

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

12 FEB 1945

Received at London Office

Date of writing Report... 18<sup>th</sup> Dec 1944 When handed in at Local Office... 19... Port of **MELBOURNE**

No. in Survey held at Melbourne Date, First Survey 10<sup>th</sup> June 1943 Last Survey 4 Dec 1944  
Reg. Book. (Number of Visits... 20...)

on the S.S. "RIVER LODDON" Tons { Gross 119.94  
Net 27.46

Built at Williamstown By whom built Commonwealth Naval Dockyard Yard No. 29 When built 1944

Owners Commonwealth of Australia Port belonging to Melbourne

Electrical Installation fitted by Commonwealth Naval Dockyard Contract No. When fitted 1944

Is vessel fitted for carrying Petroleum in bulk no Is vessel equipped with D.F. yes E.S.D. yes Gy.C. no Sub.Sig. no

Have plans been submitted and approved yes System of Distribution yes wire Voltage of supply for Lighting 220

Heating 220 Power 220 Direct or Alternating Current, Lighting D.C. Power D.C. If Alternating Current state frequency Prime Movers,

has the governing been tested and found efficient when the whole load is suddenly thrown on and off yes Are turbine emergency governors fitted with a

trip switch as per Rule yes Generators, are they compound wound no, are they level compounded under working conditions no,

if not compound wound state distance between generators 3 feet and from switchboard 15 feet Where more than one generator is fitted are they

arranged to run in parallel yes, are shunt field regulators provided yes Is the compound winding connected to the negative or positive pole

yes Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing yes Have certificates of

test for machines under 100 kw. been supplied yes and the results found as per rule yes Are the lubricating arrangements and the construction

of the generators as per rule yes Position of Generators Starboard side of Engine Room

, is the ventilation in way of generators satisfactory yes are they clear of inflammable material yes, if situated

near unprotected combustible material state distance from same horizontally yes and vertically yes, are the generators protected from mechanical

injury and damage from water, steam and oil yes, are the bedplates and frames earthed yes and the prime movers and generators in metallic

contact yes Switchboards, where are main switchboards placed On overhead platform near generators

are they in accessible positions, free from inflammable gases and acid fumes yes, are they protected from mechanical injury and damage from water, steam

and oil yes, if situated near unprotected combustible material state distance from same horizontally yes and vertically yes, what insulation

material is used for the panels MISCALITE, if of synthetic insulating material is it an Approved Type yes, if of

semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule yes Is the frame effectually earthed yes

Is the construction as per Rule yes, including accessibility of parts yes, absence of fuses on the back of the board yes, individual fuses

to pilot and earth lamps, voltmeters, etc., yes locking of screws and nuts yes, labelling of apparatus and fuses yes, fuses on the "dead"

side of switches yes Description of Main Switchgear for each generator and arrangement of equaliser switches 300 amp air circuit

breakers, fitted with time-lag overload protection on both poles. No voltage

and instantaneous reverse current release.

and for each outgoing circuit 200 amp D.P. quick break knife switches and fuse on each pole

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule yes Instruments on main switchboard 3

ammeters 3 voltmeters yes synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the

