

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) -1 MAY 1929

Received at London Office

Date of writing Report 12.4.29 When handed in at Local Office 29.4.29 Port of GLASGOW.

No. in Survey held at GLASGOW.
Reg. Book.Date, First Survey 29.11.28 Last Survey 16.4.1929
(Number of Visits 14)

91108 on the M.V. MANUNDA.

Tons { Gross
Net

Built at DALMUIR. By whom built W. BEARDMORE & CO Yard No. 661 When built 1929.

Owners THE ADALIDE S.S. CO. LTD Port belonging to MELBOURNE

Electric Light Installation fitted by MESSRS W. BEARDMORE & CO. LTD Contract No. 651 When fitted 1929

System of Distribution **TWO WIRE**

Pressure of supply for Lighting **110 Volts** volts, Heating **220 V** volts, Power **220 V** volts.

Direct or Alternating Current, Lighting **DIRECT** Power **DIRECT.**

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 overload. **YES**, are they compound wound. **YES**
are they over compounded 5 per cent. - , if not compound wound state distance between each generator. -

Where more than one generator is fitted are they arranged to run in parallel. **YES**, is an adjustable regulating resistance fitted in series with each shunt field. **YES**

Are all terminals accessible and clearly marked. **YES**, are they so spaced or shielded that they cannot be accidentally earthed, or short circuited. **YES** Are the lubricating arrangements of the generators as per Rule

Position of Generators **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 - are the generators protected from mechanical injury and damage from water, steam or oil
are their axis of rotation fore and aft. **YES**

Earthing, are the bodplates 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 **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

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 - and -
are they constructed wholly of durable, incombustible 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 connected to one pole insulated from the slab with mica or micaite and the slab similarly insulated from its framework. - , and is the frame effectively earthed. **YES**

Are the following fittings as per Rule, viz.: - spacing or shielding of live parts
YES, accessibility of all parts **YES**, absence of fuses on back of board **YES**, proportion of omnibus bars
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
**D.P. CIRCUIT BREAKER HAVING TWO OVERLOAD TRIP COILS WITH TIME LAGS
REVERSE CURRENT TRIP & INTERLOCKED EQUALIZING SWITCH.**

Instruments on main switchboard **12** ammeters **5** voltmeters synchronizing 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

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

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

Insulation of Cables, state type of cables, single ~~twisted~~ are the cables insulated and protected as per Tables III or IV of the Rules **YES**
Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load **5 Volt. (110v.) 9v. (220v.)**
Cable Sockets and other connections, are the ends of all cables having a sectional area of 0.007 square inch and above provided with soldering sockets
Paper Insulated Cables, If cables are paper covered, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound
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 surfaces, or to avoidable risk of mechanical damage **YES**
Support and Protection of Cables, state how the cables are supported and protected **ON METAL TRAYS & CLIPS**
 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 VI **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 **CONNECTION BOXES.**
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 Positions, 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
 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 **EMERGENCY SUPPLY FROM PETROL-PARAFFIN GENERATOR FITTED IN EMERGENCY COMPT. BOAT DECK.**
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**, are separate screens provided for the use of oil and electric side lights **YES**, are separate oil lanterns provided for the mast head lights and side lights **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 **YES**, are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected **YES**, how are the cables led
 where are the controlling switches situated
Searchlight Lamps, No. of **1**, are their fittings as per Rule **YES**
Arc Lamps, other than searchlight lamps, No. of **0**, 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 their axis of rotation fore and aft **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 **12"** and **12"**
Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed 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 ...	5	220	220	1090	300	DIESEL ENGINE	DIESEL OIL	OVER 150°F.
AUXILIARY ...								
EMERGENCY ...	1	50	220	227	800	PETROL-PARAFFIN ENGINE		
ROTARY TRANSFORMER	3	70	220 110	435 635	1100			

LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors	Effective Area of each Conductor, Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current, Amperes.	Approximate Length, (Load and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR...	4	.85	127	.093	1090	150	V.I.R.	L.C.
	AUXILIARY GENERATOR	1	.85	127	.093	545	75	"	"
	EMERGENCY GENERATOR	2	.3	37	.103	227	30	"	"
	ROTARY TRANSFORMER...	2	.85	127	.093	435	60	"	"
	AUXILIARY SWITCHBOARDS	2	.85	91	.103	1000	510	"	"
	ENGINE ROOM	2	.6	91	.093			"	"
	BOILER ROOM	4	.85	127	.093	1000	375	"	"
	"	2	.6	91	.093	800	270	"	"
	"	2	.5	61	.103			"	"
	WIRELESS	2	.01	7	.044	16	600	VIR	LC
	SEARCHLIGHT	2	.1	19	.083	60	840	"	"
	MASTHEAD LIGHT...	2	.003	3	.036	.4	50	"	TUBING ON MAST
	SIDE LIGHTS	2	.002	3	.029	.4	70	"	LC
	COMPASS LIGHTS	2	.002	3	.029	.3	30	"	"
	POOP LIGHTS							"	"
	CARGO LIGHTS	2	.002	3	.029	1.5	120	"	"
	ARC LAMPS							"	"
	HEATERS	2	.003	3	.036	9	90	"	"

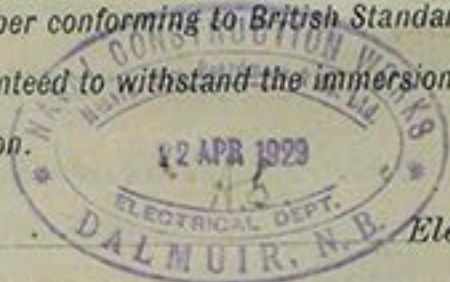
MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor, Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current, Amperes.	Approximate Length, (Load and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP		.15	37	.072	140	215	VIR	LC
	MAIN BILGE LINE PUMPS							"	"
	GENERAL SERVICE PUMP		.06	19	.064	60	180	"	"
	EMERGENCY BILGE PUMP		.06	19	.064	60	180	"	"
	SANITARY PUMP		.06	19	.064	60	320	"	"
	CIRC. SEA WATER PUMPS		.0225	7	.064	44	120	"	"
	CIRC. FRESH WATER PUMPS		.003	3	.036	8	120	"	"
	AIR COMPRESSOR		.5	61	.103	710	160	"	"
	FRESH WATER PUMP		.0145	7	.052	32	210	"	"
	ENGINE TURNING GEAR		.06	19	.064	80	260	"	"
	ENGINE REVERSING GEAR							"	"
	LUBRICATING OIL PUMPS		.15	37	.072	120	375	"	"
	OIL FUEL TRANSFER PUMP		.04	19	.052	52	160	"	"
	WINDLASS		.3	37	.103	223	150	"	"
	WINCHES, FORWARD 3 TON		.1	19	.083	108	140	"	"
	WINCHES, AFT 5 TON		.12	37	.064	136	140	"	"
	STEERING GEAR		.2	37	.083	160	720	"	"
	WORKSHOP MOTOR		.003	3	.036	8	30	"	"
	VENTILATING FANS		.003	3	.036	10	120	"	"
	30" ER. "		.0225	7	.064	44	150	"	"
	20" ER. "		.007	7	.036	24	150	"	"
	BLOWERS		.5	61	.103	305	240	"	"
	COOLING WATER PUMP		.3	37	.103	240	250	"	"
	CO ₂ MACHINES		.06	19	.064	80	60	"	"
	BRINE PUMP		.0045	7	.029	17	60	"	"
	WATER "		.003	3	.036	10	60	"	"
	WARPING WINCH		.12	37	.064	136	320	"	"

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.



Electrical Engineers.

Date

COMPASSES.

Distance between electric generators or motors and standard compass

EMERGENCY GENERATOR 288 FT.

MAIN

"

112 FT.

MOTOR 15 FT.

Distance between electric generators or motors and steering compass

EMERGENCY

"

283 FT.

12 "

MAIN

"

109 FT.

The nearest cables to the compasses are as follows:—

A cable carrying 24 Amperes 9 feet from standard compass 6 feet from steering compass.

A cable carrying 20 Amperes 12 feet from standard compass 9 feet from steering compass.

A cable carrying 108 Amperes 35 feet from standard compass 32 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 NIL course in the case of the standard

compass, and NIL degrees on STEERING course in the case of the steering compass.

FOR WILLIAM BEARDMORE & CO. LIMITED.

Builder's Signature.

Date 22/4/29

Is this installation a duplicate of a previous case No If so, state name of vessel

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

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.

It is submitted that this vessel is eligible for THE RECORD.

Ele Light

Thur

6.5.29

Total Capacity of Generators 1150 Kilowatts

The amount of Fee

605.0

When applied for 19 APR 1929

Travelling Expenses (if any) £

When received.

Committee's Minute

GLASGOW 30 APR 1929

Assigned

Ele Light

CD