

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office... 7 AUG 1945

Date of writing Report... 23/6/45 When handed in at Local Office... 23/6/45 Port of... SYDNEY, N.S.W.

No. in Survey held at... Whyalla, South Aust. Date, First Survey... 30th Jan./45 Last Survey... 7/7/1945
Reg. Book. (Number of Visits... 30...)

on the... S.S. "RIVER MURRUMBIDGEE" Tons {Gross... 5093
Net... 2846

Built at... Whyalla By whom built... Broken Hill Pty. Co. Ltd. Yard No... When built... 1945

Owners... Commonwealth of Australia Port belonging to... PORT ADELAIDE

Electrical Installation fitted by... Broken Hill Pty. Co. Ltd. Contract No... When fitted... 1945

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... Two 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... Generators, are they compound wound... No, are they level compounded under working conditions... -

if not compound wound state distance between generators... 3 ft. and from switchboard... 15 ft. 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

Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing... 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... Starbd. 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... and vertically... 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... In engine room on platform (starbd. side)

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... and vertically... what insulation

material is used for the panels... "Miscolite" (Sectys. letter E.22/2/43), 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... 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 breaker fitted with time lag overload protection on both poles,

no voltage and time lag reverse current release.

and for each outgoing circuit... 200 amp. D.P. quick break knife switches and D.P. fuses.

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

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

equaliser connection... Earth Testing, state means provided... earth lamps



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See Sectys. letter

Switches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an approved type E22/2/43 are all fuses labelled as per Rule Yes, are the reversed current protection devices connected on the pole opposite to the equaliser connection -, 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 -, state maximum fall of pressure between bus bars and any point under maximum load 4.4V, 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 - with insulating compound - or waterproof insulating tape -. 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 effectually bushed Yes and with what material Lead (Lighting). Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule Yes. Emergency/Supply, state position Engine room casing and method of control Relay. 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 / -, if so, how are they protected -.

Special W.T. Admiralty fittings in space aft. (used as a magazine, War emergency)

and where are the controlling switches fitted in passageway of poop accom. space, are all fittings suitably ventilated Yes, are all fittings and accessories constructed and installed as per Rule Yes. Searchlight Lamps, No. of -, whether fixed or portable -, are their fittings as per Rule -. 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 - and vertically -. Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing -. 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 -, are all fuses of the cartridge type - are they of an approved type -. If portable lamps for use in dangerous spaces are supplied, are they of a self-contained battery-fed flameproof type -. 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. | Ampères. | Revs. per Min. | | Fuel Used. | Flash Point of Fuel. |
| MAIN ... | 1 | 35 | 225 | 156 | 650 | Reciprocating Steam Eng. | | |
| | 1 | 35 | 225 | 156 | 650 | " " | | |
| | 1 | 25 | 225 | 111 | 1100 | 4 Cyl. Diesel Eng. | { Light Dieseloleum 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 Per Pole. | Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm. | In the Circuit. | Rule. | | | |
| MAIN GENERATOR ... No. 1 | 35 | 1 | 37/.083 | 156 | 184 | 100 | Rubber | Lead covered |
| " " " No. 2 | 35 | 1 | 37/.083 | 156 | 184 | 100 | " | cables and |
| (Diesel Driven) No. 3 | 25 | 1 | 37/.083 | 111 | 184 | 84 | " | protected by metal guards at places liable to sustain mechanical damage. |
| EMERGENCY GENERATOR ... | | | | | | | | |
| ROTARY TRANSFORMER: MOTOR | | | | | | | | |
| " " GENERATOR ... | | | | | | | | |

MAIN DISTRIBUTION CABLES.

| AUX. SWITCHBOARDS AND SECTION BOARDS ... | | | | | | | | |
|--|---|---------|----|-----|-----|---|---|---|
| Circuit G. | 1 | 19/.064 | 88 | 83 | 192 | " | " | " |
| H. | 1 | 7/.064 | 22 | 46 | 64 | " | " | " |
| J. | 1 | 19/.064 | 55 | 83 | 46 | " | " | " |
| L. | 1 | 7/.044 | 27 | 31 | 280 | " | " | " |
| Shore Connection K. | 1 | 37/.083 | -- | 184 | 84 | " | " | " |

