

REPORT ON ELECTRICAL EQUIPMENT.

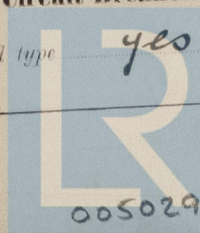
(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

SEP 21 1938

Received at London Office

Date of writing Report 15th 9th 38 When handed in at Local Office 19: 9: 38 Port of Glasgow
 No. in Survey held at Glasgow Date, First Survey 14: 6: 38 Last Survey 16 - 9 1938
 Reg. Book. 89059 on the S.S. "MANCHESTER PROGRESS" (Number of Visits 7)
 Tons { Gross 5620
 Net 3343
 Built at Glasgow By whom built Blythwood S.B.C. & Co. Yard No. 51 When built 1938
 Owners Manchester Tiners Ltd. Port belonging to Manchester
 Electric Light Installation fitted by Sunderland Forge & Eng Co Contract No. 51 When fitted 1938
 Is the Vessel fitted for carrying Petroleum in bulk no.

System of Distribution two wire
 Pressure of supply for Lighting 110 volts, Heating 110 volts, Power 110 volts.
 Direct or Alternating Current, Lighting direct. Power direct.
 If alternating current system, state frequency of periods per second — yes.
 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 no, is an adjustable regulating resistance fitted in series with each shunt field —
 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 —
 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, is the ventilation in engine room
 Position of Generators in engine room
 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 near generator.
 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 — 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
 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, and is the frame effectively earthed yes
 Are the fittings as per Rule regarding: — spacing or shielding of live parts yes, temperature rise of omnibus bars yes, accessibility of all parts yes, absence of fuses on back of board yes, are moving parts of switches alive in the "off" position no, are all screws and nuts securing connections effectively locked yes, are any fuses fitted on the live side of switches no
 Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches
 each generator controlled by D.P. switch and fuses, each outgoing circuit controlled by D.P.C.O.
 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 —
 Instruments on main switchboard 2 ammeters 2
 voltmeters — synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection —
 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, are the fusible cutouts of an approved type yes, have the reversed do these comply with the requirements of the Rules yes



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current protection devices been tested under working conditions

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 single twin are the cables insulated and protected as per Tables IV, V, X or XI of the Rules yes

If the cables are insulated otherwise than as per Rule, are they of an approved type —

any point of the installation under maximum load 5.2 Volts.

area of 0.04 square inch and above provided with soldering sockets yes

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 yes

Paper Insulated and Varnished Cambric Insulated Cables.

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 Are cables in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered or run in conduit yes

Support and Protection of Cables, state how the cables are supported and protected main L.C. clipped; machinery spaces L.C., L.C.B., or L.C.A.B. clipped; accommodation L.C. 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, are the cables and fittings in accordance with the special requirements —

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 lead and armoured efficiently earthed by means of clips or bonding glands.

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 —

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 —

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 —

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 yes, are all switches and lampholders constructed wholly of non-ignitable, non-absorbent materials yes

Heating and Cooking Appliances, are they constructed and fitted as per Rule —, are air heaters constructed and fitted as per Rule yes

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

Are 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/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 — **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 — 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 type approved by the Home Office —

Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule yes.

