

AUG 8 1937

Rpt. 13.

No. 48037

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 16-7-1937 When handed in at Local Office 16-7-1937 Received at London Office HULL
 No. in Survey held at Goole Date, First Survey 9.7.37 Last Survey 14.7.1937
 Reg. Book. Goole Port of HULL
 on the Single Screw Vessel "BEGERIN" (Number of Visits 4)
 Built at Goole By whom built Goole & Sons Yard No. 327 When built 1937
 Owners Henry Wilson Port belonging to Goole
 Electric Light Installation fitted by The Humber Electrical Engineering Co. Ltd Contract No. ✓ When fitted 1937
 Is the Vessel fitted for carrying Petroleum in bulk No

Tons {
 Gross 483
 Net 253

System of Distribution Parallel - constant pressure

Pressure of supply for Lighting 110 volts, Heating _____ volts, Power 220 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 110 Volt. Newark. 220 Volt. in London. Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing ✓

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 220 Volt. Port Side Engine Room. 110 Volt. Thrust recess, 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 Adjacent to 220 Volt Generator in 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

is it of an approved type Sindanyo, 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 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

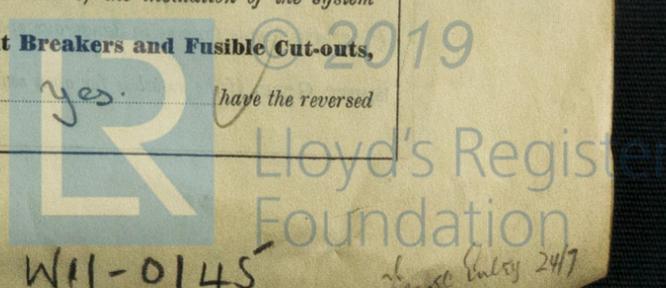
Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches 220 Volt. Generali D.P. Overload Circuit Breaker. 110 Volt. D.P. Switches & fuses. Outgoing Circuits. Power. D.P. Switches & fuses. Light SP Switches & DP fuses.

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 2 sets of Earth lamps & switches

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 _____



(1/2) W11-0145

Handwritten initials and number: 2417

current protection devices been tested under working conditions 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 or XI of the Rules Yes.

If the cables are insulated otherwise than as per Rule, are they of an approved type Yes. **Fall of Pressure**, state maximum between bus bars and any point of the installation under maximum load Power 4 Volts Lighting 2 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 Yes, or waterproof insulating tape 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. Are cables in machinery spaces, galleys, lavatories, bathrooms and lavatories lead covered or run in conduit Yes.

Support and Protection of Cables, state how the cables are supported and protected Run in conduit or clipped to steel work.

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, are the cables and fittings in accordance with the special requirements None.

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.

Earthing Connections, state what earthing connections are fitted and their respective sectional areas Yes. Are their connections made as per Rule 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 Yes.

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 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 None.

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected None, how are the cables led Yes.

where are the controlling switches situated Yes, 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 Yes, are air heaters constructed and fitted as per Rule Yes.

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

Arc Lamps, other than searchlight lamps, No. of Yes, are their live parts insulated from the frame or case Yes, 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 On deck, 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 Yes, if not of this type, state distance of the combustible material horizontally or vertically above the motors Yes.

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing 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 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, are all fuses of the filled 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 type approved by the Home Office Yes.

Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule 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	One	25	220	114	1024	Trick Oil Engine	Flash Oil	Above 150° F.
AUXILIARY	One	2.5	110/150	16.7	1250	Bell from Main Engine shaft		
EMERGENCY	✓							
ROTARY TRANSFORMER	✓							

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	0.1	19	.083	114	118	15	V.I.R.	Conduit
EQUALISER CONNECTIONS	✓								
AUXILIARY GENERATOR	One	0.01	7	.044	16.7	31	28	V.I.R.	Conduit
EMERGENCY GENERATOR	✓								
ROTARY TRANSFORMER MOTOR GENERATOR	✓								
ENGINE ROOM	One	0.0015	1	.044	3	6.1	Max 28	V.I.R.	Lead covered & Arm'd
BOILER ROOM									
AUXILIARY SWITCHBOARDS (WHEEL HOUSE)	One	.007	7	.036	16	24	48	V.I.R.	V.I.R. SWA
4 Sub Circuits each	One	.002	3	.029	4	7.8	Max 50	V.I.R.	Lead covered
ACCOMMODATION									
SWITCH BOARD	One	.007	7	.036	5	24	32	V.I.R.	V.I.R. Arm'd
3 SUB CIRCUITS	One	.002	3	.029	1	7.8	Max 50	V.I.R.	Lead covered
WIRELESS									
SEARCHLIGHT									
MASTHEAD LIGHT	One	.002	3	.029	4	7.8	200	V.I.R.	Conduit & Arm'd
SIDE LIGHTS	One	.002	3	.029	4	7.8	48	"	do
COMPASS LIGHTS	One	.002	3	.029	2	7.8	60	"	do
POOP LIGHTS									
CARGO LIGHTS	One	.002	3	.029	2	7.8	110	"	do
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 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	One	One	.04	19	.082	42	64	280	V.I.R.	Conduit
WINCHES, AFT	One	One	.04	19	.082	42	64	200	V.I.R.	Conduit
STEERING GEAR—										
(a) MOTOR GENERATOR	✓									
(b) MAIN MOTOR	✓									
WORKSHOP MOTOR	✓									
VENTILATING FANS	✓									

All Conductors are of annealed copper conforming to British Standard Specification No. 7 (or International Electro-technical Commission Publication No. 28).

The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

For THE LLOYD ELECTRICAL ENGINEERS Co.

W.B. Plutwood
Proprietor

Electrical Engineers.

Date July 20-37

COMPASSES.

Distance between electric generators or motors and standard compass

Distance between electric generators or motors and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying 2 Ampères feet from standard compass to the 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.

Have the compasses 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 1/2 degrees on any course in the case of the standard compass, and degrees on course in the case of the steering compass.

PER PRO THE GOOLE SHIPBUILDING & REPAIRING CO. LTD.

W. G. G. G. G. Builder's Signature.

Date July 30-1937.

SECRETARY

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.)

This Electric light installation has been fitted on board under Special Survey. The workmanship & Materials are good & when subjected to the test presented in the Rules it was found satisfactory in every respect.

*Noted
J. P. 37*

Total Capacity of Generators 27.5 Kilowatts.

The amount of Fee ... £ 21 : 10 :

When applied for,

JUL 19 1937

When received,

Travelling Expenses (if any) £ 2 :

3.8.1937

D. J. G. G.
Surveyor to Lloyd's Register of Shipping.

WED 4 AUG 1937

Committee's Minute

Assigned See also F.E. 4/11

2m. 5. 34. — Transfer. The Surveys are requested not to write on or below the space for Committee's Minute



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