

# REPORT ON ELECTRICAL EQUIPMENT

[OTHER THAN FOR THE PROPULSION OF THE VESSEL]

28 JAN 1948

Date of writing Report 1 - 11 - 19 47 When handed in at Local Office 19 Port of NEWCASTLE, N.S.W.  
 Received at London Office  
 No. in Reg. Book Survey held at Newcastle, N.S.W. Date: First Survey 19-7-46 Last Survey 28 - 10 - 19 47  
 (Number of Visits Seventeen)  
 -- on the Single Screw Steamer "DELUNGRA" Tons {Gross 2333  
 Net 1161  
 Built at Newcastle, N.S.W. By whom built State Dockyard Yard No. 26 When built 1947  
 Owners Commonwealth of Australia Port belonging to Newcastle, N.S.W.  
 Electrical Installation fitted by State Dockyard Contract No. -- When fitted 1947  
 Is vessel fitted for carrying Petroleum in bulk No Is vessel equipped with D.F. No E.S.D. Yes Gy.C. No Sub.Sig. Yes

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 Yes, are they level compounded under working conditions Yes

if not compound wound, state distance between generators -- and from switchboard -- 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

Negative 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 Starboard side in 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 starboard side on 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 -- and vertically --, what insulation

material is used for the panels Miscolite., if of synthetic 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 arrangements of equaliser switches 300 amp. triple pole

air circuit breaker fitted with time lag overload protection on each pole, no voltage and

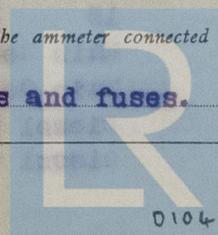
time lag reverse current release.

and for each outgoing circuit 150, 100, 60 & 30 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 Two

ammeters two voltmeters -- 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 and fuses.



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Switches, Circuit Breakers and Fuses, are they as per Rule **Yes**, are the fuses an approved type **Yes, "Artic"** 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 **--**, state maximum fall of pressure between bus bars and any point under maximum load **4.45 volts** 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 where exposed to possible damage.**

Are all lead sheaths, armouring 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 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 **Not fitted.**

and method of control **--**. 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 **Aural & visual.** 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 **--**

and where are the controlling switches fitted **--** are all fittings suitably ventilated **--**. are all fittings and accessories constructed and installed as per Rule **--**. 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 **--**. 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 **No**. are they of an approved type **Yes, Artic**. 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	Amperes	Revs. per Min.		Fuel Used	Flash Point of Fuel
MAIN	1	35	225	156	600	Recip. Steam Engine.	--	--
	1	15	225	68	1000	3. Cyl. Diesel Engine.	Dieseline.	125° F.
EMERGENCY						Main Generator Serial No. E2/45673/3.		
ROTARY TRANSFORMER						Main Generator Engine No. R2/45672/3.		
						Diesel Generator Serial No. E2/54680/5.		
						Diesel Generator Engine No. 3959.		

GENERATOR CABLES.

DESCRIPTION	KILOWATTS	CONDUCTORS		MAXIMUM CURRENT		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	35	1	37/083	156	184	80	Rubber	Lead covered and protected with metal
" " EQUALISER			37/083		184	40	"	guards at places where
" " FIELD.			7/036		24	40	"	likely to sustain damage.
DIESEL GENERATOR NO. 2.	15	1	19/064	68	83	80	"	
" " EQUALISER.			37/083		184	40	"	
" " FIELD.			7/036		24	40	"	
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

MAIN DISTRIBUTION CABLES.

AUX. SWITCHBOARDS AND SECTION BOARDS								
CIRCUIT D	1	19/064	73.73	83	92	Rubber		
CIRCUIT F	1	19/064	43.2	83	242	"		
CIRCUIT H	1	19/064	45.0	83	176	"		
CIRCUIT J	1	7/044	20.5	31	246	"		
CIRCUIT K	1	7/044	20.5	31	142	"		

LIGHTING AND HEATING, ETC., CABLES

WIRELESS								
CIRCUIT C	1	7/044	15.0	31	364	Rubber		
NAVIGATION LIGHTS CIRCUIT A	1	7/036	1.2	24	338	"		
LIGHTING AND HEATING								
CIRCUIT B	1	7/036	11.76	24	338	"		
CIRCUIT E	1	19/064	75.28	83	96	"		
CIRCUIT G	1	19/083	117.0	118	92	"		

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED	No.	B.H.P.						
STOKER MOTOR	1	5	1	7/044	20.5	24	31	246 Rubber
STOKER MOTOR	1	5	1	7/044	20.5	24	142	Rubber
SANITARY PUMP	1	3	1	7/036	12.5	24	20	"
OIL PURIFIER	1	0.33	1	3/036	1.55	10	106	"
ENGINEERS' DRILL	1	0.5	1	3/036	2.6	10	94	"
24" AXIAL FLOW FANS	1	1.1	1	3/036	5.7	10	118	"
12 1/2" FAN, PORT FWD.	1	1.1	1	3/036	5.7	10	60	"
12 1/2" FAN, STBD. FWD.	1	1.1	1	3/036	5.7	10	60	"
12 1/2" FAN, PORT AFT	1	1.1	1	3/036	5.7	10	60	"
12 1/2" FAN, STBD. AFT	1	1.1	1	3/036	5.7	10	60	"
REFRIG. COMP. NO. 1	1	5	1	7/036	20	24	54	"
REFRIG. COMP. NO. 2	1	5	1	7/036	20	24	54	"
BENCH GRINDER	1	1.2	1	3/036	2.4	10	88	"
24" AXIAL FLOW FANS	1	1.1	1	3/036	5.7	10	106	"

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.

*M. P. [Signature]*

Electrical Engineers. Date 4-11-47

STATE DOCKYARD.  
 --N.S.W. Govt. Engineering and  
 Shipbuilding Undertaking--

COMPASSES.

Minimum distance between electric generators or motors and standard compass Clear View Screen 7', W/T Motor Alternator 18'.  
 Minimum distance between electric generators or motors and steering compass Clear View Screen 4.5', W/T Motor Alternator 13'.

The nearest cables to the compasses are as follows:--

A cable carrying 0.09 Amperes led into ~~feet from~~ standard compass led into ~~feet from~~ steering compass.  
 A cable carrying 15 Amperes 6.5 feet from standard compass 5.5 feet from steering compass.  
 A cable carrying 11.76 Amperes 6.5 feet from standard compass 5.5 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 any course in the case of the standard compass, and nil degrees on any course in the case of the steering compass.

*[Signature]*  
 for

STATE DOCKYARD.  
 --N.S.W. Govt. Engineering and  
 Shipbuilding Undertaking--  
 Builder's Signature. Date 4-11-47

Is this installation a duplicate of a previous case Yes If so, state name of vessel "DORRIGO", "DUBBO".

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 the trials required by the Rules have been satisfactorily carried out and, in our opinion, the Installation is now eligible for Classification with the Society.

*Note. See 1/3/48*

Total Capacity of Generators 50 Kilowatts.

The amount of Fee . . . £ 55: 0 : 6/11 1947  
 Travelling Expenses (if any) £ : :  
 When applied for, 19  
 When received, 19

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

Committee's Minute FRI. 5 MAR 1948

Assigned For work see J.E. R.H.

100-9/11-1, A.O.S. - TRANSFER. (PRINTED IN AUSTRALIA)  
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