PARTICULARS OF GENERATING PLANT.							WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	Fuel Used.	Flash Point of Fuel.
		Kilowatts.	Volts.	Amps.	Revs. per Min.			
MAIN	2	30	110	272	500	steam engines.		
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.	Circuit.	Rule.			
MAIN GENERATOR	1	2	37	0.83	272	296	60	V.C.	L.C.
CAPTAIN'S ACC. DB.	1	0.225	7	0.64	37.5	46	64	Rubber	"
SALOON STAB. PORT. DB.	1	0.07	7	0.36	17.5	24	48	"	"
SALOON STAB. STB. DB.	1	0.1	7	0.44	22.5	31	88	"	"
SALOON. PORT. DB.	1	0.225	7	0.64	37.3	46	88	"	"
TRANSFORMER GENERATOR.	1	0.4	19	0.52	49.5	64	120	Rubber	L.C.A.B.
ENGINE ROOM. DB.	1	0.4	19	0.52	49.5	64	120	Rubber	L.C.A.B.
BOILER ROOM.	1	0.4	19	0.52	49.5	64	120	Rubber	L.C.A.B.
AUXILIARY SWITCHBOARDS	1	0.6	19	0.64	103	135	152	V.C.	L.C.B.
STOKER MOTOR S.B.	1	0.6	19	0.64	84	135	196	V.C.	"
CRUSHER MOTOR S.B.	1	0.225	7	0.64	33.9	46	108	Rubber	L.C.A.B.
E.R. MOTORS. S.B.	1	0.225	7	0.64	37.8	46	150	"	L.C.
CATTLE SPACE VENTILATORS	1	0.1	7	0.44	18.7	31	480	"	"
NAVIGATION D.B.	1	0.15	37	0.72	203	246	368	V.C.	"
ACCOMMODATION S.B.	1	0.6	19	0.64	118	135	200	"	"
ENG. OFF. S.B.	1	0.6	19	0.64	72	135	150	"	"
CREWS. S.B.	1	0.225	7	0.64	38.5	46	69	Rubber	"
ENG. & OFF. PORT. DB.	1	0.07	7	0.36	21.2	24	40	"	"
" " STAB. DB.	1	0.1	7	0.44	24	31	150	"	"
WIRELESS	1	0.1	7	0.44	10.2	31	405	"	L.C.A.B.
AFT. CREW. DB.	1	0.015	1	0.44	36	6.1	872	"	L.C.
MASTHEAD LIGHT	1	0.015	1	0.44	36	6.1	135	"	"
SIDE LIGHTS	1	0.015	1	0.44	2	6.1	40	"	"
COMPASS LIGHTS	1	0.1	7	0.44	22.2	31	150	"	"
LIGHTING CATTLE SPACE DB.	1	0.1	7	0.44	12.7	31	296	"	L.C.A.B.
CARGO LIGHTS FOR D. DB.	1	0.1	7	0.44	12.7	31	240	"	"
" " AFT. D.B.	1	0.045	7	0.29	13.7	18.2	90	"	"
HEATERS	1	0.045	7	0.29	13.7	18.2	90	"	"

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	4	1	0.045	7	0.29	17.2	18.2	100	V.C.	L.C.A.B.
STOKER MOTORS.	2	1	0.225	7	0.64	42	46	120	Rubber	"
CRUSHER MOTORS.	1	1	0.045	7	0.29	6.9	18.2	35	"	"
PURIFIER	1	1	0.045	7	0.29	13.5	18.2	72	"	"
DRILLING M/C.	1	1	0.045	7	0.29	13	18.2	84	"	"
GRINDER.	1	1	0.045	7	0.29	13	18.2	84	"	"

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All Conductors are of annealed copper conforming to British Standard Specification No. 7 (or International Electro-technical Commission Publication No. 28).

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

The foregoing is a correct description.

P.Pro.

THE SUNDERLAND FORGE & ENGINEERING CO. LTD. Electrical Engineers.

Date 16th September 1938.

COMPASSES.

Distance between electric generators or motors and standard compass

130 feet.

Distance between electric generators or motors and steering compass

126 feet.

The nearest cables to the compasses are as follows:—

A cable carrying 2 Amperes led into feet from standard compass led into feet from steering compass.

A cable carrying 18.7 Amperes 12 feet from standard compass 12 feet from steering compass.

A cable carrying Amperes 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 40 degrees on any course in the case of the standard compass, and 40 degrees on any course in the case of the steering compass.

BLITHWOOD SHIPBUILDING CO. LTD.

John Stewart

Secretary

Builder's Signature.

Date

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.)

The electrical equipment of the vessel has been fitted on board under special survey, tested under full working conditions and found satisfactory. The materials and workmanship are good.

Notice

22/9/38.

9.6

19/9/38

Total Capacity of Generators 60 Kilowatts.

The amount of Fee ... £ 28 : 10 : 0

When applied for,

When received,

Travelling Expenses (if any) £

Committee's Minute GLASGOW 20 SEP 1938

Assigned

SEE ACCOMPANYING MACHINERY REPORT.

R. S. Hutchinson, Surveyor

to Lloyd's Register of Shipping.



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