

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 18 FEB 1931

Date of writing Report 31. 1. 1931 When handed in at Local Office 16. 2. 1931 Port of GLASGOW.

No. in Survey held at GLASGOW. Date, First Survey 19. 6. 30 Last Survey 2. 2. 1931
Reg. Book. (Number of Visits 12)

88929 on the m.v. "WORCESTERSHIRE" Tons { Gross 11453
Net 7161

Built at GLASGOW By whom built FAIRFIELD, S.B. & ENGINEERS, LTD. Card No. 640 When built 1930/31

Owners BIBBY, S.S. CO. LTD. Port belonging to LIVERPOOL

Electric Light Installation fitted by FAIRFIELD, S.B. & ENGINEERS, CO. LTD. Contract No. 640 When fitted 1930/31

Is the Vessel fitted for carrying Petroleum in bulk No. /

System of Distribution 2 WIRE

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 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 STARB^d SIDE, ENGINE ROOM, HOLD LEVEL.

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

NONE and NONE, 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 Board, where placed AFT END OF ENGINE ROOM, LOWER DECK LEVEL.

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 IN SAME COMPARTMENT

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 NONE and NONE

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 EACH GENERATOR HAS

1000 AMP. TRIPLE POLE, %LOAD, TIME LAG, REVERSE CURRENT, CIRCUIT BREAKER, WITH MAGNETIC BLOWOUT, 3rd POLE ACTING AS EQUALISER. OUTGOING CIRCUITS HAVE EITHER D.P. %LOAD, TIME LAG, CIRCUIT BREAKERS WITH MAGNETIC BLOWOUTS OR D.P. SWITCHES AND FUSES.

Instruments on main switchboard 29 ammeters 4 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 WITH

SWITCHES AND FUSES ON EACH POLE.

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



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Cables: Single, twin, concentric, or multicore SINGLE 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 LIGHTING 4.9 VOLTS - POWER 8.4 VOLTS

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 NONE

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 L.C. CABLES AND L.A.O. CABLES FIXED ON SHEET IRON PLATES WITH GALV. IRON CLIPS. V.I.R. CABLES IN WOOD CASING OR SUPPORTED BY PORCELAIN CLEATS

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 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 finished YES state the material of which the bushes are made SWEET LEAD AND WOOD

Earthing Connections, state what earthing connections are fitted and their respective sectional areas

METALLIC SHEATHING OF CABLES EFFICIENTLY BONDED TO EARTH

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 EMERGENCY GENERATOR AND SWITCHBOARD IN EMERGENCY DYNAMO RM., PROMENADE D^o AFT. A SUPPLY TO EMERGENCY BOARD FROM MAIN BOARD. GENERATOR DRIVEN BY A 60 H.P. 2 CYLINDER HEAVY OIL ENGINE.

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 NONE

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 NONE

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected NONE

how are the cables led

where are the controlling switches situated

Searchlight Lamps, No. of 1-20, whether fixed or portable FIXED, are their fittings as per Rule YES

Arc Lamps, other than searchlight lamps, No. of NONE, 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, WHERE POSSIBLE

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 YES

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 —

are the connections made 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	3	225	220	930	185	4 CYLINDER, W.H. ALLEN	DIESEL OIL	NOT LESS THAN 150° F.
AUXILIARY	1	36	220	163.5	325	2 CYLINDER, W.H. ALLEN	" "	"
EMERGENCY	1					HEAVY OIL ENGINE	" "	"
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 Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
EACH MAIN GENERATOR	2	84590	127	.093	930	1024	172	V.I.R. RUBBER	LEAD COVERED
EQUALISER CONNECTIONS	1	84590	127	.093				" "	" "
AUXILIARY GENERATOR	1	19640	37	.083	163.5	184	35	" "	" "
EMERGENCY GENERATOR	1	19640	37	.083	163.5	184	526	" "	" "
ROTARY TRANSFORMER	1	06000	19	.064	50.04	83	60	" "	LEAD COVERED
ENGINE ROOM LIGHTING	1	06000	19	.064	50.04	83	60	" "	LEAD COVERED
BOILER ROOM	1	06000	19	.064	50.04	83	60	" "	LEAD COVERED
AUXILIARY SWITCHBOARD	1	103760	127	.103	615	595	485	" "	V.I.R. & L.C. & ARMOURD & BRAIDED
CREWS ACCOM. FURN. & RADIATORS	1	07892	19	.072	72.64	97	645	" "	" "
CABIN & ETC. UPPER DECK	1	07892	19	.072	63.22	97	100	" "	V.I.R. IN CASING
" " BRIDGE DECK AND PROM. D ^o AFT	1	06000	19	.064	53.06	83	125	" "	" "
CREWS Q ^o AFT & LAUNDRY LIGHTS ACCOMODATION	1	02214	7	.064	15.08	46	475	" "	LEAD COVERED
GALLEY, PANTRIES & STORES L ^o	1	02214	7	.064	15.08	46	75	" "	V.I.R. IN CASING OR CONDUIT
CABIN & PUBLIC R ^o FANS ETC.	1	40640	61	.093	264.21	288	100	" "	" "
CABIN ACCOM. PROM. & BOAT D ^o AND LOUNGE & DRAWING R ^o s	1	10090	19	.083	67.13	118	200	" "	" "
WIRELESS	1	02214	7	.064	15.5	46	565	" "	V.I.R. & L.C. & ARMOURD & BRAIDED
SEARCHLIGHT	1	06000	19	.064	60	83	350	" "	" "
MASTHEAD LIGHT	1	06000	19	.064	60	83	350	" "	" "
SIDE LIGHTS	1	06000	19	.064	60	83	350	" "	" "
COMPASS LIGHTS	1	06000	19	.064	60	83	350	" "	" "
BOAT LIGHTS	1	01462	7	.052	13.63	37	750	" "	V.I.R. & L.C. & ARMOURD & BRAIDED
CARGO LIGHTS	1	02840	19	.044	22.9	53	100	" "	" "
POLE LIGHTS	1	03960	19	.052	33.08	64	275	" "	V.I.R. & L.C. & ARMOURD & BRAIDED
NAVIGATION	1	01462	7	.052	4.49	37	750	" "	" "

