

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

MAR -6 1939

Date of writing Report 19 When handed in at Local Office 4/31/39 Port of Newcastle-on-Tyne  
 No. in Survey held at Newcastle Date, First Survey 25 Oct/38 Last Survey 16 Feb 1939  
 Reg. Book. M.V. "DARONIA" (Number of Visits 12)  
 on the M.V. "DARONIA" Tons { Gross 8139  
 Net 4840  
 Built at Newcastle By whom built N. Leslie & Co. Ltd. Yard No. 617 When built 1939  
 Owners Anglo Saxon Pet. Co. Ltd. Port belonging to Anglo Saxon Pet. Co. Ltd.  
 Electric Light Installation fitted by N. Leslie & Co. Ltd. Contract No. 617 When fitted 1939  
 Is the Vessel fitted for carrying Petroleum in bulk Yes.

System of Distribution Double wire volts, Heating 110 volts, Power 110 volts.

Pressure of supply for Lighting 110 Direct Power Direct

Direct or Alternating Current, Lighting

If alternating current system, state frequency of periods per second Yes.

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 temperature rise 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. Have certificates of test results for machines under 100 kw. been submitted and approved Yes.

Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing Yes.  
 Have certificates for generators under 100 kw. been supplied and approved 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.

Position of Generators Engine room starboard side Are the lubricating arrangements of the generators as per Rule Yes., 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 Engine room starboard side

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, non-ignitable non-absorbent materials Yes.

is all insulation of high dielectric strength and of permanently high insulation resistance Yes.  
 is it of an approved type 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., is the non-hygroscopic insulating material of an approved type 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., temperature rise of omnibus bars Yes., individual fuses to voltmeter, pilot or earth lamp Yes., are moving parts of switches alive in the "off" position no are all screws and nuts securing connections effectively locked Yes. are any fuses fitted on the live side of switches no

Main Switchgear, description of switchgear for each generator and each outgoing circuit D.P. S + D.P. fuses on dynamo + all outgoing circuits

Are turbine driven generators fitted with emergency trip switch as per rule — Are cupboards or compartments containing switchboards composed of fire-resisting material or lined with approved material — Instruments on main switchboard 2 ammeters 2

voltmeters — synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection —

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system E lamps coupled to E through switches + fuses Switches, Circuit Breakers and Fusible Cut-outs, Yes. have the reversed —

do these comply with the requirements of the Rules Yes. are the fusible cutouts of an approved type Yes.

5 Test Certificate

ENCLOSURE



current protection devices been tested under working conditions \_\_\_\_\_ are all fuses labelled as per rule Yes

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

**Cables:** Single, twin, concentric, or multicore single are the cables insulated and protected as per Tables IV, V, X, XI, XII or XIII of the Rules Yes

If the cables are insulated otherwise than as per Rule, are they of an approved type \_\_\_\_\_ **Fall of Pressure,** state maximum between bus bars and any point of the installation under maximum load 4.5V lighting, 6V Power

area of 0.04 square inch and above provided with soldering sockets Yes **Cable Sockets,** are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets Yes

If conductors are paper or varnished cambric insulated, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound \_\_\_\_\_, or waterproof insulating tape \_\_\_\_\_ **Cable Runs,** are the cables fixed as far as possible in accessible position 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 are cables laid under machines or floorplates No if so, are they adequately protected \_\_\_\_\_

Are cables in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered or run in conduit Lead covered

**Support and Protection of Cables,** state how the cables are supported and protected C+A in pipe along gangway + in machinery spaces. LC in access

If cables are run in wood casings, are the casings and caps secured by screws \_\_\_\_\_, 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 VIII Yes

**Refrigerated Chambers,** are the cables and fittings in accordance with the special requirements \_\_\_\_\_

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

**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 \_\_\_\_\_ 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 \_\_\_\_\_

**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 \_\_\_\_\_ are they ventilated as per Rule \_\_\_\_\_

**Fittings,** are all fittings on weather decks, in storerooms 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 No

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 outside pump rooms how are the cables led in galvanised iron pipes

where are the controlling switches situated in bridge deckhouse

are all fittings suitably ventilated Yes are all switches and lampholders constructed wholly of non-ignitable, non-absorbent materials Yes

**Heating and Cooking Appliances,** are they constructed and fitted as per Rule \_\_\_\_\_ are air heaters constructed and fitted as per Rule \_\_\_\_\_

