

Rpt. 13.

No. 30504.

**REPORT ON ELECTRIC FITTINGS.**

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

2 DEC 1930

Date of writing Report

19

When handed in at Local Office

1 DEC. 1930

Port of **SUNDERLAND**No. in Survey held at **SUNDERLAND**Date, First Survey **Oct 15** Last Survey **Nov. 17 1930**

Reg. Book.

(Number of Visits.....7.....)

**86452** on the **M.V. THORSHAVN**Tons { Gross **6748**  
Net **4045**Built at **SUNDERLAND**By whom built **Sir J. LAING & SONS LTD** Yard No. **710** When built **1930**Owners **A/S BRYDE & DAHL - HVALFANGERSELSKAP** Port belonging to **Sandefjord** **NORWEGIAN**Electric Light Installation fitted by **THE SUNDERLAND FORGE & ENG CO LTD** Contract No. **710** When fitted **1930**Is the Vessel fitted for carrying Petroleum in bulk **YES.****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.**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. (see note).****Generators, do they comply with the requirements regarding rating** **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 **Yes**, is an adjustable regulating resistance fitted in series with each shunt field **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** Are the lubricating arrangements of the generators as per Rule **Yes****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 **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**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**, if semi-insulating material is used, are all conducting parts insulated from the slabwith mica or micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework **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**, 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** **Triple pole Circuit Breakers for Generators third Pole to act as equaliser. Double pole switches & 2nd type fuses for each outgoing circuit****Instruments on main switchboard** **3** ammeters **3** 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** **Lamps connected thro' switch & fuse on each pole to earth.****Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules** **Yes****Joint Boxes Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule** **Yes.**

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Cables: Single, twin, concentric, or multicore Single are the cables insulated and protected as per Tables IV or V of the Rules Yes  
Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 5.0 V. D.  
Cable Sockets and other connections, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets 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 Yes

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 L.B. & B bales run along fore & aft  
Langways in Salid W. 9 pipe made watertight

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 VIII 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 none

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 + Fibre

Earthing Connections, state what earthing connections are fitted and their respective sectional areas 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 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

Secondary Batteries, are they constructed and fitted as per Rule Yes

Fittings, are all fittings on weather decks, in stakeholds 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 Special Gas-tight  
Pump room fittings  
in Salid W. 9 Pipes outside pump room

where are the controlling switches situated in Accommodation at Sixth Board

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

Are 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 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 T. E., 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 and fitted 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 ...	2	65	110	590				
AUXILIARY ...	1	10	110	90	380	Open type D & B Steam Engine.		
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 Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR ...	2	.5	37	.093	590	686	30	Varnished Canvas	L.B. & B.
EQUALISER CONNECTIONS ...	1	.25	37	.093	295	309	15	do	do
AUXILIARY GENERATOR ...	1	.075	19	.072	90	97	40	V.I.R.	L.B. & B.
EMERGENCY GENERATOR									
ROTARY TRANSFORMER									
ENGINE ROOM ...									
BOILER ROOM ...	1	.01	7	.044	20	31	40	V.I.R.	L.B. & B.
AUXILIARY SWITCHBOARDS ...									
Engineers Motors	1	.06	19	.064	72	93	50	V.I.R.	L.B. & B.
Navigation	1	.01	7	.044	8	31	500	V.I.R.	L.B. & B.
ACCOMMODATION									
Saloon + Forward	1	.04	19	.052	28	64	480	V.I.R.	L.B. & B.
Off Accom.	1	.01	7	.044	21.8	31	200	V.I.R.	L.B. & B.
WIRELESS ...	1	.0225	7	.064	23.6	46	500	V.I.R.	L.B. & B.
SEARCHLIGHT ...									
MASTHEAD LIGHT ...									
SIDE LIGHTS ...									
COMPASS LIGHTS ...									
POOP LIGHTS ...									
CARGO LIGHTS ...	1	.0225	7	.064	14.7	46	480	V.I.R.	L.B. & B.
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 Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP ...										
MAIN BILGE LINE PUMPS ...	1	1	.04	19	.052	64	64	60	V.I.R.	L.B. & B.
GENERAL SERVICE PUMP ...										
EMERGENCY BILGE PUMP ...										
SANITARY PUMP ...										
CIRC. SEA WATER PUMPS ...	1	1	.2	37	.093	256	256	100	Vas. Canvas	L.B. & B.
CIRC. FRESH WATER PUMPS ...										
AIR COMPRESSOR ...	1	1	.15	37	.072	200	246	100	Vas. Canvas	L.B. & B.
JACKET WATER PUMP ...	1	1	.10	19	.093	168	168	100	do	do
ENGINE TURNING GEAR ...										
ENGINE REVERSING GEAR ...										
LUBRICATING OIL PUMPS ...	1	1	.0145	7	.052	36	37	100	V.I.R.	L.B. & B.
OIL FUEL TRANSFER PUMP ...										
WINDLASS ...										
WINCHES, FORWARD ...										
WINCHES, AFT ...										
STEERING GEAR—										
(a) MOTOR GENERATOR ...	1	1	.15	37	.072	185	246	220	Vas. Canvas	L.B. & B.
(b) MAIN MOTOR ...	1	1	.15	37	.072	200	246	20	do	do
WORKSHOP MOTOR ...										
VENTILATING FANS										
No. 1 Bilge Motor	1	1	.075	19	.072	95	97	100	V.I.R.	L.B. & B.
No. 2 " "	2	1	.0045	7	.019	13.5	18.2	100	do	do
Crane	1	1	.04	19	.052	64	64	200	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.

*A. S. Gurney*

p. pro. THE SUNDERLAND FORGE & ENGINEERING CO. LTD. Electrical Engineers.

Date 18.10.30.

# COMPASSES.

Distance between electric generators or motors and standard compass 206 feet.

Distance between electric generators or motors and steering compass 200 feet

The nearest cables to the compasses are as follows:—

A cable carrying 8 Amperes 8 feet from standard compass 6 feet from steering compass.

A cable carrying 18 Amperes 8 feet from standard compass lead into steering compass.

A cable carrying 18 Amperes lead into feet from standard compass 8 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 *ally* course in the case of the standard compass, and *nil* degrees on *ally* course in the case of the steering compass.

SIR JAMES LAING & SONS, LIMITED.

*W. Richardson*  
SECRETARY

Builder's Signature.

Date Nov<sup>r</sup> 27/30

Is this installation a duplicate of a previous case *YES*. If so, state name of vessel M.V. THORSHOLM.

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

This installation was fitted on board under special survey and was tested under working conditions and generally found satisfactory. The governing of the diesel engines was not satisfactory and paralleling tests should be made at a later date when this trouble has been eliminated.

The materials and workmanship were found to be good and sound.

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

*Elec. Light*

*D.H. 4/12/30*

Total Capacity of Generators 140 Kilowatts.

The amount of Fee ... £ 33 : 10 : 0 When applied for, 19 Nov 1930

Travelling Expenses (if any) £ : : 1 Dec 1930 *huru*

*L. C. Clayton*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

*Elec. Lt.*



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