

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 22 MAR 1945

Date of writing Report 12th Feb 1945 When handed in at Local Office 19 Port of Sydney, N. S. W.

No. in Survey held at Whyalla South Aust Date, First Survey 17th Aug 1944 Last Survey 12th Feb 1945
Reg. Book. (Number of Visits 27)

on the S.S. "RIVER MURCHISON" Tons { Gross 506.2
Net 262.3

Built at Whyalla By whom built Broken Hill Pty Co Ltd Yard No. 7. 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.

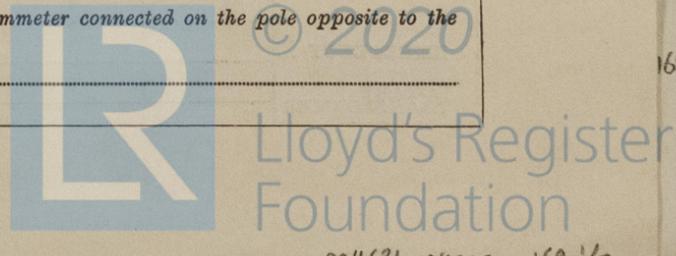
No voltage and time lag reverse current release.

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



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. 4.4 V., 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.

(domestic)
Are all lead sheaths, armoring and conduits effectually bonded and earthed. Yes. 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.	Amps.	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 Diesel oil)	
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 cables
" " EQUALISER No. 2.	35	1	37/.083	156	184	100	"	& protected by
" (Diesel driven) No. 3.	25	1	37/.083	111	184	84	"	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	"	"

* Section 6, Clause 5 (b)

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.

A. Daziel

H.B.T. THE BROKEN HILL PTY. CO. LTD.,
SHIPBUILDING YARD,
WHYALLA.

Electrical Engineers.

Date *13-2-45*

COMPASSES.

Minimum distance between electric generators ^{for wireless} or motors and standard compass *25* ft.

Minimum distance between electric generators ^{for wireless} or motors and steering compass *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.

A. Daziel
H.B.T.

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

Builder's Signature.

Date *13-2-45*

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

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,
		19.....
Travelling Expenses (if any) £	—	:	When received.
		19.....

A. J. Murray
Surveyor to Lloyd's Register of Shipping

Committee's Minute *FRI. 6 APR 1945*

Assigned *See P.E. machy. rph.*

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