

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office AUG 22 1939

Date of writing Report 19-8-1939 When handed in at Local Office 19-8-1939 Port of Leith

No. in Survey held at Burntisland Date, First Survey 31-5-39 Last Survey 16-8-1939  
Reg. Book. (Number of Visits 9)

38509 on the S.S. "CEFN-Y-BRYN." Tons { Gross 5164.21  
Net 3067.33

Built at Burntisland By whom built Burntisland J. B. Co. Ltd. Yard No. 227 When built 1939

Owners Ambrose, Davies & Matthews, Ltd. Port belonging to London.

Electric Light Installation fitted by Burntisland J. B. Co. Ltd. Contract No. 227 When fitted 1939

Is the Vessel fitted for carrying Petroleum in bulk No.

System of Distribution TWO WIRE LEAD & RETURN.

Pressure of supply for Lighting 110 volts, Heating ————, 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 ————, 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 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 STARBOARD RECESS IN ENGINE ROOM, 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 12' VERTICALLY 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 STARBOARD RECESS 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 9' VERTICALLY 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 micaite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework SINDANYO PANEL, 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

1 DOUBLE POLE MAIN SWITCH & FUSES, 150 AMP. CAPACITY. 1-30AMP SINGLE POLE SWITCH & DOUBLE POLE FUSES 30AMP. CAPACITY.

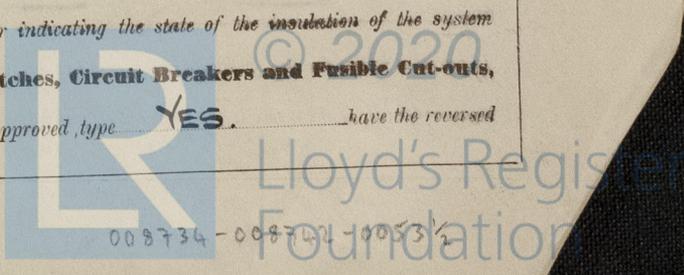
Are turbine driven generators fitted with emergency trip switch as per rule ———— Are cupboards or compartments containing switchboards composed of fire-resisting material or lined with approved material YES. Instruments on main switchboard ONE ammeters ONE.

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

EARTH LAMPS ON EACH POLE. Switches, Circuit Breakers and Fusible Cut-outs, YES, have the reversed

do these comply with the requirements of the Rules YES, are the fusible cutouts of an approved type YES.



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 & TWIN** 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 **2 Volt + 3%**.

**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 **NO** 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 **SUPPORTED WITH SCREWED CLIPS AND ARMOURED**.

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 armouring 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 **YES**.

**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 **METALIC SHEATHING OF ALL MAIN CABLE CLAMPED DIRECT TO EARTH WITH BRASS CLAMPS AT END OF EACH RUN & SUB CIRCUIT** **EARTHED WITH BONDING NIPPLES AT ONE END**.

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 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 **NONE**.

\_\_\_\_\_ how are the cables led \_\_\_\_\_.

where are the controlling switches situated \_\_\_\_\_.

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 \_\_\_\_\_ whether fixed or portable \_\_\_\_\_, 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 **NONE**, 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 \_\_\_\_\_ are all fuses of the filled 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 **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.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ...	ONE	13	110	118	750	VERTICAL STEAM ENGINE	✓	✓
AUXILIARY ...	ONE	15				(headen, Serb N° 18120)		
EMERGENCY ...					10.42			
ROTARY TRANSFORMER								

**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	.1	19	.083	107.5	118	30 FEET	RUBBER	L.C. & S.W.A.
EQUALISER CONNECTIONS ...									
AUXILIARY GENERATOR ...									
EMERGENCY GENERATOR ...									
ROTARY TRANSFORMER MOTOR GENERATOR ...									
ENGINE ROOM ...	ONE	.007	7	.036	11	24	50 FEET	RUBBER	L.C. & S.W.A.
BOILER ROOM ...									
AUXILIARY SWITCHBOARDS ...									
NAVIGATION	ONE	.0045	7	.029	3.5	18.2	360 FEET	"	"
REFRIGERATOR	ONE	.01	7	.044	25.0	31	350 FEET	"	"
ACCOMMODATION SALOON		.01	7	.044	22	31	324 FEET	"	"
CREW		.007	7	.036	9	24	430 FEET	"	"
ENGINEERS	ONE	.01	7	.044	23	31	144 FEET	"	"
WIRELESS ...	ONE	.007	7	.036	14	24	150 FEET	"	"
SEARCHLIGHT ...									
MASTHEAD LIGHT ...	ONE	.002	3	.029	.36	7.8	280 FEET	"	"
SIDE LIGHTS ...	ONE	.002	3	.029	.36	7.8	60 FEET	"	"
COMPASS LIGHTS ...	ONE	.002	3	.029	.36	7.8	30 FEET	"	"
POOP LIGHTS ...									
CARGO LIGHTS ...									
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 ...										
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.

FOR THE BURNTISLAND SHIPBUILDING COMPANY LTD.

*J. J. Cairns* DIRECTOR Electrical Engineers. Date .....

COMPASSES.

Minimum distance between electric generators or motors and standard compass 115'-0"  
 Minimum distance between electric generators or motors and steering compass 120'-0"

The nearest cables to the compasses are as follows:—

A cable carrying 36 Ampères 7" feet from standard compass 7" 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 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 ANY course in the case of the standard compass, and NIL degrees on ANY course in the case of the steering compass.

FOR THE BURNTISLAND SHIPBUILDING COMPANY LTD.

*J. J. Cairns* DIRECTOR Builder's Signature. Date .....

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, etc. This installation has been efficiently fitted on board in accordance with the Rules. The materials and workmanship are sound and good and the installation was found satisfactory under full load and working conditions.

*Notice*  
*28/8/39*

Total Capacity of Generators 13 + 15 Kilowatts.

The amount of Fee ... £ 13 : 0 : 0 When applied for, 24/8/19.39

Travelling Expenses (if any) £ : : 26/8/19.39 When received, MKR 28/8

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

Committee's Minute TUE 29 AUG 1939  
 Assigned See Lth 56 19912

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

