

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

21 APR 1931

Received at London Office

NEWCASTLE-ON-TYNE

Date of writing Report

19

When handed in at Local Office

18.4.31

Port of

No. in Survey held at NEWCASTLE ON TYNE

Date, First Survey

18 Aug/30

Last Survey

9 April

1931

Reg. Book.

90359 on the M.V. HELIX.

(Number of Visits.....9.....)

Tons

Gross 3007

Net 1630

Built at NEWCASTLE ON TYNEBy whom built HAWTHORN LESLIE & CO LTD.

Yard No. 576

When built 1931

Owners ANGLO SAXON PETROLEUM CO LTD

Port belonging to

LONDON

Electric Light Installation fitted by HAWTHORN LESLIE & CO LTD.

Contract No. 576

When fitted 1931

Is the Vessel fitted for carrying Petroleum in bulk YES.

System of Distribution

Double Bus

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

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

No

, 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, Starboard Side

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, 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

, 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

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

Double Pole Switches& fuses for generator, double pole change-over switches & fuses, also double pole circuit breakers for branch circuits.

Instruments on main switchboard

2

ammeters

2

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

Earth Lampscoupled to Earth through switches and fuses.

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 4 volts

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 —

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 Lead covered in accommodation, secured with brass clips, lead covered & secured in machinery spaces. Main cables lead covered & secured in iron pipes in deck.  
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, 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 Partitions, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently finished Yes state the material of which the bushes are made Lead

Earthing Connections, state what earthing connections are fitted and their respective sectional areas none fitted  
—, 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 fitted

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 none fitted

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, how are the cables led Special gastight fittings completely outside the space.  
where are the controlling switches situated In Bridge space

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 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 —

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 ...	1	12	110	109	350	Steam driven			
AUXILIARY ...		12	110	109	350	Worm-hout oil engine			
EMERGENCY ...									
ROTARY TRANSFORMER									

GENERATOR, LIGHTING AND HEATING CONDUCTORS.										
DESCRIPTION.	No. per Pole.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
		Total Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.				
MAIN GENERATORS...	1	0.14780	27	.072	109	152	50	V.I.R.	Lead Covered & Armoured	
EQUALISER CONNECTIONS										
AUXILIARY GENERATOR...										
EMERGENCY GENERATOR										
ROTARY TRANSFORMER	1	0.03960	19	.052	275	64	50	do	do	do
MOTOR GENERATOR...										
ENGINE ROOM...										
BOILER ROOM...										
AUXILIARY SWITCHBOARDS										
ACCOMMODATION	1	0.01462	7	.052	27.5	37	80	do	do	do
Navigation	1	0.00455	7	.029	2.0	18.2	300	do	do	do
Midship & Forward	1	0.03960	19	.052	18.6	64	290	do	do	do
WIRELESS	1	0.01462	7	.052	30	37	80	do	do	do
SEARCHLIGHT										
MASTHEAD LIGHT	1	0.00194	3	.029	36	7.8	250	do	do	do
SIDE LIGHTS	1	0.00194	3	.029	36	7.8	120	do	Lead covered	
COMPASS LIGHTS	1	0.00194	3	.029	22	7.8	30	do	do	
POOP LIGHTS										
CARGO LIGHTS	1	0.03960	19	.052	15.2	64	250	do	Lead covered & Armoured	
ARC LAMPS										
HEATERS										

MOTOR CONDUCTORS.										
DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		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.										
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										
Lathe motor	1	1	0.00701	7	.036	16	24	60	V.I.R.	Lead covered & Armoured
Grinder do	1	1	0.01046	7	.044	24	31	60	do	do
Drilling do	1	1	0.00701	7	.036	16	24	60	do	do
Oil Separator do	1	1	0.00701	7	.036	16	24	80	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.

*Mr. R. W. Hawthorn*

Electrical Engineers.

Date 15<sup>th</sup> April 1931.

#### COMPASSES.

Distance between electric generators or motors and standard compass 150' - 0"

Distance between electric generators or motors and steering compass 147' 6"

The nearest cables to the compasses are as follows:—

A cable carrying 1 Ampères on the ~~foot from~~ standard compass 10 feet from steering compass.

A cable carrying 1 Ampères 10 feet from standard compass on the ~~foot from~~ steering compass.

A cable carrying 2 Ampères 14 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 *all* courses in the case of the standard compass, and *nil* degrees on *all* courses in the case of the steering compass.

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

*Mr. R. W. Hawthorn*

Builder's Signature.

Date 15<sup>th</sup> April, 1931.

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

General Remarks (State quality of workmanship, opinions as to class, &c.) *This installation has been fitted on board under special survey and has been tested under full working conditions and found satisfactory.*

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

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

*Elec. Light*

*R.W. 23/4/31.*

Total Capacity of Generators 24 Kilowatts.

The amount of Fee ... £ 19 : 10 : : When applied for, 20 APR 1931

Travelling Expenses (if any) £ : : When received, 23. 4. 31

*R. C. Clayton.*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 24 APR 1931

Assigned

*Elec. Light*



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Foundation