

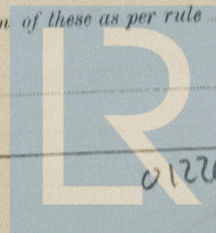
# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office... 2 FEB 1935

Date of writing Report 26. 1. 35 When handed in at Local Office 1. 2. 1035 Port of GLASGOW.  
 No. in Survey held at GLASGOW. Date, First Survey 29. Oct '34 Last Survey 22nd Jan 1935.  
 Reg. Book. 91463 on the T.S.S. "TAROONA". (Number of Visits... 9)  
 Tons { Gross 4286  
 Net 1849  
 Built at GLASGOW By whom built A. STEPHEN & SONS LD. Yard No. 543 When built 1934  
 Owners TASMANIAN STEAMERS PROPRIETARY LTD. Port belonging to MELBOURNE  
 Electric Light Installation fitted by A. STEPHEN & SONS LTD Contract No. 543 When fitted 1934.  
 Is the Vessel fitted for carrying Petroleum in bulk No.

System of Distribution 2 Wire Direct Current. ✓  
 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 ✓  
 Position of Generators Engine Room Ford Lower Deck Level No 1 Port, No 2 Mid, No 3 Starboard. ✓  
 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 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 Direct coupled on same bedplate. ✓  
 Main Switch Boards, where placed Engine Room Ford Flood 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 —  
 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 Slate, is all insulation of high dielectric strength and of permanently high insulation resistance. Yes ✓  
 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 ✓, connections of switches Yes ✓  
 individual fuses to voltmeter, pilot or earth lamp Yes ✓  
 Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches 1200 Amp T.P. circuit Breakers for generators, Outgoing circuits of 200 Amps upward D.P. circuit Breakers, Outgoing circuits 30, 60, 100, + 160 Amps, D.P. Knife switches + D.P. fuses. ✓  
 Instruments on main switchboard 3 ammeters 2 voltmeters selector switch 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 2 Earth Lamps controlled by Lumbee switches + D.P. fuses. ✓  
 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 *3.6 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 *Cambric Insulated 7/064 upwards sealed + taped*

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 *L.b. & L.b. Lipped direct to wood bulkhead and on*

Support and Protection of Cables, state how the cables are supported and protected *L.b. & L.b. clipped direct to wood bulkhead + on*

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 bushed *Yes* state the material of which the bushes are made *Lead + Fibre*

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

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 *Diesel driven generator*

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 in chart room*

has each navigation lamp an automatic indicator as per Rule *Yes*

Secondary Batteries, are they constructed and fitted as per Rule *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 *3 lagged Oyster fittings with heavy guards*

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*

where are the controlling switches situated *None*

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 axes 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 *Yes*, if not of this type, state distance of the combustible material horizontally or vertically above the motors *—* and *—*

Control Gear and Resistancees, 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 *None*

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 ...	5	200	220	910	1000	Steam Turbine		
AUXILIARY ...								
EMERGENCY ...	1	24.5/30	220	136	850/1000	Oil Engine	1 Baird Diesel Oil	220°F
ROTARY TRANSFORMER								

## GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		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.			
MAIN GENERATOR ...	2	0.49850	61	0.103	910	972	145	Var. Cambric	L.b. & B.
EQUALISER CONNECTIONS ...	1	0.49850	61	0.103	400	486	36	"	"
AUXILIARY GENERATOR ...									
EMERGENCY GENERATOR ...	1	0.10090	19	0.083	136	172	45	"	"
ROTARY TRANSFORMER MOTOR ...									
ENGINE ROOM ...	1	0.01462	7	0.052	24	37	52	V.I.R.	L.b. & B.
BOILER ROOM ...									
AUXILIARY SWITCHBOARDS ...									
"A" Lw. Bd.	1	0.30240	37	0.103	300	346	436	Var. Cambric	L.b. & B.
"B" " " "	1	0.84590	127	0.093	700	733	210	"	"
"C" " " "	1	0.49850	61	0.103	450	486	336	"	"
"D" " " Domestic	1	0.60620	91	0.093	500	561	278	"	L.b. & B.
"E" " " Emergency	1	0.14780	37	0.072	136	222	276	"	"
ACCOMMODATION ...									
WIRELESS ...	1	0.00701	7	0.036	15.0	24.0	240	V.I.R.	L.b. & B.
SEARCHLIGHT ...									
MASTHEAD LIGHT ...	1	0.00194	3	0.029	0.3	4.8	510	V.I.R.	L.b.
SIDE LIGHTS ...	1	0.00194	3	0.029	0.3	4.8	85	"	"
COMPASS LIGHTS ...	1	0.00194	3	0.029	0.3	4.8	40	"	"
POOP LIGHTS ...	1	0.00194	3	0.029	0.1	7.8	740	"	"
CARGO LIGHTS ...	1	0.00194	3	0.029	0.6	4.8	60	"	"
ARC LAMPS ...									
HEATERS ...									

## MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		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.			
BALLAST PUMP ...	1	1	0.06000	19	0.064	109	122	52	V.I.R.	L.b. & B.
MAIN BILGE LINE PUMPS ...	1	1	0.06000	19	0.064	109	122	112	"	"
AUX. " " "	1	1	0.00701	7	0.036	17.4	24	34	V.I.R.	"
GENERAL SERVICE PUMP ...	1	1	0.00701	7	0.036	12.3	24	116	"	"
EMERGENCY BILGE PUMP ...	1	1	0.06000	19	0.064	92.0	122	340	V.I.R.	"
SANITARY PUMP ...	2	1	0.02214	7	0.064	50	68	72	"	"
MAIN CIRC. SEA WATER PUMPS ...	4	1	0.10090	19	0.083	136	172	140	"	"
AUX. CIRC. FRESH WATER PUMPS ...	2	1	0.03960	19	0.052	38	94	84	"	"
MAIN EXTRACTION AIR COMPRESSOR ...	2	1	0.02214	7	0.064	50	68	124	"	"
FRESH WATER PUMP (ENGINE) ...	2	1	0.01462	7	0.052	24	37	112	V.I.R.	"
ENGINE TURNING GEAR ...	2	1	0.00701	7	0.036	12.3	24	120	"	"
AUX. EXTRACTION PUMPS ...	2	1	0.01046	7	0.044	23.0	31	68	"	"
ENGINE REVERSING GEAR ...	1	1	0.00299	3	0.036	4.2	12.9	76	"	"
LUB. OIL FUSIFIER ...	2	1	0.02214	7	0.064	49.2	68	210	V.I.R.	"
LUBRICATING OIL PUMPS ...	2	1	0.00455	7	0.029	11.75	13.2	60	V.I.R.	"
OIL FUEL PRESSURE PUMPS ...	2	1	0.02214	7	0.064	26.0	68	84	V.C.	"
OIL FUEL TRANSFER PUMP ...	2	1	0.19640	37	0.083	230	266	210	V.C.	L.b. & B.
WINDLASS ...	4	1	0.06000	19	0.064	110	122	75	"	"
WINCHES, FORWARD ...	1	1	0.10090	19	0.083	154	172	210	"	"
CAPSTAN, AFT ...	2	1	0.06000	19	0.064	110	122	75	"	"
WINCHES, AFT ...	1	1	0.00455	7	0.029	9	18.2	60	V.I.R.	L.b. & B.
DISTILLED WATER PUMP ...	2	1	0.00701	7	0.036	11.75	24.0	75	"	"
STEERING GEAR ...	1	1	0.14780	37	0.072	137.0	222	210	V.I.R.	"
SHORE CONNECTION M.G. SET ...										
STEERING MOTOR GENERATOR ...										
GEAR (b) MAIN MOTOR ...	2	1	0.03960	19	0.052	61.7	94	468	V.C.	L.b. & B.
WORKSHOP MOTOR ...	1	1	0.00455	7	0.029	17.3	18.2	90	V.I.R.	"
VENTILATING FANS 0.25 H.P. ...	1	1	0.00194	3	0.029	68	7.8	75	"	L.b. & B.
" " 0.25 H.P. ...	4	1	0.00194	3	0.029	1.3	7.8	90	"	"
" " 0.75 H.P. ...	7	1	0.00194	3	0.029	3.6	7.8	84	"	"
" " 2.25 H.P. ...	2	1	0.00299	3	0.036	9.7	12.9	75	"	"
" " 3.75 H.P. ...	8	1	0.00455	7	0.029	15.8	18.2	90	"	"
" " ENG. RM. ...	1	1	0.01046	7	0.044	17.4	31.0	220	"	L.b. & B.
FORCED DRAUGHT FANS ...	3	1	0.03960	19	0.052	74	94	150	V.C.	"



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  
ALEXANDER STEPHEN & SONS, LIMITED.

Electrical Engineers.

Date 31 JAN 1935

*Alex MacFellous* Director

#### COMPASSES.

Distance between electric generators or motors and standard compass 120 ft.

Distance between electric generators or motors and steering compass 120 ft.

The nearest cables to the compasses are as follows:—

A cable carrying 0.1 Amperes 10 feet from standard compass 6 feet from steering compass.

A cable carrying 1.5 Amperes 12 feet from standard compass 8 feet from steering compass.

A cable carrying 1.0 Amperes 8 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 2° degrees on Any course in the case of the standard compass, and No degrees on Any course in the case of the steering compass.

ALEXANDER STEPHEN & SONS, LIMITED.

*Alex MacFellous* Director

Builder's Signature.

Date 31 JAN 1935

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.) The electrical equipment of this vessel has been fitted on board under special survey, tested under full working condition and found satisfactory. The materials and workmanship were found to be good and sound.

*JH 1/2/35*

*Noted  
LH  
2/2/35*

Total Capacity of Generators 630 Kilowatts.

The amount of Fee ... £ 47 : 5 : 0 28-1-35

Travelling Expenses (if any) £ : : 28-3-35

*A. H. Haffner*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

10,000.—Transfer.  
(The Surveyor is requested not to write on or below the space for Committee's Minute.)



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