

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

No. 92792

10 AUG 1935

Date of writing Report

19

When handed in at Local Office

9/8/35

Port of

Newcastle-on-Tyne

Survey held at

Date, First Survey

4 March

Last Survey

19 July 1935

Reg. Book.

on the

S.S. "DUMFRIES."

(Number of Visits 7)

Tons

Gross

Net

built at

Hebburn.

By whom built

Hawthorn Leslie & Co. Ltd.

Yard No. 595

When built 1935

owners

B. J. Sutherland & Co. Ltd.

Port belonging to

Electric Light Installation fitted by

Hawthorn, Leslie & Co. Ltd.

Contract No. 595

When fitted 1935

the Vessel fitted for carrying Petroleum in bulk

System of Distribution Double Wire

Pressure of supply for Lighting

110

volts, Heating

volts, Power

110

volts.

Direct or Alternating Current, Lighting

Direct

Power

Direct

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 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

, 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

proved

yes

Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing

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

Engine Room Starboard Side

, is the ventilation

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 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

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

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

main bus 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, and arrangement of equalizer switches

Double Pole Switch and Fuses for Generator, Single Pole Switches and Double Pole Fuses for each Outgoing Circuit.

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

1

ammeter

1

voltmeter

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

Earth lamps coupled to Earth through fuses.

Switches, Circuit Breakers and Fusible Cut-outs,

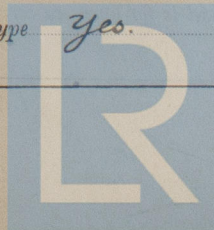
do these comply with the requirements of the Rules

yes

are the fusible cutouts of an approved type

yes

Have the reversed



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current protection devices been tested under working conditions 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 or XI 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 3 volts. Cable Sockets, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets yes. Paper Insulated and Varnished Cambric Insulated Cables.

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

Support and Protection of Cables, state how the cables are supported and protected Run in galvanised iron pipe in holds, Brass clips + screws for lead covered cables in Accommodation, Galvanised iron clips + brass screws for lead covered + armoured cables in Engine + Boiler Rooms. 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 —.

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 —.

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected No.

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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	1	12 1/2	110	114	375	Steam Engine.		
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	0.1000	19	.083	103.6	118		V. I. R.	Lead covered + armoured.
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER									
ENGINE ROOM	1	0.0045	7	.029	15	18.2	50	V. I. R.	Lead covered + Armoured.
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
ACCOMMODATION	1	0.0225	7	.064	26	46	140	V. I. R.	Galvanised iron pipe.
"	1	0.0225	7	.064	25.6	46	399	"	" " "
WIRELESS	1	0.0100	7	.044	16	31	480	"	" " "
SEARCHLIGHT	1	0.0020	3	.029	37	7.8	360	"	Lead covered + V. I. R. in galvanised iron pipe.
MASTHEAD LIGHT	1	0.0020	3	.029	37	7.8	60	"	Lead covered.
SIDE LIGHTS	1	0.0020	3	.029	14	7.8	20	"	" "
COMPASS LIGHTS	1	0.0020	3	.029	14	7.8	20	"	" "
POOP LIGHTS	1	0.0020	3	.029	14	7.8	20	"	" "
CARGO LIGHTS	1	0.0020	3	.036	2.7	12.0	40	"	Galvanised iron pipe.
ARC LAMPS									
HEATERS									

MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	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.	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										
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										
Refrigerating Compressor Motor	1	1	0.0145	7	.052	21	37	390	V. I. R.	Galvanised iron pipe.
" Water Pump Motor	1	1	0.0145	7	.052	7.5	37	390	"	" " "

All Conductors are of annealed copper conforming to British Standard Specification No. 7 (or International Electro-technical Commission Publication No. 28).

The 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,

R. W. Hawthorn

Electrical Engineers.

Date 8/8/35

COMPASSES.

Distance between electric generators or motors and standard compass 40 feet

Distance between electric generators or motors and steering compass 35 feet

The nearest cables to the compasses are as follows:—

A cable carrying 0.14 Ampères 7 feet from standard compass on the feet from steering compass.

A cable carrying 0.14 Ampères on the feet from standard compass 7 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

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 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,

R. W. Hawthorn

Builder's Signature.

Date 8/8/35

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 instⁿ has been fitted out under special survey. & on completion was tested under working conditions & found satisfactory. The insulation resistance is good. The vessel is eligible in my opinion for notation D.F.

*Noted
12/8/35*

Total Capacity of Generators 12 1/2 Kilowatts.

The amount of Fee ... £ 13 :- : 31.7.35
When applied for,
Travelling Expenses (if any) £ : : 3.8.35
When received.

W. T. Badger

Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 13 AUG 1935

Assigned

See J.E. Rpt.



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