

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

-2 FEB 1935

Received at London Office.....

Date of writing Report 19-1-35 19 When handed in at Local Office 1. 2. 1035 Port of GLASGOW

No. in Survey held at CLYDEBANK Date, First Survey 30 8 34 Last Survey 18-1-1935
Reg. Book. (Number of Visits 11)90765 on the T.S.M.V. 'PORT WYNHAM' Tons { Gross 8580
Net 5033

Built at CLYDEBANK. By whom built J. BROWN & CO LTD Yard No. 541 When built 1934

Owners COMMONWEALTH & DOMINION LINE LTD Port belonging to LONDON

Electric Light Installation fitted by J. BROWN & CO. LTD. Contract No. 541 When fitted 1934

Is the Vessel fitted for carrying Petroleum in bulk No

System of Distribution TWO WIRE RING MAIN

Pressure of supply for Lighting 220 ✓ volts, Heating 220 ✓ volts, Power 220 ✓ 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 YES ✓, 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 TWO SETS IN MOTOR ROOM PT. ONE ON STAR SIDE. DIESEL EMERGENCY SET IN EMER DYNAMO ROOM BOAT DK.

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 ON SWITCHBOARD PLATFORM FITTED AT FORWARD BULK OF MOTOR ROOM.

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 NO

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 YES ✓

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 Train Switchboard to control

three generators each 375 KW 225 Volts arranged for parallel running. Panels of Ebony grade 1 1/2 in. thick. Syn. Panels fitted with 3000 amp triple pole free handle magnetic blowout circuit breakers with two overload & reverse current trips & 750 amp fuse, the mid pole arranged on equaliser to make first & break last. Outgoing circuit with S.P. breakers & instruments on main switchboard 4 ammeters 3 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 Two lamps connected

in series with switch for each lamp & were between lamps connected to earth through a switch.

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 ✓

Cables: Single, twin, concentric, or multicore *all types filled* are the cables insulated and protected as per Tables IV or V of the Rules *yes*
Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load *74605 (lighting) 56605 (power)*
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

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 *Cables supported on bolted insulators for power cables. Trays supported to same by brass clips - Main L.C.A.B. Machinery Space L.C.A.B. Accom. L.C.A.B. clipped.*

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 *yes*

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 *Lead.*

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 *In Motor Room. Yes from. Low power charging board with automatic control & battery engine room lighting only. are other lighting throughout ship supplied from S.O.A.W. Emergency Diesel Generator Switchboard.*

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 *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 *D.P. switches are fitted in Engine Room*

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected —, 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 *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 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.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	3	375	225	1665	350	Diesel engine	Diesel Oil	Above 150° F.
AUXILIARY								
EMERGENCY	1	50	225	222	400	DIESEL ENGINE	Diesel Oil	Above 150° F.
ROTARY TRANSFORMER								

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		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	2	20782	127	0.03	1665	1678	146	Var. 2" Cambric	Lead Gut 2" 1/2" 1/2" 1/2"
EQUALISER CONNECTIONS	1	10376	5	0.03	839	839	146	5"	5"
AUXILIARY GENERATOR									
EMERGENCY GENERATOR	1	2465	37	0.03	222	209	30'	5"	5"
ROTARY TRANSFORMER									
ENGINE ROOM									
BOILER ROOM									
SWITCHBOARDS	2	20180	19	0.03	170	344	200	Var. 2" Cambric	Lead Gut 2" 1/2" 1/2" 1/2"
Lighting	50								
50	50								
50	50								
50	50								
50	50								
POWER SUPPLY	2	20180	19	0.03	170	344	200	Var. 2" Cambric	Lead Gut 2" 1/2" 1/2" 1/2"
50	50								
50	50								
50	50								
50	50								
50	50								
WIRELESS	1	20180	19	0.03	170	344	200	Var. 2" Cambric	Lead Gut 2" 1/2" 1/2" 1/2"
SEARCHLIGHT	1	20180	19	0.03	170	344	200	Var. 2" Cambric	Lead Gut 2" 1/2" 1/2" 1/2"
MASTHEAD LIGHT	1	20180	19	0.03	170	344	200	Var. 2" Cambric	Lead Gut 2" 1/2" 1/2" 1/2"
SIDE LIGHTS	1	20180	19	0.03	170	344	200	Var. 2" Cambric	Lead Gut 2" 1/2" 1/2" 1/2"
COMPASS LIGHTS	1	20180	19	0.03	170	344	200	Var. 2" Cambric	Lead Gut 2" 1/2" 1/2" 1/2"
PORT LIGHTS	1	20180	19	0.03	170	344	200	Var. 2" Cambric	Lead Gut 2" 1/2" 1/2" 1/2"
CARGO LIGHTS	1	20180	19	0.03	170	344	200	Var. 2" Cambric	Lead Gut 2" 1/2" 1/2" 1/2"
ARC LAMPS	1	20180	19	0.03	170	344	200	Var. 2" Cambric	Lead Gut 2" 1/2" 1/2" 1/2"
HEATERS	74	20180	19	0.03	170	344	200	Var. 2" Cambric	Lead Gut 2" 1/2" 1/2" 1/2"