equaliser connection yes Earth Testing, state means provided Earth lamps



Switches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an approved type Yes, are all fuses labelled as per Rule Yes, are the reversed current protection devices connected on the pole opposite to the equaliser connection Yes, have they been tested under working conditions Yes. Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule Yes. Cables, are they insulated and protected as per the appropriate Tables of the Rules Yes, if otherwise than as per Rule are they of an approved type Yes, state maximum fall of pressure between bus bars and any point under maximum load 4.0 lbs, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets Yes. Are paper insulated and varnished cambric insulated cables sealed at the exposed ends Yes with insulating compound Yes or waterproof insulating tape Yes. Are all the cable runs in accessible positions, not exposed to drip or accumulation of water or oil, high temperatures or risk of mechanical damage Yes, are cables laid under machines or floorplates Yes, if so, are they adequately protected Yes. Are cables in machinery spaces, galleys, laundries, etc., lead covered Yes or run in conduit No. State how the cables are supported and protected Secured by clips to perforated trays, with sheet metal covers in positions where exposed to possible damage. Are all lead sheaths, armouring and conduits effectually bonded and earthed Yes (Domestic). Refrigerated chambers, are the cables and fittings as per Rule Yes. Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands Yes, where unarmoured cables pass through beams, etc., are the holes effectively bushed Yes and with what material Lead. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule Yes. Emergency Supply, state position Engine Room Ceiling (from 24 V. Battery) and method of control Relay (Automatic). Navigation Lamps, are they separately wired Yes controlled by separate double pole switches Yes and fuses Yes. Are the switches and fuses in a position accessible only to the officers on watch Yes, is an automatic indicator fitted Yes. Secondary Batteries, are they constructed and fitted as per Rule Yes, are they adequately ventilated Yes. Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof Yes. Are fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present No except as hereunder: Special W.T. Admiralty fittings in temporary magazine in poop (was Emergency) and where are the controlling switches fitted passageway in poop space, are all fittings suitably ventilated Yes. are all fittings and accessories constructed and installed as per Rule Yes. Searchlight Lamps, No. of 1, whether fixed or portable Yes, are their fittings as per Rule Yes. Heating and Cooking, is the general construction as per Rule Yes. are the frames effectually earthed Yes, are heaters in the accommodation of the convection type Yes. Motors, are all motors constructed and installed as per Rule Yes and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil Yes, if situated near unprotected combustible material state minimum distance from same horizontally Yes and vertically Yes. Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing Yes. Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule Yes. Control Gear and Resistances, are they constructed and fitted as per Rule Yes. Lightning Conductors, where required are they fitted as per Rule Yes. Ships carrying Oil having a Flash Point less than 150° F. Have all the special requirements of the Rules for such ships been complied with Yes, are all fuses of the cartridge type Yes. are they of an approved type Yes. If portable lamps for use in dangerous spaces are supplied, are they of a self-contained battery-fed flameproof type Yes. Spare Gear, if the vessel is for open sea service have spares been provided as per Rule Yes, are they suitably stored in dry situations Yes. Insulation Tests, has the insulation resistance of all circuits and apparatus been megger tested and found satisfactory Yes.

#### PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN (1) ...	2971	35	225 ✓	156 ✓	650 ✓	Reciprocating Steam Engine		
(1) ...	2972	35	225 ✓	156 ✓	650 ✓	"		
(1) ...	677	25	225 ✓	111 ✓	1100 ✓	4 Cyl. Diesel Engine	Light Diesel	215° F
EMERGENCY ...								
ROTARY TRANSFORMER								

#### GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
		No. in Parallel For Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR ...	N°1 ... 35	1	37/083	156	184 ✓	88	RUBBER	LEAD COVERED
" " EQUALISER	N°2 ... 35	1	37/083	156	184 ✓	84	"	"
(Diesel Engine)	N°3 ... 25	1	37/083	111	184 ✓	66	"	"
EMERGENCY GENERATOR ...								
ROTARY TRANSFORMER: MOTOR ...								
" " GENERATOR ...								

#### MAIN DISTRIBUTION CABLES.

AUX. SWITCHBOARDS AND SECTION BOARDS ...									
CIRCUIT	G	1	19/064	82	83 ✓	180	RUBBER	LEAD COVERED	
"	H	1	7/064	22	46 ✓	90	"	"	"
"	J	1	19/064	50	83 ✓	100	"	"	"
"	L	1	7/039	15	15 ✓	110	"	"	"
(SHORE CONNECTION)	K	1	37/083	182	184 ✓	90	"	"	"

