	✓064	100	115	V.I.R.	do

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor, Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current, Amps.	Approximate Length (Lead and Return), Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP			Constant		Current	(See Report)		
	MAIN BILGE LINE PUMPS			Constant		Current	(do)		
	GENERAL SERVICE PUMP			Constant		Current	(do)		
	EMERGENCY BILGE PUMP	1	✓1009	19	✓083	130	350	Cambrie	Lead Covered
	SANITARY PUMP	2	✓1009	19	✓083	80	84	do	do
	CIRC. SEA WATER PUMPS	2	✓1985	61	✓103	924	225	do	do
	CIRC. FRESH WATER PUMPS	1	✓0221	4	✓064	50	70	do	do
	AIR COMPRESSOR	1	✓0104	7	✓044	25	78	V.I.R.	do
	FRESH WATER PUMP	1	✓0600	19	✓064	90	70	Cambrie	do
	ENGINE TURNING GEAR			Constant		Current	(See Report)		
	ENGINE REVERSING GEAR	1	✓0396	19	✓052	50	200	Cambrie	do
	LUBRICATING OIL PUMPS	1	✓0221	4	✓064	50	68	do	do
	OIL FUEL TRANSFER PUMP			Constant		Current	(See Report)		
	WINDLASS			Constant		Current	(See Report)		
	WINCHES, FORWARD			Constant		Current	(See Report)		
	WINCHES, AFT	1	✓1064	37	✓093	250	390	Cambrie	Lead Covered
	STEERING GEAR	1	✓1064	37	✓093	250	80	do	do
	WORKSHOP MOTOR	1	✓0600	19	✓064	100	465	do	do
	VENTILATING FANS	1	✓0600	19	✓064	90	115	do	do
	ADV. COND. AIR PUMP	1	✓1009	19	✓083	120	120	do	do
	BRINE PUMPS	1	✓0600	19	✓064	80	115	do	do
	EXTRACTOR PUMP	1	✓1009	19	✓083	110	405	do	do
	SWIMMING BATH	1	✓0600	7	✓064	50	108	V.I.R.	do
	HOT. SALT	1	✓0104	7	✓044	25	70	do	do
	REFRIG. CIRC.	1	✓0396	19	✓052	60	40	Cambrie	do
	W/T. DOOR	1	✓0396	19	✓052	60	35	do	do
	BOAT WINCHES	1	✓1964	37	✓093	270	15	do	do
	VENT FANS "E" & "F"	1	✓0396	19	✓052	60	200	do	do
	PASSENGER LIFTS			Constant		Current	(See Report)		

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.

ALEXANDER STEPHEN & SONS, LIMITED.

A. M. Stephen.

Director.

Electrical Engineers.

Date

11/3/29.

COMPASSES.

Distance between electric generators or motors and standard compass 215 feet. w/t. motor Gen. 60 feet.

Distance between electric generators or motors and steering compass 210 " " " " 58 "

The nearest cables to the compasses are as follows:—

A cable carrying 6 Amperes 10 feet from standard compass 8 feet from steering compass.

A cable carrying 7 Amperes 12 feet from standard compass 10 feet from steering compass.

A cable carrying 5 Amperes 8 feet from standard compass 6 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 no degrees on any course in the case of the standard

compass, and no degrees on any course in the case of the steering compass.

FOR ALEXANDER STEPHEN & SONS, LIMITED.

A. M. Stephen.

Director.

Builder's Signature.

Date

11/3/29.

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

was fitted on board under special survey
tested under full working conditions and
found satisfactory.

The materials and workmanship
were found to be good and sound.

It is submitted that
this vessel is eligible for
THE RECORD.

ELEC. LIGHT.

JRM

15.3.29

Total Capacity of Generators 2380 Kilowatts

Electrical Sec. charged
on Machinery

The amount of Fee

Report

Travelling Expenses (if any) 21/11/28

When applied for.

19

When received.

19

Committee's Minute GLASGOW

12 MAR 1929

Assigned

Elec. Light.

J. S. Rankin.

Surveyor to Lloyd's Register of Shipping.

TUE, 9 APR 1929