

Rpt. 13.

No. 108410

# 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 Port of Ipswich

No. in Survey held at Rowhedge Date, First Survey 11-12-39 Last Survey 27-2-1940

Reg. Book. on the motor tanker "BEN HANN" (Number of Visits 512)

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

Tons { Gross 298. Net

System of Distribution Two wire

Pressure of supply for Lighting 110 volts, Heating 110 volts, Power 110 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 In 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 In

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 In and In

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 In

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 In and In

are they constructed wholly of durable, non-ignitable non-absorbent materials In

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

is it of an approved type In, 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 In

is the non-hygroscopic insulating material of an approved type In, and is the frame effectively earthed In

Are the fittings as per Rule regarding: - spacing or shielding of live parts 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 In Are cupboards or compartments containing switchboards composed of fire-resisting material or lined with approved material In

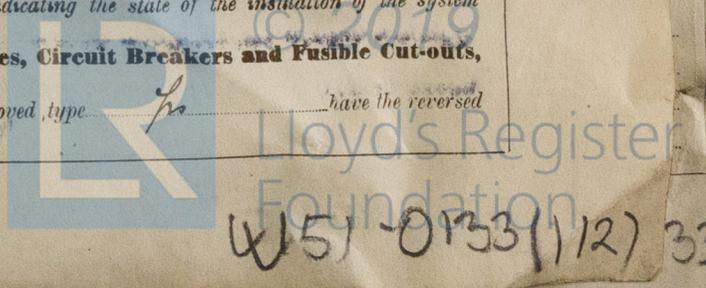
Instruments on main switchboard 6m ammeters 6m

voltmeters In 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, 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  **Bands clips, By Steel tubes when 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 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  has each navigation lamp an automatic indicator as per Rule  **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  **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  **All fittings flame proof.**

**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			Revs. per Min.	DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amperes.			Fuel Used.	Flash Point of Fuel.
MAIN	one	5	110	45 1/2	1000	Diesel Engine	Diesel	Above 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.	In Circuit.	Rule.			
MAIN GENERATOR	one		7	.064	45	46	80	V.I.R.	L.C., Armoured & Braided.
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR									
EMERGENCY GENERATOR									
ROTARY MOTOR	one		7	.209	10	18	10	Do	L.C., Protection
TRANSFORMER 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 ELECTRICIAL Co.  
 (Colchester) LTD.

*J. Johnson*  
 DIRECTOR

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  course in the case of the steering compass.

pp. The Rowledge Ironworks & Co.  
*M. J. Atcher*  
 Managing Director

Builder's Signature. Date 27 Feb 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 notation of Electric Light.

Noted  
*J.F.*  
 18/3/40.

Total Capacity of Generators 5 Kilowatts.

The amount of Fee ... £ 5 : - : { When applied for, 8 MAR 40

Travelling Expenses (if any) £  : : { When received, 6th July 40

*J. Sywell*  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 19 MAR 1940  
 Assigned See Lon. F.C. 108410

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

