

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 25 OCT 1927

Date of writing Report 11th October 1927 When handed in at Local Office 24th October '27 Port of Barrow in Furness

No. in Survey held at Barrow Date, First Survey 2nd November 1926 Last Survey 6th April 1927
Reg. Book. (Number of Visits 11)

29421 on the Single screw motorship "Modavia" Tons { Gross 4558
Net 2859

Built at Barrow By whom built Bickers Ltd. Yard No. 626 When built

Owners Donaldson Lines Ltd. Port belonging to Glasgow

Electric Light Installation fitted by Bickers Ltd. Contract No. 626 When fitted 1924

System of Distribution Two wire looping in direct current.

Pressure of supply for Lighting 110 volts, Heating ✓ 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 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 No, 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 Yes

Position of Generators On Platform at Aft end of 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 Yes

are their axis 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 Adjacent to Generators

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 Enamelled Slate, is all insulation of high dielectric strength and of permanently high insulation resistance ✓, if semi-insulating material is used, are all conducting parts connected to one pole

insulated from the slab with mica or micanite and the slab similarly insulated from its framework All live parts insulated from Slab, 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 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 In each generator a fuse on each pole and a DP linked switch. In each outgoing circuit a fuse on each pole and a DP change over switch on one pole. All change over switches being on the same pole.

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 Two earth lamps, Two fuses and two tumbler switches fitted on switchboard for each generator

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



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Foundation
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Insulation of Cables, state type of cables, single or twin *Single* 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 *5.3 V*

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 *None fitted*

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 *LC and LC+ cables supported by metal clips*

In Engine Room, cables supported on perforated slating and secured by metal clips

If cables are run in wood casings, are the casings and caps secured by screws *No Casings*, are the cap screws of brass , are the cables run in separate grooves . 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 *No fixed lights*

Joints in Cables, state if any, and how made, insulated, and protected *None*

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands

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

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*, 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

"Cattle" fittings with lugged cast iron covers

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected

how are the cables led

where are the controlling switches situated

Searchlight Lamps, No. of *None*, whether fixed or portable , are their fittings as per Rule

Arc Lamps, other than searchlight lamps, No. of *None*, are their live parts insulated from the frame or case , are their fittings as per Rule

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 and

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 *Steel masts*

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

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office

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	<i>One</i>	<i>20</i>	<i>110</i>	<i>182</i>	<i>500</i>	<i>hot Compound (sepf. H.M. Eng.)</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
AUXILIARY	<i>One</i>	<i>12 1/2</i>	<i>110</i>	<i>114</i>	<i>500</i>	<i>" Single "</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
<i>1</i>	MAIN GENERATOR...	<i>1 per pole</i>	<i>.2</i>	<i>37</i>	<i>.073</i>	<i>18.2</i>	<i>40</i>	<i>V.I.R.</i>	<i>LC & A.</i>
<i>2</i>	AUXILIARY GENERATOR	<i>"</i>	<i>.12</i>	<i>37</i>	<i>.064</i>	<i>114</i>	<i>40</i>	<i>"</i>	<i>"</i>
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER...								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM	<i>1 per pole</i>	<i>.07</i>	<i>4</i>	<i>.0744</i>	<i>30</i>	<i>60</i>	<i>V.I.R.</i>	<i>LC & A.</i>
	BOILER ROOM								
	Navigation Circuit & Bridge	<i>1 per pole</i>	<i>.0045</i>	<i>4</i>	<i>.029</i>	<i>9.4</i>	<i>240</i>	<i>"</i>	<i>LC & A. and H.A.R.A.</i>
	Accommodation Accommodations	<i>"</i>	<i>.0225</i>	<i>4</i>	<i>.064</i>	<i>34.0</i>	<i>145</i>	<i>"</i>	<i>" " "</i>
	Cargo Boxes & Lifter etc. etc.	<i>"</i>	<i>.01</i>	<i>4</i>	<i>.0744</i>	<i>26.0</i>	<i>365</i>	<i>"</i>	<i>" " "</i>
	" " " " Aft	<i>"</i>	<i>.01</i>	<i>4</i>	<i>.0744</i>	<i>24.4</i>	<i>250</i>	<i>"</i>	<i>" " "</i>
	Cattle Decks	<i>"</i>	<i>.0045</i>	<i>4</i>	<i>.029</i>	<i>4.0</i>	<i>362</i>	<i>"</i>	<i>" " "</i>
	Hold Vent Fans	<i>"</i>	<i>.0045</i>	<i>4</i>	<i>.029</i>	<i>4.6</i>	<i>275</i>	<i>"</i>	<i>" " "</i>
	Oil Separator Motors	<i>"</i>	<i>.01</i>	<i>4</i>	<i>.0744</i>	<i>35.6</i>	<i>80</i>	<i>"</i>	<i>LC & A.</i>
	WIRELESS	<i>1 per pole</i>	<i>.004</i>	<i>4</i>	<i>.026</i>	<i>18</i>	<i>250</i>	<i>V.I.R.</i>	<i>LC & A. and H.A.R.A.</i>
	SEARCHLIGHT								
	MASTHEAD LIGHT	<i>"</i>	<i>.002</i>	<i>3</i>	<i>.029</i>	<i>.574</i>	<i>370</i>	<i>"</i>	<i>" " "</i>
	SIDE LIGHTS	<i>"</i>	<i>.002</i>	<i>3</i>	<i>.029</i>	<i>.574</i>	<i>44</i>	<i>"</i>	<i>LC & A.</i>
	COMPASS LIGHTS	<i>"</i>	<i>.002</i>	<i>3</i>	<i>.029</i>	<i>.2</i>	<i>32</i>	<i>"</i>	<i>" " "</i>
	POOP LIGHTS								
	CARGO LIGHTS								
	ARC LAMPS								
	HEATERS								