#### LIGHTING AND HEATING, ETC., CABLES.

WIRELESS ...	CIRCUIT ... B.	1	7/036	20	24 ✓	400	RUBBER	LEAD COVERED
NAVIGATION LIGHTS ...	" " " A.A.	1	7/036	18.7	24 ✓	450	"	"
LIGHTING AND HEATING ...	" " " A.	1	7/064	19.17	46 ✓	380	"	"
" " " C	1	19/052	52.35	64 ✓	40	"	"	"
" " " D	1	37/083	184	184 ✓	50	"	"	"
" " " E	1	37/083	78	184 ✓	50	"	"	"
" " " F	1	7/044	26	31 ✓	90	"	"	"

#### MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
STOKER MOTORS (2864-5)	2	5	1	7/044	20.5	31 ✓	226	RUBBER
CRANK CRUISER (2878)	1	7.5	1	7/044	30	31 ✓	114	"
REFRIG. COMPRESSOR	2	3	1	7/036	12.5	24 ✓	72	"
" PUMP	2	1	1	3/036	4.5	10 ✓	78	"
LATHE	1	2	1	3/036	8.5	10 ✓	242	"
DRILL	1	0.5	1	3/036	2.2	10 ✓	160	"
SEWAGE PUMP	1	2	1	7/036	12.5	24 ✓	150	"
12" FAN	7	1.5	1	3/036	6.7	10 ✓	210	"
AXIAL FLOW FAN	2	1.5	1	3/036	7	10 ✓	200	"
OIL PURIFIER	1	0.33	1	3/036	1.7	10 ✓	142	"
GALLEY EXHAUST FAN	1	1.5	1	3/036	6.7	10 ✓	60	"
ASH REMOVER	1	2	1	3/036	8.5	10 ✓	80	"
REFRIG. FAN	1	0.166	1	3/036	1.0	10 ✓	140	"
7" FAN	2	0.5	1	3/036	2.2	10 ✓	124	"
5" FAN	1	0.25	1	3/036	1.2	10 ✓	40	"

(Lead covered cables are protected by metal guards at places where liable to sustain mechanical damage.)

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The Electrical Equipment is installed in accordance with the approved plans and the requirements of the Rules.

All Insulated Conductors are guaranteed to have been tested at the maker's works as specified in the Rules.

The foregoing is a correct description.

*W. Lucas*

Electrical Engineers.

Date 19<sup>th</sup> Dec. 1944.

H.M.A. NAVAL DOCKYARD, WILLIAMSTOWN.

COMPASSES.

Minimum distance between <sup>FAN</sup>electric generators or motors and standard compass 25 feet.

Minimum distance between <sup>FAN</sup>electric generators or motors and steering compass 20 feet.

The nearest cables to the compasses are as follows:—

A cable carrying 0.11 Ampères led into feet from standard compass led into feet from steering compass.

A cable carrying 0.18 Ampères 4 feet from standard compass 3 feet from steering compass.

A cable carrying 0.33 Ampères 9 feet from standard compass 7 feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power 1/2.

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted 1/2.

The maximum deviation due to electric currents was found to be 1/2 degrees on 0.0.0. course in the case of the standard compass, and 1/2 degrees on Any course in the case of the steering compass.

*B. C. Mackey*

Engr. Capt.

General Manager H.M.A. Naval Dockyard  
WILLIAMSTOWN

Builder's Signature.

Date 17/12/44

Is this installation a duplicate of a previous case 1/2 If so, state name of vessel RIVER DERWENT ETC.

General Remarks (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.)

This Electrical Installation has been constructed and fitted on board the ship in accordance with the Rules and Approved plans.

The materials and workmanship are good. Insulation resistance tests and trials required by the Rules have been satisfactorily carried out and in our opinion the installation is now eligible for classification with the Society.

*Noted Jan 14. 2. 45*

Total Capacity of Generators 95 Kilowatts.

The amount of Fee ... £ 64 : 0 :  
Travelling Expenses (if any) £ :  
charged on Machy Rpt

When applied for,

.....19.....

When received,

.....19.....

*P. A. McIntyre B. P. Fielden.*

Surveyors to Lloyd's Register of Shipping.

Committee's Minute 16 FEB 1945

Assigned *See F.E. machy. rpt.*