

**REPORT ON ELECTRIC FITTINGS.**

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office..... 27 FEB 1929

Date of writing Report 24.1.1929 When handed in at Local Office 25.2.1929 Port of GLASGOW.

No. in Survey held at GLASGOW. Date, First Survey 6.11.28 Last Survey 23.1.1929  
Reg. Book. (Number of Visits... 13)84796. on the M.V. STAFFORDSHIRE. Tons { Gross 10655  
Net

Built at GOVAN. By whom built THE FAIRFIELD S.B. &amp; E. CO. Yard No. 630 When built 1929.

Owners MESSRS THE BIBBY S.S. CO. LTD Port belonging to LIVERPOOL.

Electric Light Installation fitted by MESSRS THE FAIRFIELD S.B. &amp; E. CO. LTD Contract No. 630 When fitted 1929.

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 overload 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 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 STARB<sup>d</sup> 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 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 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, 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 EACH GENERATOR

HAS 1000 AMP. TRIPLE POLE, 0/LOAD, TIME LAG, REVERSE CURRENT CIRCUIT BREAKER, WITH MAGNETIC  
BLOWOUTS, THIRD POLE EQUALISER; OUTGOING CIRCUITS HAVE EITHER D.P. 0/LOAD, TIME LAG BREAKERS OR  
D.P. SWITCHES & FUSES ✓

Instruments on main switchboard 28 ✓ 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 &amp; FUSES ON EACH POLE. ✓

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 ✓

? Boat lights  
600

**Insulation of Cables**, state type of cables, single or twin **SINGLE** 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 **LIGHTING 4.5 VOLTS - POWER 9.1 VOLTS** ✓

**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 **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.B. CABLES FIXED ON SHEET IRON PLATES WITH GALV. IRON CLIPS; V.I.R. CABLES IN WOOD CASING.** ✓

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 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 **SHEET LEAD & WOOD** ✓

**Earthing Connections**, state what earthing connections are fitted and their respective sectional areas **NONE** ✓

are their connections made as per Rule **YES** ✓

**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 R<sup>m</sup>. BOAT D<sup>st</sup> AFT; A DUPLICATE 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** ✓, 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 **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 axis 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 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 **—**

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	205	220	930	185	4 CYLINDER. W.H. ALLEN DIESEL ENGINE.	DIESEL OIL	NOT LESS THAN 150° F.
EMERGENCY	1					60 H.P.	"	"

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	4	.837	127	.093	930	180	PURE RUBBER	LEAD COVERED
	EQUALISER	1	.837	127	.093			"	"
	EMERGENCY GENERATOR	2						"	"
	EMERGENCY SWITCHBOARD	2	.196	37	.083	163.5	456	"	"
S6	ENGINE ROOM LIGHTING	2	.06	19	.064	36.68	60	"	"
	CREW FOR <sup>o</sup> & RADIATORS	2	.06	19	.064	45.8	690	"	V.I.R. + L.C. + ARMOURED
J2	CABIN ACCOM. BOAT & BRIDGE D <sup>st</sup> & OFFICERS	2	.10	19	.083	83.5	90	"	V.I.R.
J3	CABIN ACC. BOAT & BRIDGE D <sup>st</sup>	2	.06	19	.064	42.27	125	"	"
S4	CREW AFT & LAUNDRY LIGHTING	2	.02	7	.064	12.68	465	"	LEAD COVERED
S5	GALLEY, PANTRY & STORES L <sup>ts</sup>	2	.014	7	.052	13.36	240	"	"
J7	FANS & RADIATORS	2	.498	61	.103	236.79	95	"	V.I.R.
SE1	POLICE LIGHTS	2	.039	19	.052	21.13	360	"	V.I.R. + L.C. + ARMOURED
DE2	NAVIGATION LIGHTS	2	.014	7	.052	4.94	750	"	"
	BOAT LIGHTS	2	.014	7	.052	13.6	750	"	"
	WIRELESS	2	.022	7	.064	12.5	400	"	"
	SEARCHLIGHT	2	.06	19	.064	60	480	"	V.I.R.
	MASTHEAD LIGHT							"	"
	SIDE LIGHTS							"	"
	COMPASS LIGHTS							"	"
	POOP LIGHTS							"	"
S8	CARGO LIGHTS	2	.039	19	.052	23.09	115	"	"
	ARC LAMPS							"	"
	HEATERS							"	"

