

Rpt. 13.

No. 76399.

## REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report

19

When handed in at Local Office

5/7/1938

Port of

NEWCASTLE-ON-TYNE

No. in Survey held at

Newcastle

Date, First Survey

27 April

Last Survey

5 July 1938

Reg. Book. Supp.

(Number of Visits.....)

6

37886 on the M.V. "DAPHNELLA"

Tons

Gross 8078

Net 4789

Built at

Newcastle

By whom built

Hawthorn Leslie &amp; Co. Ltd.

Yard No. 611

When built 1938

Owners

Anglo Saxon Petroleum Co. Ltd.

Port belonging to

London

Electric Light Installation fitted by

Hawthorn Leslie &amp; Co. Ltd.

Contract No. 611

When fitted 1938

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

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

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

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

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, and arrangement of equalizer switches

D.P.S. &amp; D.P. fuses on dynamos &amp; 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 &amp; 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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Lloyd's Register  
Foundation



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 4.0 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 laid under machines or floorplates Yes ✓ if so, are they adequately protected                     

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 LC + A in pipe along gangway. LC + A in machinery spaces

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 lashed 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                     

                     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 pipe ✓

where are the controlling switches situated on bridge ✓

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 1 ✓ whether fixed or portable portable ✓, are their fittings as per Rule Yes ✓

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 Yes ✓ 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	16	110	145		Steam, 1 Kerosene Diesel.		
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	.15	37	.072	145	152	400	V.I.R	LC + A
EQUALISER CONNECTIONS ...									
AUXILIARY GENERATOR ...									
EMERGENCY GENERATOR ...									
ROTARY TRANSFORMER MOTOR GENERATOR ...									
ENGINE ROOM ...	1	.04	19	.052	36	64	180	V.I.R	LC + A
BOILER ROOM ...									
AUXILIARY SWITCHBOARDS ...									
ACCOMMODATION Midships	1	.1	19	.083	68	118	600	V.I.R	LC + A in pipe
" Engineers	1	.04	19	.052	53	64	135	V.I.R	LC + A
" Crew	1	.0325	7	.064	13	46	390	V.I.R	LC + A in pipe
Navigation	1	.01	7	.044	3.0	31	750	V.I.R	LC + A in pipe
WIRELESS ...	1	.0225	7	.064	15	46	480	V.I.R	LC + A in pipe
SEARCHLIGHT ...	1	.04	19	.052	60	64	750	V.I.R	50
MASTHEAD LIGHT ...	1	.002	3	.029	.4	7.8	300	V.I.R	50
SIDE LIGHTS ...	1	.002	3	.029	.4	7.8	60	V.I.R	LC
COMPASS LIGHTS ...	1	.002	3	.029	.25	7.8	20	V.I.R	LC
PEOP LIGHTS ...	1	.002	3	.029	.4	7.8	500	V.I.R	LC + A in pipe
CARGO LIGHTS ...	1	.04	19	.052	23	64	405	V.I.R	50
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 Lathe ...	1	1	.0045	7	.029	12	182	54	V.I.R	LC + A
VENTILATING FANS "S" ...	1	1	.01	7	.044	17	31	75	V.I.R	50
Lub oil pumps	1	1	.0045	7	.029	16	18.2	120	50	50
Drill	1	1	.0045	7	.029	16	18.2	45	50	50
Grinder	1	1	.01	7	.044	24	31	45	50	50
Fuel Oil pump	1	1	.0045	7	.029	14	18.2	138	50	50
Turning motor	1	1	.06	19	.064	70	83	105	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 5/7/38

#### COMPASSES.

Minimum distance between electric generators or motors and standard compass 236 feet

Minimum distance between electric generators or motors and steering compass 230 feet.

The nearest cables to the compasses are as follows:—

A cable carrying 25 Ampères on the feet from standard compass 10 feet from steering compass.

A cable carrying 25 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

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 degrees on course in the case of the standard

compass, and degrees on course in the case of the steering compass.

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

Builder's Signature.

Date 5/7/38

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 installed under special survey. The materials used & workmanship is good. On completion the dynamo, governors & the whole inst<sup>n</sup> were tested under working conditions & found satisfactory. This vessel is eligible in my opinion for notation D.F., E.S.D. R.S.

Let. for dynamo & essential machinery will be forwarded as soon as received from engine builders.

Noted.

B.S.B.

7-7-38.

Total Capacity of Generators 32 Kilowatts.

The amount of Fee ... £ 23:—

When applied for.

5/7/38

Travelling Expenses (if any) £

When received.

5/7/38

W.T. Badger

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

See No. 76, 96399