

Rpt. 13.

No. 110700

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

MAY 4 1938

Received at London Office

Date of writing Report

19

When handed in at Local Office

29 APR 1938

Port of LIVERPOOL

No. in Survey held at LYTHAM & PRESTON

Date, First Survey

1/3/38

Last Survey

19/4/1939

(Number of Visits 2)

Reg. Book.

37401 on the SS. BROOMFIELD.

Tons { Gross 660
Net 253

Built at Lytham

By whom built

Lytham S.B. & E. Co. Ltd. Yard No. 841

When built 1938

Owners Gillah Shipping & Carrying Co. Ltd.

Port belonging to Liverpool.

Electric Light Installation fitted by Lytham S.B. & E. Co. Ltd.

Contract No. 841

When fitted 1938

Is the Vessel fitted for carrying Petroleum in bulk

No.

System of Distribution

Double wire

Pressure of supply for Lighting

110

volts, Heating

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 temperature rise

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

No

Have certificates of test results for machines under 100 kw. been submitted and

approved

Yes.

Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing

Have certificates for generators under 100 kw. been supplied and approved

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. On platform at Starboard side of.

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

Yes.

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 dynamo.

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

Yes.

and

Yes.

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.

is it of an approved type

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.

is the non-hygroscopic insulating material of an approved

type

Yes.

Yes.

and is the frame effectively earthed

Yes.

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

accessibility of all parts

Yes.

Yes.

Yes.

Yes.

Yes.

Yes.

Yes.

Yes.

Yes.

Yes.

Yes.

Yes.

Yes.

omnibus bars

Yes.

Yes.

Yes.

Yes.

Yes.

Yes.

Yes.

Yes.

Yes.

Yes.

Yes.

Yes.

Yes.

"off" position

No.

No.

No.

No.

No.

No.

No.

No.

No.

No.

No.

No.

No.

switches

No.

No.

No.

No.

No.

No.

No.

No.

No.

No.

No.

No.

No.

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

D.P. switch & D.P. fuses for dynamo each outgoing circuit.

Are turbine driven generators fitted with emergency trip switch as per rule

Are cupboards or compartments containing switchboards composed of

fire-resisting material or lined with approved material

Yes.

Instruments on main switchboard

ammeters

voltmeters

Yes.

Yes.

Yes.

Yes.

Yes.

Yes.

Yes.

Yes.

Yes.

Yes.

Yes.

Yes.

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.

Yes.

Yes.

Yes.

Yes.

Yes.

Yes.

Yes.

Yes.

Yes.

are the fusible cutouts of an approved type

Yes.

have the reversed

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current protection devices been tested under working conditions ☒ are all fuses labelled as per rule ☒ **Joint Boxes, Section and Distribution Boards.** is the construction, protection, insulation, material, and position of these as per rule ☒ **Cables:** Single, twin, concentric, or multicore ☒ are the cables insulated and protected as per Tables IV, V, X, XI, XII or XIII of the Rules ☒ If the cables are insulated otherwise than as per Rule, are they of an approved type ☒ **Fall of Pressure,** state maximum between bus bars and any point of the installation under maximum load ☒ **Cable Sockets,** are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets ☒ **Paper Insulated and Varnished Cambric Insulated Cables,** If conductors are paper or varnished cambric insulated, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound ☒ or waterproof insulating tape ☒ **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 ☒ are cables laid under machines or floorplates ☒ if so, are they adequately protected ☒ Are cables in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered or run in conduit ☒ **Support and Protection of Cables,** state how the cables are supported and protected ☒ **Two leads: L.C. and A.B. in tray with sheet metal covers** **Two leads: L.C. and A.B. in tray** **Rec'd: L.C. and A.B. clipped up** 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 ☒ **Refrigerated Chambers,** are the cables and fittings in accordance with the special requirements ☒ **Joints in Cables,** state if any, and how made, insulated, and protected ☒ **Watertight Glands and Deck Tubes,** are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands ☒ **Bushes in Beams and Non-watertight Partitions,** where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed ☒ state the material of which the bushes are made ☒ **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 ☒ **Navigation Lamps,** are these separately wired ☒ controlled by separate switch and separate fuses ☒ are the fuses double pole ☒ are the switches and fuses grouped in a position accessible only to the officers on watch ☒ **Secondary Batteries,** are they constructed and fitted as per Rule ☒ has each navigation lamp an automatic indicator as per Rule ☒ are they ventilated as per Rule ☒ **Fittings,** are all fittings on weather decks, in storerooms and engine rooms and wherever exposed to drip or condensed moisture, watertight ☒ 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 ☒ 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 ☒ are all fittings suitably ventilated ☒ **are all switches and lampholders constructed wholly of non-ignitable, non-absorbent materials** ☒ **Heating and Cooking Appliances,** are they constructed and fitted as per Rule ☒ are air heaters constructed and fitted as per Rule ☒ **Searchlight Lamps, No. of** ☒ whether fixed or portable ☒ are their fittings as per Rule ☒ **Motors,** are their working parts readily accessible ☒ are the coils self-contained and readily removable for replacement ☒ are the brushes, brush holders, terminals and lubricating arrangements as per Rule ☒ are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material ☒ are they protected from mechanical injury and damage from water, steam or oil ☒ are their axes of rotation fore and aft ☒ 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 ☒ have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing ☒ have certificates for all motors for essential services been supplied and approved ☒ **Control Gear and Resistances,** are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule ☒ **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 ☒ are all fuses of the fitted cartridge type ☒ are they of an approved type ☒ If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed flameproof type approved for use in dangerous spaces ☒ are they suitably stored in dry situations ☒ **Spare Gear,** if the vessel is for open sea service have spares been supplied as per Rule ☒