LIGHTING AND HEATING, ETC., CABLES.

| WIRELESS ... | B. | 1 | 7/.044 | 20 | 31 | 406 | " | " |
|-----------------------|-----------|---|---------|------|-----|-----|---|---|
| NAVIGATION LIGHTS ... | AA | 1 | 7/.036 | 3.3 | 24 | 416 | " | " |
| LIGHTING AND HEATING | | | | | | | | |
| | Circuit A | 1 | 7/.064 | 18 | 46 | 388 | " | " |
| | C | 1 | 19/.052 | 43 | 64 | 60 | " | " |
| | D | 1 | 37/.083 | 220* | 184 | 64 | " | " |
| | E | 1 | 37/.083 | 85 | 184 | 50 | " | " |
| | F | 1 | 7/.044 | 16 | 31 | 80 | " | " |

* Sect 6 Clause (f)

MOTOR CABLES.

| ALL IMPORTANT MOTORS TO BE ENUMERATED. | No. | B.H.P. | | | | | | |
|--|-----|--------|---|--------|------|----|-----|-----|
| Stoker Motor | 2 | 5 | 1 | 7/.044 | 20.5 | 31 | 219 | " " |
| Coal crusher motor | 1 | 7.5 | 1 | 7/.044 | 30.0 | 31 | 158 | " " |
| Refrig. Compr. motor | 2 | 3 | 1 | 7/.036 | 13.0 | 24 | 62 | " " |
| " Pump Motor | 2 | 1 | 1 | 3/.036 | 9.0 | 10 | 68 | " " |
| Lathe motor | 1 | 2 | 1 | 3/.036 | 8.5 | 10 | 226 | " " |
| Drill motor | 1 | .5 | 1 | 1/.044 | 2.8 | 5 | 124 | " " |
| Sanitary pump motor | 1 | 2 | 1 | 7/.029 | 13.0 | 15 | 110 | " " |
| 12" Fan motor | 8 | 1.5 | 1 | 3/.036 | 6.7 | 10 | 192 | " " |
| Axial flow fan motor | 2 | 1.5 | 1 | 3/.036 | 7.0 | 10 | 54 | " " |
| Oil Purifier motor | 1 | .33 | 1 | 1/.044 | 2.0 | 5 | 128 | " " |
| 7 1/2" exhaust fans | 2 | .75 | 1 | 3/.036 | 5.0 | 10 | 170 | " " |
| 5" Fan | 1 | .5 | 1 | 3/.036 | 1.5 | 10 | 50 | " " |
| Meat Room Fan | 1 | .17 | 1 | 1/.044 | 1.0 | 5 | 60 | " " |
| Ash Remover Motor | 1 | 2.0 | 1 | 7/.029 | 9.0 | 15 | 65 | " " |

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.

THE BROKEN HILL PTY. CO. LTD.,
 SHIPBUILDING YARD,
 WHYALLA

Electrical Engineers. Date 25th June 1945

per [Signature]

COMPASSES.

Minimum distance between electric generators or motors and standard compass for wireless 25 ft.

Minimum distance between electric generators or motors and steering compass for wireless 20 ft.

The nearest cables to the compasses are as follows:—

A cable carrying 0.09 Ampères Led into feet from standard compass Led into feet from steering compass.

A cable carrying 0.36 Ampères 4 feet from standard compass feet from steering compass.

A cable carrying 15 Ampères 15 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 Yes

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

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 Every course in the case of the steering compass.

THE BROKEN HILL PTY. CO. LTD.,
 SHIPBUILDING YARD,
 WHYALLA

Builder's Signature. Date 25th June 1945

per [Signature]

Is this installation a duplicate of a previous case Yes If so, state name of vessel "RIVER MURCHISON"

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

The Electrical Installation of this Vessel has been constructed and fitted on board 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 my opinion the installation is now eligible for classification with the Society.

Total Capacity of Generators 95 Kilowatts.

The amount of Fee ... £ 64 : 0 : 0 When applied for, 16/7/1945
 Travelling Expenses (if any) £ : : When received, 19

[Signature]
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI, 24 AUG 1945

Assigned See F.F. machy rpt

2m.10.38.—Transfer. (MADE IN ENGLAND.) (The Surveyors are requested not to write on or below the space for Committee's Minute.)