

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

WED. OF C. 20 1922

Date of writing Report 18-12-22 When handed in at Local Office 18-12-22 Port of Glasgow

No. in Survey held at GLASGOW. Date, First Survey 10-10-22 Last Survey 21-10-1922

Reg. Book 55283 on the S.S. BRITISH MERCHANT.

Tons { Gross 7400. Net

Built at DALMOIR. By whom built MESSRS W^M BEARDMORE Yard No. 622 When built 1922

Owners THE BRITISH TANKER CO LTD Port belonging to LONDON.

Electric Light Installation fitted by MESSRS W^M BEARDMORE & CO LTD Contract No. 622 When fitted 1922.

System of Distribution 220 VOLT 50 PERIODS FOR POWER 110 VOLT D.C. FOR LIGHTING

Pressure of supply for Lighting 110 volts, Heating NIL volts, Power 220 volts.

Direct or Alternating Current, Lighting DIRECT CURRENT Power ALTERNATING CURRENT

If alternating current system, state frequency of periods per second 50.

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 -

are they over compounded 5 per cent. -, 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 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

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 ON PLATFORM IN ENGINE 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 -

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, 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 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 CIRCUIT BREAKER

& 3 POLE CHANGE-OVER SWITCH FOR EACH GENERATOR

3 POLE SWITCH & FUSES FOR EACH OUT GOING CIRCUIT FOR POWER & D.P. SWITCH & FUSES FOR LIGHTS

Instruments on main switchboard 4 ammeters 2 voltmeters 1 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 INDICATING

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.



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Insulation of Cables, state type of cables, single or twin SINGLE ^{+ THREE CORE} 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 —

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 conductor protected from moisture by being suitably sealed with insulating compound YES ✓

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 SUPPORTED BY CLIPS & PLATING & PROTECTED BY LEAD COVERING OR LEAD COVERED & ARMOURD ✓

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 VI YES ✓

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

Joints in Cables, state if any, and how made, insulated, and protected. NIL

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 —, are their connections made as per Rule —

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

Emergency Supply, state position and method of control of the emergency supply and how the generator is driven. NIL

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 NIL

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected YES ✓
in pump room.
Wiring L.C. contained in galvanneal iron tubing outside the pump room.
 where are the controlling switches situated Outside Pump room.

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 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 —, 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 YES ✓

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

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 A.C. ...	2	120 KVA	220	315 PER PH	1000	STEAM TURBINE		
AUXILIARY ...	1	10 KW.	110	91	330	" ENGINE		
EMERGENCY ...								
DIRECT CURRENT	1	10 KW.	110	91	1440	A.C. MOTOR 16 1/2 HP 220 Vols		
ROTARY TRANSFORMER	1	1 1/2 KW.	135/80	—	1800/500	FOR WIRELESS.		

LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR...	3	.3	37	.103	315		PAPER	LEAD COVERED & ARMOURD
	AUXILIARY GENERATOR	1P	.15	37	.072	91	160	V.I.R.	L.C. A & B
	EMERGENCY GENERATOR	1"	.15	37	.072	91	90	V.I.R.	"
	ROTARY TRANSFORMER...	1"	.0045	7	.029	14	90	"	L.C.
	AUXILIARY SWITCHBOARDS				NIL				
	ENGINE ROOM ...	1"	.0225	7	.064	25	300	V.I.R.	L.C. A & B
	BOILER ROOM ...	1"	.01	7	.044	7	250	"	"
	WIRELESS ...	1P	.1	19	.085	20		V.I.R.	L.C. A & B
	SEARCHLIGHT ...				NIL				
	MASTHEAD LIGHT...	1"	.002	3	.029	.4		V.I.R.	L.C. A & B
	SIDE LIGHTS ...	1"	.002	3	"	.4		"	"
	COMPASS LIGHTS ...	1"	.002	3	"	.4		"	L.C.
	POOP LIGHTS ...				NIL				
	CARGO LIGHTS ...	1"	.0045	7	.029	5		V.I.R.	L.C. A & B
	ARC LAMPS ...				NIL				
	HEATERS ...				NIL				

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP ...								
	MAIN BILGE LINE PUMPS ...								
	GENERAL SERVICE PUMP ...								
	EMERGENCY BILGE PUMP ...								
	SANITARY PUMP ...								
	CIRC. SEA WATER PUMPS ...	2	.1	19	.085	126 PER PH		PAPER	L.C. A & B
	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 ...	1	.0225	7	.064	50 PER PH.		PAPER	L.C. A & B
	WORKSHOP MOTOR ...								
	VENTILATING FANS ^{FORCED DRAUGHT.} ...	2	.0600	19	.064	86 PER PH.		PAPER	L.C. A & B
	HOTWELL PUMP	1	.007	7	.036	10 " "		"	"
	MAIN FEED PUMP	1	.0225	7	.064	57 " "		"	"
	REFRIGERATING	1	.007	7	.036	27 " "		"	"
	MOTOR GENERATOR	1	.0225	7	.064	35 " "		"	"

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 WILLIAM BEARDMORE & CO., LIMITED



Electrical Engineers.

Date 12.12.22

COMPASSES.

Distance between electric generators or motors and standard compass 250 FEET TO GENERATOR 20 FEET TO W/T ROTARY

Distance between electric generators or motors and steering compass 245 " " " 16 " " "

The nearest cables to the compasses are as follows:—

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

A cable carrying 20 Amperes 22 feet from standard compass 20 feet from steering compass.

A cable carrying 3 Amperes 6 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 0 degrees on ANY course in the case of the standard compass, and 0 degrees on ANY course in the case of the steering compass.

FOR WILLIAM BEARDMORE & CO., LIMITED

H. Burns

Builder's Signature.

Date 12.12.22

Is this installation a duplicate of a previous case? If so, state name of vessel

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

fitted on board under special survey. Tested under full working conditions & found satisfactory in every way. The workmanship, in my opinion is of a high standard.

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

Elec. Light

A.H.D.

27/12/22

Total Capacity of Generators 202 Kilowatts

The amount of Fee ... £ 36 : 11 - 0

When applied for, 4/11/22

Travelling Expenses (if any): £ - : -

When received, 11/11/22

J. Rankin

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

GLASGOW 19 DEC 1922

Assigned

by Elec. Light

transmitted to ...



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HC 18.12.22