**Searchlight Lamps, No. of Circuits only** whether fixed or portable \_\_\_\_\_, 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 axes 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 \_\_\_\_\_ if not of this type, state distance of the combustible material horizontally or vertically above the motors \_\_\_\_\_ and \_\_\_\_\_

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing \_\_\_\_\_ have certificates for all motors for essential services been supplied and approved \_\_\_\_\_

**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 \_\_\_\_\_

**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 are all fuses of the fitted cartridge type Yes are they of an approved type Yes

If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed flameproof type approved for use in dangerous spaces \_\_\_\_\_

**Spare Gear,** if the vessel is for open sea service have spares been supplied as per Rule Yes are they suitably stored in dry situations 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	20	110	182		Steam, 1 Oil driven			
AUXILIARY									
EMERGENCY									
ROTARY TRANSFORMER									

  

GENERATOR, LIGHTING AND HEATING CONDUCTORS.									
DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	Circuit.	Rule.			
MAIN GENERATOR	1	2	37	.093	182	184	48	V.I.R	LC+A
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER MOTOR GENERATOR									
ENGINE ROOM	1	.04	19	.052	46.4	64	75	50	50
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
ACCOMMODATION	1	.12	37	.064	79	130	600	50	LC+B in pipe
" Crew	1	.0225	7	.064	28.5	46	170	50	LC+A
" poop deck	1	.0225	7	.064	22.9	46	200	50	50
" Navigators	1	.01	7	.044	2.9	31	730	50	LC+A in pipe
WIRELESS	1	.0225	7	.064	15	46	700	50	50
SEARCHLIGHT	1	.04	19	.052	60	64	1300	50	50
MASTHEAD LIGHT	1	.002	3	.029	.4	7.8	300	50	50
SIDE LIGHTS	1	.002	3	.029	.4	7.8	60	50	LC
COMPASS LIGHTS	1	.002	3	.029	.2	7.8	20	50	LC
DECK LIGHTS	1	.002	3	.029	.4	7.8	650	50	LC+A in pipe
CARGO LIGHTS	1	.04	19	.052	23.2	64	180	50	LC+A
HEATERS									

  

MOTOR CONDUCTORS.									
DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet.	Insulated with
		No. Per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.		
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	1	1	.06	19	.064	60	83	210	V.I.R LC+A
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 Lathe	1	1	.0045	7	.029	12	182	54	50 LC+A
VENTILATING FANS	1	1	.0225	7	.064	32	46	165	50 50
	1	1	.0225	7	.064	38	46	570	50 LC+A in pipe
Lub Oil Purifier	1	1	.0045	7	.029	16	182	120	50 LC+A
Drill	1	1	.0045	7	.029	16	182	45	50 50
Grinder	1	1	.01	7	.044	24	31	45	50 50
Fuel Oil pump	1	1	.0045	7	.029	14	182	138	50 50



The Electrical Equipment is installed in accordance with the approved plans.

All Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

FOR R. & W. HAWTHORN, LESLIE & Co. LIMITED.

Electrical Engineers.

Date 24th February 1939.

#### COMPASSES.

Minimum distance between electric generators or motors and standard compass 65 feet

Minimum distance between electric generators or motors and steering compass 58 feet.

The nearest cables to the compasses are as follows:—

A cable carrying 2 Ampères on the feet from standard compass 10 feet from steering compass.

A cable carrying 2 Ampères 10 feet from standard compass on the feet from steering compass.

A cable carrying Ampères feet from standard compass feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power Yes *to be completed after adjustment of compasses.*

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 R. & W. HAWTHORN, LESLIE & Co. LIMITED.

Builder's Signature.

Date 24th February, 1939.

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. The above inst<sup>n</sup> has been fitted out under special survey. The workmanship & materials used were good. The insulation resistance was good. The dynamo, governors, main board, fuses, cables & fittings were each tested under working conditions & found satisfactory. This vessel is eligible in my opinion for notation. D.F., E.B.D.

W. T. Badger  
6/3/39

Total Capacity of Generators 40 Kilowatts.

The amount of Fee ... £ 25 : —

When applied for,

22 MAR 1939

Travelling Expenses (if any) £ :

When received.

6 3 19 39 1/3

W. T. Badger  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE 7 MAR 1939

Assigned

See FE machy rpt



© 2020

Lloyd's Register  
Foundation