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	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	<i>One</i>	<i>.045</i>	<i>19</i>	<i>.042</i>	<i>49/118</i>	<i>110</i>	<i>V.I.R.</i>	<i>LC & A.</i>
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS								
	OIL FUEL TRANSFER PUMP								
	WINDLASS								
	WINCHES, FORWARD								
	WINCHES, AFT								
	STEERING GEAR								
	WORKSHOP MOTOR								
	VENTILATING FANS	<i>Two</i>	<i>.0225</i>	<i>7</i>	<i>.064</i>	<i>140.0</i>	<i>320</i>	<i>V.I.R.</i>	<i>LC & A.</i>
	Oil Separator Motors	<i>Two</i>	<i>.0045</i>	<i>7</i>	<i>.029</i>	<i>14.8</i>	<i>35</i>	<i>"</i>	<i>LC & A.</i>
	Hold Vent Fans	<i>One</i>	<i>.002</i>	<i>3</i>	<i>.029</i>	<i>1.275</i>	<i>50</i>	<i>"</i>	<i>H.A.R.A.</i>

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.

J. Seymour for *Vickers* Electrical Engineers. Date *12/27*

COMPASSES.

Distance between electric generators or motors and standard compass *Generators are approximately 80 ft. Compass 40 ft. from 1st Generator*

Distance between electric generators or motors and steering compass " " " *85 ft. 26 ft. " "*

The nearest cables to the compasses are as follows:—

A cable carrying *9.4* Ampères *4* feet from standard compass *6* feet from steering compass.

A cable carrying *18* Ampères *18* feet from standard compass *26* feet from steering compass.

A cable carrying *0.8* Ampères *-* feet from standard compass *3* 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 *all* course in the case of the standard compass, and *nil* degrees on *all* course in the case of the steering compass.

For **VICKERS Limited.**

S. H. Jones
 DIRECTOR.

Builder's Signature. Date

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, &c. *This electric light and power installation has been efficiently fitted on board and proved satisfactory under working conditions. In my opinion the vessel is eligible to have the notation of Electric light made in the Register Books*)

It is submitted that this vessel is eligible for THE RECORD. *Acc. Light.*

S.H.
25/10/27.

Total Capacity of Generators *32 1/2* Kilowatts

The amount of Fee ... £ *23 : 2-6* :
 Travelling Expenses (if any) £ *✓* :
 When applied for, *26 April 1927*
 When received, *2nd May 1927*

W. Cousins
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned *Acc light*

Im. 9.24.—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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