

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

No. 8457

Date of writing Report 9/10/1924 When handed in at Local Office 11/10/1924 Port of Sydney N.S.W. Received at London Office 1 DEC 1924

No. in Survey held at Sydney N.S.W. Date, First Survey 22/4/24 Last Survey 8/10/1924
Reg. Book. (Number of Visits 14)

69680 on the T. S. S. "FERNDAL"

Built at Sydney N.S.W. By whom built Commonwealth Dockyard Yard No. 48 When built 1924
Tons { Gross 9686
Net 5664

Owners Australian Commonwealth Line of Steamers Port belonging to Sydney N.S.W.

Electric Light Installation fitted by Commonwealth Dockyard Sydney N.S.W. Contract No. ✓ When fitted 1924

System of Distribution 2 wire, insulated system ✓

Pressure of supply for Lighting 100 volts, Heating 100 volts, Power 100 volts.

Direct or Alternating Current, Lighting Direct Current ✓ Power Direct Current ✓

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 On platform, starboard side, main engine room.

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 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, direct Coupled on Common bedplate.

Main Switch Boards, where placed On platform, close to generating sets

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, 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, on both poles, 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 600 AMPS PER SQ. INCH, individual fuses to voltmeter, pilot or earth lamp Yes, 3 AMPS., connections of switches Flat copper strip

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

controlled by a double pole circuit breaker and double pole switch. One equalizer switch is

fitted, which is interlocked with No 1 Circuit breaker. Each outgoing circuit has a D.P. switch & fuse

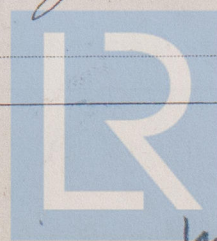
Instruments on main switchboard 2 ammeters 2 voltmeters — synchronising device for paralleling purposes.

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system Lamp System,

2 lamps in series with Centre Connection earthed

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



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Insulation of Cables, state type of cables, single or twin *Single & Twin* 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 *5 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 *Not fitted*

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 *When not on deckheads or bulkheads, the cables are supported on metal trays with sheet metal protector when necessary*

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 secured as per Table VI *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 *No joints in cables*

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 *Lead*

Earthing Connections, state what earthing connections are fitted and their respective sectional areas *Main Generator .156" Galley and Workshop Motors .01" San Motors .0145"*

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 *Not fitted*

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 *No fittings in hold spaces*

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 —

Searchlight Lamps, No. of *One*, whether fixed or portable *Portable*, are their fittings as per Rule *Yes*

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 axis of rotation fore and aft *2 motors fore & aft 2 motors starboard & port*

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 *12" from Motor 2-4" vertically*

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

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 *Yes*

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	2	60	105	540	450	Steam Engine	—	—
AUXILIARY								
EMERGENCY								
ROTARY TRANSFORMER								

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	2	1 sq. inch	124	.103"	525	701-24-0"	Rubber	Lead covered
	AUXILIARY GENERATOR						702-22-0"		
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM Section Box	2	0.1009	19	.083	94	94.40	Rubber	Lead covered
	BOILER ROOM Distribution Box	2	0.01046	4	.044	24.00	114	"	"
	Eng. Room Distribution Box	2	0.01046	4	.044	23.00	152	"	"
	Refrig. Machinery D.B.	2	0.02214	4	.064	12.00	286	"	"
	Steering Compartment D.B.	2	0.02214	4	.064	9.30	456	"	"
	Accommodation Section Box	2	0.1009	19	.083	57.00	68	"	"
	" Distribution Box	2	0.0396	19	.082	17.00	196	"	"
	" " " "	2	0.0396	19	.082	15.00	256	"	"
	" " " "	4	0.02214	4	.044	11.00	96	"	"
	" " " "	4	0.02214	4	.044	13.20	12	"	"
	Navigation Distribution Board	2	0.02214	4	.064	10.00	386	"	"
	Cruiser " Box	2	0.0396	19	.082	16.00	610	"	"
	Deck Light " Box 1	2	0.04592	19	.042	40.00	390	"	"
	" " Box 2	2	0.0396	19	.082	20.00	232	"	"
	WIRELESS	2	0.02214	4	.064	25.00	150	"	"
	SEARCHLIGHT	2	0.04592	19	.042	56.00	482	"	"
	MASTHEAD LIGHT	2	0.00299	3	.036	1.00	530	"	Lead covered & armoured
	SIDE LIGHTS	2	0.00192	3	.029	1.00	83	"	Lead covered
	COMPASS LIGHTS	2	0.00192	3	.029	0.20	30	"	"
	STEER LIGHTS	2	0.00299	3	.036	1.00	460	"	"
	CARGO LIGHTS Section Box	2	0.04592	19	.042	68.00	82	"	Lead covered & armoured
	Deck LAMPS	2	0.04592	19	.042	70.00	78	"	Lead covered
	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								
	MAIN BILGE LINE PUMPS								
	GENERAL SERVICE PUMP								
	EMERGENCY BILGE PUMP								
	SANITARY PUMP								
	CIRC. SEA WATER PUMPS								
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR Galley	1	0.01046	4	.044	15	170	Rubber	Lead covered
	FRESH WATER PUMP								
	ENGINE TURNING GEAR								
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS								
	OIL FUEL TRANSFER PUMP								
	WINDLASS								
	WINCHES, FORWARD								
	WINCHES, AFT								
	STEERING GEAR								
	WORKSHOP MOTOR	1	0.0396	19	.052	40	192	Rubber	Lead covered
	VENTILATING FANS for Fruit Chambers	2	0.04592	19	.042	60	410	"	"



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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.

Commonwealth Dockyard - Sydney N.S.W. Electrical Engineers.

Date 16th October 1934

R. Farquhar Director

COMPASSES.

Distance between electric generators or motors and standard compass 50'-0" in direct line.

Distance between electric generators or motors and steering compass 40'-0" in direct line

The nearest cables to the compasses are as follows:—

A cable carrying 4 Ampères 10 feet from standard compass 1'-3" feet from steering compass.

A cable carrying 2 Ampères 6 feet from standard compass 4 feet from steering compass.

A cable carrying 10 Ampères 8 feet from standard compass 5 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 all course in the case of the standard compass, and Nil degrees on all course in the case of the steering compass.

THE AUSTRALIAN COMMONWEALTH SHIPPING BOARD

R. Farquhar Director

Builder's Signature.

Date 16th October 1934

Is this installation a duplicate of a previous case Yes If so, state name of vessel T.S.S. "Lindsdale"

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

It is submitted that
this vessel is eligible for
THE RECORD. Elec. light.

C. L. Cantuight
7/10/34

Total Capacity of Generators 120 Kilowatts Two Generators fitted, each of 60 Kilowatts. Each generator capable of carrying full load of ship.

The amount of Fee ... £ 41 : 5 : 0

When applied for,
15/10/1924

Travelling Expenses (if any) £ : 16 : 4

When received,
19/10/24

Total £ 42-1-4

C. L. Cantuight.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

WES. 2 DEC 1924

Assigned

Elec Lt

Im. 3. 2. — Transfer.
(The Surveyors are requested not to write on or below the space for Committee's Minute.)



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