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 Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
TURBO BLOWERS	2	1	74350	91	.103	1090	1306	246	V.I.R. RUBBER	LEAD COVERED
GENERAL SERVICE PUMP	1	1	10090	19	.083	60-86	118	205	" "	" "
EMERGENCY BILGE PUMP	1	1	03960	19	.052	62.5	64	670	" "	L.C. & L.C. & ARMOURD & BRAIDED
SANITARY PUMP	1	1	10090	19	.083	60-86	118	185	" "	LEAD COVERED
JACKET COOLING WATER PUMPS	2	1	24650	37	.093	168	214	260	" "	" "
PISTON COOLING FRESH WATER PUMPS.	2	1	07892	19	.072	60-86	97	315	" "	" "
AUX. AIR COMPRESSOR	2	1	103760	127	.103	782	595	170	" "	" "
AUX. ENGINE COOLING WATER PUMP	2	1	00455	7	.029	14	18.2	170	" "	" "
ENGINE TURNING GEAR	2	1	06000	19	.064	77	83	175	" "	" "
CO ₂ MACHINES	2	1	10090	19	.083	100	118	125	" "	" "
FORCED LUBRICATING OIL PUMPS	2	1	07892	19	.072	62	97	315	" "	" "
OIL FUEL TRANSFER PUMP	2	1	00455	7	.029	17	18.2	275	" "	" "
WINDLASS	1	1	24650	37	.093	275	214	300	" "	L.C. & ARMOURD & BRAIDED
WINCHES, FORWARD	4	1	14780	37	.072	215	184	190	" "	" "
WINCHES, AFT & CAPSTANS	4	1	30240	37	.103	270	240	465	" "	LEAD COVERED
STEERING GEAR-MOTORS	2	1	19640	37	.083	174	184	446	" "	" "
(a) Motor Generators										
(b) Main Motor										
ENGINE ROOM FANS & VENTILATING FANS	7	1	14780	37	.072	96.9	152	210	" "	V.I.R. IN CONDUIT
GALLEY MACHINERY	15	1	24650	37	.093	192.15	214	115	" "	" "
ENGINE R ^o SMALL MOTORS	7	1	14780	37	.072	136.3	152	50	" "	LEAD COVERED
" " " "	8	1	06000	19	.064	75.7	83	230	" "	" "
CARGO WINCHES	4	1	40640	61	.093	490	288	200	" "	V.I.R. IN CONDUIT
LAUNDRY MOTORS	6	1	06000	19	.064	50	83	561	" "	LEAD COVERED
BILGE PUMP	1	1	03960	19	.052	60	64	120	" "	" "

Register Foundation

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.

E. Skinner Electrical Engineer* Date 12/2/31

COMPASSES.

Distance between electric generators or motors and standard compass 20 FEET FROM W/T. ALTERNATOR

Distance between electric generators or motors and steering compass 30 " " " "

The nearest cables to the compasses are as follows:—

A cable carrying 127 Ampères IN feet from standard compass feet from steering compass.

A cable carrying 127 Ampères feet from standard compass IN 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 ANY course in the case of the standard

compass, and NIL degrees on ANY course in the case of the steering compass.

THE GLASGOW SHIPBUILDING AND ENGINEERING CO., LIMITED.

J. Henderson MANAGER

Builder's Signature. Date 12/2/31

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 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.

See Logbook
 15/11/31

ab
 14/2/31

Total Capacity of Generators 711 Kilowatts.

The amount of Fee ... £ 49 : 5 : 6 When applied for, 10. 2. 19. 31

Travelling Expenses (if any) £ When received, 13. 4. 31

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

Committee's Minute GLASGOW 17 FEB 1931

Assigned Elec. Light

1m1120.—Transfer.
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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