

Rpt. 13.

No. 108210

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

11 MAR 1940

Date of writing Report 27-2-1940 When handed in at Local Office

11 MAR 1940

Received at London Office

Port of Ipswich

No. in Survey held at Rowhedge

Date, First Survey 11-12-39

Last Survey 27-2-1940

Reg. Book.

(Number of Visits 512)

on the motor tanker "BEN HANN"

Tons { Gross 298.
Net

Built at Rowhedge

By whom built Rowhedge Ironworks Ltd.

Yard No. 585

When built 1940

Owners National Benzole Co. Ltd.

Port belonging to London

Electric Light Installation fitted by Central Electrical Co. (Colchester) Ltd.

Contract No. 585

When fitted 1940

Is the Vessel fitted for carrying Petroleum in bulk

In

System of Distribution

Two wire

Pressure of supply for Lighting

110

volts, Heating

110

volts, Power

✓

volts.

Direct or Alternating Current, Lighting

Direct

Power

✓

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

In

Generators, do they comply with the requirements regarding temperature rise

In

are they compound wound

In

are they over compounded 5 per cent.

In

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

In

Have certificates of test results for machines under 100 kw. been submitted and

approved

In

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

In

Are all terminals accessible, clearly marked, and furnished with sockets

In

are they so spaced or shielded that they cannot be accidentally earthed,

short circuited, or touched

In

Are the lubricating arrangements of the generators as per Rule

In

Position of Generators

Engine Room

is the ventilation

in way of the generators satisfactory

In

are they clear of all inflammable material

In

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

In

are their axes of rotation fore and aft

In

Earthing, are the bedplates and frames of the generating plant efficiently earthed

In

are the prime movers and their respective generators

in metallic contact

In

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

In

are they protected from mechanical

injury and damage from water, steam or oil

In

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

To panels

is all insulation of high dielectric strength and of permanently high insulation resistance

✓

is it of an approved type

✓

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

✓

is the non-hygroscopic insulating material of an approved

type

✓

and is the frame effectively earthed

In

Are the fittings as per Rule regarding:— spacing or shielding of live parts

In

In

accessibility of all parts

In

absence of fuses on back of board

In

temperature rise of

omnibus bars

In

individual fuses to voltmeter, pilot or earth lamp

In

are moving parts of switches alive in the

"off" position

In

are all screws and nuts securing connections effectively locked

In

are any fuses fitted on the live side of

switches

In

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches

1 D.P. Circuit Breaker with 2 Overload Releases for Main generator. D.P. Switch 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

None

Instruments on main switchboard

6m

ammeters

6m

voltage

✓

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

Switches, Circuit Breakers and Fusible Cut-outs,

do these comply with the requirements of the Rules

In

are the fusible cutouts of an approved type

In

have the reversed

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current protection devices been tested under working conditions. ☒ are all fuses labelled as per rule ☒

Joint Boxes, Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule ☒

Cables: Single, twin, concentric, or multicore ☒ are the cables insulated and protected as per Tables IV, V, X, XI, XII or XIII of the Rules ☒

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 ☒ **Cable Sockets,** are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets ☒ **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 ☒ are cables laid under machines or floorplates ☒ if so, are they adequately protected ☒

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

Support and Protection of Cables, state how the cables are supported and protected ☒ **Buss clips.** By steel tubes where necessary.

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 ☒

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 ☒ **Joint Boxes.**

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands ☒ **Bushes in Beams and Non-watertight Partitions,** where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed ☒ state the material of which the bushes are made ☒ **Lead.**

Earthing Connections, state what earthing connections are fitted and their respective sectional areas ☒ **Whole Switchboard frame earth to H. Hall.** are their connections made as per Rule ☒

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule ☒ **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 ☒ controlled by separate switch and separate fuses ☒ are the fuses double pole ☒ are the switches and fuses grouped in a position accessible only to the officers on watch ☒ **Secondary Batteries,** are they constructed and fitted as per Rule ☒ are they ventilated as per Rule ☒