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	3	110	27.25	1000	S.C. Steam Engine			
AUXILIARY									
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 Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR	1	.01	7	.044	27.25	31	14	V.I.R.	Conduit.
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER									
MOTOR GENERATOR									
ENGINE ROOM	1	.003	3	.036	8	12.0	12	V.I.R.	L.C. & A.B.
BOILER ROOM	1	.003	3	.036	8	12.0	12	V.I.R.	L.C. & A.B.
AUXILIARY SWITCHBOARDS									
ACCOMMODATION	1	.0045	7	.029	13.5	19.2	110	V.I.R.	L.C. & A.B. - L.C.B.
Navigation	1	.003	3	.036	3.4	12.0	134	V.I.R.	L.C. & A.B. - L.C.B.
WIRELESS									
SEARCHLIGHT	1	.002	3	.029	.4	7.8	318	V.I.R.	L.C. & A.B. - L.C.B.
MASTHEAD LIGHT	1	.002	3	.029	.4	7.8	46	V.I.R.	L.C.B.
SIDE LIGHTS	1	.002	3	.029	.25	7.8	32	V.I.R.	L.C.B.
COMPASS LIGHTS	1	.002	3	.029	.4	7.8	170	V.I.R.	L.C.B.
STEER LIGHTS	1	.0045	7	.029	.48	18.2	328	V.I.R.	L.C. & A.B.
CARGO LIGHTS									
HEATERS									

MOTOR CONDUCTORS.										
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 Nominal 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										

The Electrical Equipment is installed in accordance with the approved plans.

All Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

ENGINEERING COMPANY, LIMITED
R. Friedenthal

Electrical Engineers.

Date 28/4/38

COMPASSES.

Minimum distance between electric generators or motors and standard compass 28 ft approx

Minimum distance between electric generators or motors and steering compass 47 ft approx

The nearest cables to the compasses are as follows:—

A cable carrying 2.8 Ampères 12 feet from standard compass 6 feet from steering compass.

A cable carrying .2 Ampères 20 feet from standard compass 4 feet from steering compass.

A cable carrying 13.5 Ampères 12 feet from standard compass 10 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 any course in the case of the standard compass, and nil degrees on any course in the case of the steering compass.

THE LYTHAM SHIPBUILDING and
ENGINEERING COMPANY, LTD

Builder's Signature.

Date 28/4/38

R. Friedenthal

Is this installation a duplicate of a previous case Yes. If so, state name of vessel SS. BRACKENFIELD.

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

This installation has been fitted on board under special survey and in accordance with the approved plans and has been tested under full working conditions and found satisfactory.

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

W. H.
4/5/38.

Total Capacity of Generators 3 Kilowatts.

The amount of Fee ... £ 5 :-

When applied for,
29 APR 1938

Travelling Expenses (if any) £

11/-

When received.

12.5.1938

R. C. Cuyk

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

LIVERPOOL

3 MAY 1938

Assigned

Electric Light

G.R.R.



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