MOTOR CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
	No. of Motors.	No. per Pole.	Total Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.		
BALLAST PUMP	1	1	2465	37	0.03	170	344	200	Var. 2" Cambric
MAIN BILGE LINE PUMPS	1	1	2465	37	0.03	170	344	200	Var. 2" Cambric
GENERAL SERVICE PUMP	1	1	2465	37	0.03	170	344	200	Var. 2" Cambric
EMERGENCY BILGE PUMP	1	1	2465	37	0.03	170	344	200	Var. 2" Cambric
SANITARY PUMP	1	1	2465	37	0.03	170	344	200	Var. 2" Cambric
CIRC. SEA WATER PUMPS	1	1	2465	37	0.03	170	344	200	Var. 2" Cambric
CIRC. FRESH WATER PUMPS	2	1	2465	37	0.03	170	344	200	Var. 2" Cambric
AIR COMPRESSOR	2	1	2465	37	0.03	170	344	200	Var. 2" Cambric
FRESH WATER PUMP	1	1	2465	37	0.03	170	344	200	Var. 2" Cambric
ENGINE TURNING GEAR	1	1	2465	37	0.03	170	344	200	Var. 2" Cambric
ENGINE REVERSING GEAR	1	1	2465	37	0.03	170	344	200	Var. 2" Cambric
LUBRICATING OIL PUMPS	1	1	2465	37	0.03	170	344	200	Var. 2" Cambric
OIL FUEL TRANSFER PUMP	1	1	2465	37	0.03	170	344	200	Var. 2" Cambric
WINDLASS	1	1	2465	37	0.03	170	344	200	Var. 2" Cambric
WINCHES, FORWARD	10	2	2465	37	0.03	170	344	200	Var. 2" Cambric
Refrigerating Comp.	3	3	2465	37	0.03	170	344	200	Var. 2" Cambric
WINCHES, AFT	8	2	2465	37	0.03	170	344	200	Var. 2" Cambric
Capstan	2	2	2465	37	0.03	170	344	200	Var. 2" Cambric
STEERING GEAR	2	2	2465	37	0.03	170	344	200	Var. 2" Cambric
(a) MOTOR GENERATOR									
(b) MAIN MOTOR									
WORKSHOP MOTOR	1	1	2465	37	0.03	170	344	200	Var. 2" Cambric
VENTILATING FANS	5	1	2465	37	0.03	170	344	200	Var. 2" Cambric

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.

JOHN BROWN & CO., LTD.

Electrical Engineers.

Date 31st Jan 1935

COMPASSES.

Distance between electric generators or motors and standard compass

160 FEET

Distance between electric generators or motors and steering compass

155 "

The nearest cables to the compasses are as follows:—

A cable carrying 5.6 Ampères 13 feet from standard compass. 6 feet from steering compass.

A cable carrying 1 Ampères 1 feet from standard compass. 1 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 Amy course in the case of the standard compass, and NIL degrees on Amy course in the case of the steering compass.

John Brown & Company, Limited.

W. Beck
Gloucester Secretary

Builder's Signature.

Date 31st Jan 1935

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, &c. *The Electrical equipment of this*)

vessel has been 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

5/2/35.

Wid

L.Y.

5/2/35.

Total Capacity of Generators *1175* Kilowatts.

The amount of Fee ...

£ 60 : 17

When applied for,

28/1/35

Travelling Expenses (if any) £

:

When received,

11/3/35

W. H. H. H.
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 12 FEB 1935

Assigned