

AS NOW

Rpt. 13.

No. 86211

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) 30 SEP 1930

Received at London Office.....

Date of writing Report 16.9.1930 when handed in at Local Office 27/9/1930 Port of NEWCASTLE-ON-TYNE

No. in Survey held at NEWCASTLE. Date, First Survey 18 Aug. Last Survey 19 Sept 1930. Reg. Book. (Number of Visits.....6.....)

89934 on the S. S. CERINTHUS.

Tons { Gross  
Net

Built at NEWCASTLE. By whom built HAWTHORN LESLIE & CO Yard No. 577 When built 1930

Owners HADLEY SHIPPING CO LTD Port belonging to LONDON.

Electric Light Installation fitted by HAWTHORN LESLIE & CO LTD Contract No. 577 When fitted 1930

System of Distribution Double wire Lauber ✓

Pressure of supply for Lighting 110 volts, Heating 110 ✓ volts, Power 110 ✓ 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. 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 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 Dynamo Flat Engine Room aft, 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 Dynamo Flat Engine Room aft

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 micanite and the slab similarly insulated from its framework Yes, 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. Double pole change over switch and double pole fuse for main Generators, double pole switches and fuses for each outgoing circuit

Instruments on main switchboard 1 ammeter, 1 voltmeter, — 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, coupled to earth through switches and fuses.

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 or twin *Both* 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 *4 Volts*

**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 socket *Yes*

**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 objects, or to avoidable risk of mechanical damage *Yes*

**Support and Protection of Cables**, state how the cables are supported and protected *V.I.R. Lead Covered in accommodation secured by brass clips, V.I.R. Lead Cov. & Arm. in Eng. & Boiler Rm & Pock. Main cables run in Galv. Iron Pipe*  
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 VI *Yes*

**Refrigerated Chambers**, if lights are fitted, 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 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 *—*

**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 *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 in Pump Room*

*Gaslight Fittings* how are the cables led *in Gaslight Tubing.*

where are the controlling switches situated *in Wheel House.*

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

**Arc Lamps**, other than searchlight lamps, No. of *—*, 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 *—*, 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 *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.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	1	12 1/2	110	113	500	Single Cylinder Steam Engine		
AUXILIARY	1	12	110	109	1000	2 Cylinder Diesel Engine		
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.				
	MAIN GENERATOR	2	0.11680	37	.064	113	30	V. I. R.	Lead covered & Armoured
	AUXILIARY GENERATOR	2	0.11680	37	.064	109	30	do	do
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM & BOILER ROOM	2	0.02214	7	.064	33	15	do	do
	ACCOMMODATION AFT MIDSHIP & FORE	2	0.02214	7	.064	31.7	52	do	Lead covered & braided
	NAVIGATION	2	0.03960	19	.052	21.8	500	do	do
		2	0.00455	7	.029	1.4	500	do	do
	WIRELESS	2	0.00701	7	.036	9	510	do	do
	SEARCHLIGHT								
	MASTHEAD LIGHT	2	0.00194	3	.029	.36	360	do	do
	SIDE LIGHTS	2	0.00194	3	.029	.36	80	do	Lead covered
	COMPASS LIGHTS	2	0.00194	3	.029	.13	30	do	do
	STERN & DECK LIGHTS	2	0.00194	3	.029	.36	520	do	Lead covered & Braided
	CARGO LIGHTS	2	0.02214	7	.064	13.6	500	do	do
	ARC LAMPS								
	HEATERS	2	0.00299	3	.036	3.1	100	do	Lead Covered

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								
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS								
	OIL FUEL TRANSFER PUMP								
	WINDLASS								
	WINCHES, FORWARD								
	WINCHES, AFT								
	STEERING GEAR								
	WORKSHOP MOTOR	1	0.00455	7	.029	8	30	V. I. R.	Lead covered & Armoured
	VENTILATING FANS								
	REFRIGERATOR MOTOR	1	0.00450	7	.029	16	100	do	do

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.

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

*Rz. Jm. O'Mm.*

Electrical Engineers.

Date 19<sup>th</sup> Sept 30.

COMPASSES.

Distance between electric generators or motors and standard compass 200 feet  
 Distance between electric generators or motors and steering compass 200 feet  
 The nearest cables to the compasses are as follows:—  
 A cable carrying .13 Amperes on the ~~foot from~~ standard compass 6 feet from steering compass.  
 A cable carrying .13 Amperes 6 feet from standard compass on the ~~foot from~~ steering compass.  
 A cable carrying \_\_\_\_\_ Amperes \_\_\_\_\_ 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 yes.  
 The maximum deviation due to electric currents was found to be Nil degrees on any course in the case of the standard compass, and Nil degrees on any course in the case of the steering compass.

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

*Rz. Jm. O'Mm.*

Builder's Signature.

Date 19<sup>th</sup> Sept 30.

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 installation:

has been fitted on board in an special survey tested under full load conditions and found satisfactory. The materials and workmanship were found to be good and sound.

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

*Elec. Light*  
*J. S. Rankin*  
 11/10/30

Total Capacity of Generators 24½ Kilowatts

The amount of Fee ... £ 20.0.0 : When applied for, 17.9. 19.30  
 Travelling Expenses (if any) £ : : When received, 20.9. 19.30

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

Committee's Minute

Assigned

*Elec. Lt.*

In 1921.—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)