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	2	3 PER POLE .743	91	.103	1090	228	PURE RUBBER	LEAD COVERED
	TURBO BLOWERS	1	.075	19	.072	86	195	"	"
	GENERAL SERVICE PUMP	1	.039	19	.052	62.5	675	"	L.C. + L.C. + ARMOURED
	EMERGENCY BILGE PUMP	1	.075	19	.072	86	120	"	LEAD COVERED
	SANITARY PUMP	2	.246	37	.093	183	255	"	"
	JACKET COOLING PUMPS	2	.075	19	.072	86	300	"	"
	WATER PUMPS	2	1.0	127	.103	800	200	"	"
	PISTON COOLING OIL PUMPS	2	.007	7	.036	14	150	"	"
	AIR COMPRESSOR	2	.06	19	.064	77	160	"	"
	AUX. ENGINE COOLING WATER PUMP	2	.100	19	.083	100	105	"	"
	ENGINE TURNING GEAR	2	.039	19	.052	62	300	"	"
	C.O.2 MACHINES	2	.004	7	.029	17	225	"	"
J14	LUBRICATING OIL PUMPS	2	.004	7	.029	17	225	"	"
	OIL FUEL TRANSFER PUMP	7	1.0	127	.103	925	765	"	V.I.R. + L.C. + ARMOURED
	WINDLASS							"	"
J15	WINCHES, FORWARD	4	.302	37	.103	270	465	"	LEAD COVERED
	WINCHES, AFT & CAPTAINS	2	.147	37	.072	152	405	"	"
	STEERING GEAR							"	"
S9	WORKSHOP MOTOR	7	.100	19	.083	103	180	"	V.I.R.
	VENTILATING FANS	2	.302	37	.103	185	225	"	V.I.R.
S10	WINCHES, NO.5 HATCH	13	.246	37	.093	187.5	175	"	V.I.R.
S11	GALLEY MACHINERY	7	.147	37	.072	150	50	"	LEAD COVERED
	ENGINE R <sup>m</sup> SMALL MOTORS	8	.06	19	.064	75.4	225	"	"
S12	" " " "	2	.196	37	.083	220	135	"	V.I.R.
J13	WINCHES, NO.4 HATCH	6	.06	19	.064	49.4	630	"	LEAD COVERED
J16	LAUNDRY MACHINERY	1	.06	19	.064	62	90	"	"
	BILGE PUMP	2	.089	19	.052	31	225	"	V.I.R. + L.C. + ARMOURED
JE3	BOAT HOISTS PORT	2	.039	19	.052	31	225	"	"
JE4	" " STARB <sup>o</sup>	2	.039	19	.052	31	225	"	"

?  
OK in 1/2 hr rating  
2 Man Capin Comp<sup>o</sup>

< 1 hr rating

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 *5<sup>th</sup> February 1929*

COMPASSES.

Distance between electric generators or motors and standard compass *28 FEET FROM FAN MOTOR*

Distance between electric generators or motors and steering compass *66 " " " "*

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.

For THE FAIRFIELD S.B. & E. COMPANY, LTD. *[Signature]* 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, &c. *This installation has been fitted on board under special survey. Tested under full load conditions and found satisfactory. The materials and workmanship were found to be good and correct.*

*a.b.*  
*25/2/29*

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

*Elec Light*  
*[Signature]*  
*6-3-29*

Total Capacity of Generators *615* Kilowatts

The amount of Fee ... *£46-17-6* : When applied for, *20. 2. 19. 29*

Travelling Expenses (if any) £ : : When received, *15/4/29*

*J. Rankin*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 26 FEB 1929**

Assigned *Elec Light*

Imp. 9, 24. - Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)