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight ☒ 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 ☒ **ho**

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected ☒ **All fittings flameproof.** **Pump Room Light,** this fitting can only be opened from outside Pump Room ☒ how are the cables led ☒ **Cables all outside on deck.**

where are the controlling switches situated ☒ **In wheel house.**

are all fittings suitably ventilated ☒ are all switches and lampholders constructed wholly of non-ignitable, non-absorbent materials ☒

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 ☒ whether fixed or portable ☒ are their fittings as per Rule ☒

Motors, are their working parts readily accessible ☒ are the coils self-contained and readily removable for replacement ☒ are the brushes, brush holders, terminals and lubricating arrangements as per Rule ☒ are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material ☒ are they protected from mechanical injury and damage from water, steam or oil ☒ are their axes of rotation fore and aft ☒ 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 ☒ **Flame Proof** 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 ☒ **Control Gear and Resistances,** are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule ☒ **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 ☒ are all fuses of the fitted cartridge type ☒ are they of an approved type ☒

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 ☒ are they suitably stored in dry situations ☒

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 ...	one	5	110	45 1/2	1000	Diesel Engine	Diesel	about 50°F.	
AUXILIARY ...									
EMERGENCY ...									
ROTARY TRANSFORMER	one	.8	50/60	15	1400	Motor Generator	✓	✓	

GENERATOR, LIGHTING AND HEATING CONDUCTORS.									
DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		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 ...	one		7	.064	45 ✓	46	80	V.I.R.	L.C., Armoured & Braided.
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR ...									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER	one		7	.209	10 ✓	18	10	Do	L.C., Protection.
GENERATOR	one		7	.209	15 ✓	18	10	Do	Rubber covered & Braided.
ENGINE ROOM ...	one		3	.029	3 ✓	7.8	100	Do	
BOILER ROOM ...	✓								
AUXILIARY SWITCHBOARDS	✓								
ACCOMMODATION (A.C. CIRCUITS.)	one		3	.029	8 ✓	7.8	120	Do	Do.
WIRELESS									
SEARCHLIGHT									
MASTHEAD LIGHT	one		3	.029	4 ✓	7.8	110	Do	Do.
SIDE LIGHTS	one		3	.029	8 ✓		30	Do	and in steel tubes when necessary.
COMPASS LIGHTS	one		3	.029	25 ✓		10	Do	
POOP LIGHTS	one		3	.029	4 ✓		60	Do	Do.
CARGO LIGHTS	✓								
HEATERS (2)	one		3	.029	14 ✓		60	Do	Do.

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 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										

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

P.P. CENTRAL ELECTRICAL Co.
(Colchester) LTD.

Electrical Engineers.

Date 28-2-40.

COMPASSES.

Minimum distance between electric generators or motors and standard compass

Minimum distance between electric generators or motors and steering compass

40 feet

The nearest cables to the compasses are as follows:—

A cable carrying 25 Ampères feet from standard compass feet from steering compass.

A cable carrying Ampères feet from standard compass feet from steering compass.

A cable carrying Ampères feet from standard compass feet from steering compass.

Has the compass been adjusted with and without the electric installation at work at full power

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

pp. The Rowledge Ironworks & Co.

M. J. Atcher.
Managing Director.

Builder's Signature.

Date 27 February 1940

Is this installation a duplicate of a previous case If so, state name of vessel

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

This installation has been fitted on board under Special Survey, in accordance with the approved plans and Rule Requirements. The materials & workmanship are sound and of good description.

The installation has been tested under full load condition & is eligible, in my opinion to have rotation of Electric light.

Noted
L.F.
18/3/40.

Total Capacity of Generators 5 Kilowatts.

The amount of Fee ... £ 5 : - : 8 MAR 40

Travelling Expenses (if any) £

When received.
6th July 1940 R.G. 107

Surveyor to Lloyd's Register of Shipping.

S. J. Well.

Committee's Minute

TUE. 19 MAR 1940

Assigned

See Lon. J.C. 108410



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