

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

-3 OCT 1929

Date of writing Report 19.9.29 When handed in at Local Office 1.10.29 Port of GLASGOW.

No. in Survey held at DUMBARTON. Date, First Survey 12.8.29 Last Survey 23.9.29  
Reg. Book. 39235 on the M.V. "ARMADALE"Built at DUMBARTON. By whom built W. DENNY BROS LTD Yard No. 1223 When built 1929  
Owners MESSRS AUSTRALIND. SS. CO. LTD Port belonging to LONDON.

Electric Light Installation fitted by MESSRS W. DENNY BROS LTD Contract No. 1223 When fitted 1929

System of Distribution TWO WIRE SYSTEM

Pressure of supply for Lighting 110 volts, Heating — volts, Power 110 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 rating 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 NO, is an adjustable regulating resistance fitted in series with each shunt field YES

Are all terminals accessible, clearly marked, and furnished with sockets YES, are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched YES

Are the lubricating arrangements of the generators as per Rule YES

Position of Generators BOTTOM PLATFORM IN 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 YES, are the generators protected from mechanical injury and damage from water, steam or oil YES

are their axes 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

Main Switch Boards, where placed BOTTOM PLATFORM IN ENGINE ROOM

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 YES

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 YES and YES

are they constructed wholly of durable, non-ignitable 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 insulated from the slab

with mica or micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework YES

and is the frame effectively earthed YES. Are the fittings as per Rule regarding:— spacing or shielding of live parts

YES, accessibility of all parts YES, absence of fuses on back of board YES, proportion of omnibus

bars YES, individual fuses to voltmeter, pilot or earth lamp YES, connections of switches YES

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

FOR GENERATORS:— 100 AMP D.P. SWITCHES AND FUSES FOR POWER:— 100 AMP S.P.C. SWITCHES AND D.P. FUSES. FOR ILLUMINATION:— 50 AMP S.P. SWITCHES AND D.P. FUSES.

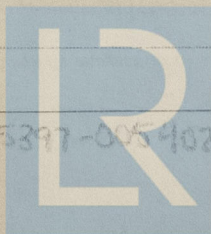
Instruments on main switchboard TWO ammeters TWO voltmeters — synchronising device for paralleling purposes.

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

EARTH LAMPS AND SWITCHES

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules YES

Joint Boxes Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule YES.



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Cables: Single, twin, concentric, or multicore SINGLE are the cables insulated and protected as per Tables IV or V of the Rules YES

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 3.3 VOLTS

Cable Sockets and other connections, are the ends of all cables having a sectional area of 0.04 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 conductors protected from moisture by being suitably sealed with insulating compound YES

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 BRASS SPOLES AND SCREWS  
PROTECTED BY SHEET IRON WHERE NECESSARY

If cables are run in wood casings, are the casings and caps secured by screws YES, are the cap screws of brass YES, are the cables run in separate grooves YES. If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VIII 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

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 Partitions, 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 YES

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 NONE

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

Secondary Batteries, are they constructed and fitted as per Rule 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 NONE, are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected NONE, how are the cables led YES

where are the controlling switches situated YES

Searchlight Lamps, No. of 2, whether fixed or portable YES, are their fittings as per Rule YES

Are Lamps, other than searchlight lamps, No. of 2, are their live parts insulated from the frame or case YES, are their fittings as per Rule YES

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 the axes of rotation for and against YES, 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 YES, if not of this type, state distance of the combustible material horizontally or vertically above the motors YES and YES

Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed and fitted 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 YES

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.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.	
MAIN	2	10	110	92	500	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. Amps.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR	2	.076	19	.012	92	40	RUBBER	LEAD COVERED
	EQUALISER CONNECTIONS								
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS								
E	ENGINE ROOM	2	.0045	7	.029	11	30	RUBBER	LEAD. ARM. + BRAIDED
E	BOILER ROOM	2	.0045	4	.029	11	300	RUBBER	LEAD. ARM. + BRAIDED
	ACCOMMODATION								
H	DOME - SHELTER DECK	2	.0145	7	.052	29	300	RUBBER	LEAD COVERED
B	ENGINEERS ACCOM. ETC.	2	.0145	4	.052	30	140	RUBBER	LEAD COVERED
F	ENGINE RM MOTORS	2	.075	19	.072	61	120	RUBBER	LEAD. ARM. + BRAIDED
D	WIRELESS	2	.0145	7	.052	15	290	RUBBER	LEAD COVERED
	SEARCHLIGHT								
	MASTHEAD LIGHT	2	.002	3	.029	35	250	RUBBER	LEAD COVERED
	SIDE LIGHTS	2	.002	3	.029	35	50	RUBBER	LEAD COVERED
	COMPASS LIGHTS	2	.002	3	.029	23	40	RUBBER	LEAD COVERED
	POOP LIGHTS	2	.010	7	.044	140	200	RUBBER	LEAD COVERED
C	CARGO LIGHTS	2	.010	7	.044	22.8	96	RUBBER	LEAD COVERED
	ARC LAMPS								
	HEATERS								

MOTOR CONDUCTORS.									
Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amps.	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								
	FRESH WATER PUMP								
	ENGINE TURNING GEAR								
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS								
	OIL FUEL TRANSFER PUMP								
	WINDLASS								
	WINCHES, FORWARD								
	WINCHES, AFT								
	STEERING GEAR								
	(a) MOTOR GENERATOR								
	(b) MAIN MOTOR								
	WORKSHOP MOTOR								
	VENTILATING FANS								
1F	OIL PURIFIER	1	.007	4	.036	21	150	RUBBER	LEAD. ARM. + BRAIDED
2F	OIL PURIFIER	1	.007	4	.036	21	150	RUBBER	" " "
3F	GRINDER	1	.007	4	.036	17	25	RUBBER	" " "
4F	LATHA	1	.007	4	.036	13	40	RUBBER	" " "
5F	DRILLING MACHINE	1	.007	4	.036	9	40	RUBBER	" " "



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.

*Wm Denny & Bros Ltd Dumbarton* Electrical Engineers. Date *27-9-29*

#### COMPASSES.

Distance between electric generators or motors and standard compass *30 ft*

Distance between electric generators or motors and steering compass *96 ft*

The nearest cables to the compasses are as follows:—

A cable carrying *25* Amperes *1* feet from standard compass *24* feet from steering compass.

A cable carrying *25* Amperes *1* feet from standard compass *24* feet from steering compass.

A cable carrying *08* Amperes *08* feet from standard compass *08* 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 *Nil* course in the case of the standard compass, and *Nil* degrees on *Nil* course in the case of the steering compass.

For WILLIAM DENNY & BROTHERS Limited.

*William Denny*

Builder's Signature. Director.

Date *27/9/29*

Is this installation a duplicate of a previous case *Yes* If so, state name of vessel *H.V. Australia*

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

*This installation has been fitted on board under special survey tested under full working conditions and found satisfactory. The materials and workmanship were found to be good and sound.*

*Lee Light*

*27/10/29*

Total Capacity of Generators *20* Kilowatts.

The amount of Fee ... £ *17.00* : *2* **OCT 1929**

Travelling Expenses (if any) £ : : *11.10.29*

Committee's Minute

Assigned

GLASGOW

*2* **OCT 1929**

*J. S. Rankin*  
Surveyor to Lloyd's Register of Shipping.



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