

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report.....19..... When handed in at Local Office..... 25/6/40..... Port of..... Newcastle-on-Tyne..... Received at London Office..... 27/6/40.....

No. in Survey held at..... Newcastle (Wallsend)..... Date, First Survey..... 4-1-40..... Last Survey..... 13-6-1940.....
Reg. Book..... (Number of Visits..... 24.....)

..... on the..... PORT HAPIER..... Tons {Gross..... 9847..... Net..... 5906.....

Built at..... Newcastle (Wallsend)..... By whom built..... Swan Hunter & Wigham Richardson..... Port No..... 1569..... When built..... 1940.....
Owners..... PORT LINE LTD..... Port belonging to.....

Electrical Installation fitted by..... Swan Hunter & Wigham Richardson..... Contract No..... 1569..... When fitted..... 1940.....

Is vessel fitted for carrying Petroleum in bulk..... No..... Is vessel equipped with D.F..... Yes..... E.S.D..... Yes..... Gy.C..... Yes..... Sub.Sig..... No.....

Have plans been submitted and approved..... Yes..... System of Distribution..... Two wire..... Voltage of supply for Lighting..... 220.....

Heating..... 220..... Power..... 220..... Direct or Alternating Current, Lighting..... Direct..... Power..... Direct..... If Alternating Current state frequency..... Prime Movers,

has the governing been tested and found efficient when the whole load is suddenly thrown on and off..... Yes..... Are turbine emergency governors fitted with a trip switch as per Rule.....

Generators, are they compound wound..... Yes....., are they level compounded under working conditions..... Yes....., if not compound wound state distance between generators..... and from switchboard..... Where more than one generator is fitted are they arranged to run in parallel..... Yes....., are shunt field regulators provided..... Yes..... Is the compound winding connected to the negative or positive pole..... Positive.....

Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing..... Yes..... Have certificates of test for machines under 100 kw. been supplied..... Yes..... and the results found as per rule..... Yes..... Are the lubricating arrangements and the construction of the generators as per rule..... Yes.....

Position of Generators..... Engine room, port and starboard....., is the ventilation in way of generators satisfactory..... Yes..... are they clear of inflammable material..... Yes....., if situated near unprotected combustible material state distance from same horizontally..... and vertically....., are the generators protected from mechanical injury and damage from water, steam and oil..... Yes....., are the bedplates and frames earthed..... Yes..... and the prime movers and generators in metallic contact..... Yes.....

Switchboards, where are main switchboards placed..... Switchboard compartment aft of engine room.....

are they in accessible positions, free from inflammable gases and acid fumes..... Yes....., are they protected from mechanical injury and damage from water, steam and oil..... Yes....., if situated near unprotected combustible material state distance from same horizontally..... and vertically....., what insulation material is used for the panels..... Ebony Sindanyo....., if of synthetic insulating material is it an Approved Type..... Yes....., if of semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule..... Is the frame effectually earthed..... Yes.....

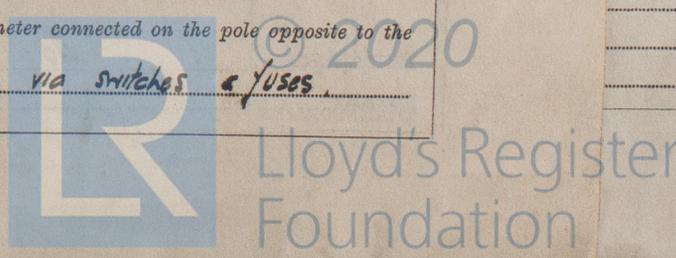
Is the construction as per Rule..... Yes....., including accessibility of parts..... Yes....., absence of fuses on the back of the board..... Yes....., individual fuses to pilot and earth lamps, voltmeters, etc..... Yes..... locking of screws and nuts..... Yes....., labelling of apparatus and fuses..... Yes....., fuses on the "dead" side of switches..... Yes.....

Description, of Main Switchgear for each generator and arrangement of equaliser switches..... Double pole circuit breakers with equalizer switch, with overload and reverse current trips and time delays.....

and for each outgoing circuit..... Double pole circuit breaker or double pole quick break knife switches and double pole fuses.....

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule..... Yes..... Instruments on main switchboard..... 3.....

ammeters..... 3..... voltmeters..... -..... synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the equaliser connection..... Yes..... Earth Testing, state means provided..... Earth lamps coupled to earth via switches & fuses.....



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Switches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an approved type Yes, are all fuses labelled as per Rule Yes, are the reversed current protection devices connected on the pole opposite to the equaliser connection Yes, have they been tested under working conditions Yes. Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule Yes.

Cables, are they insulated and protected as per the appropriate Tables of the Rules Yes, if otherwise than as per Rule are they of an approved type -, state maximum fall of pressure between bus bars and any point under maximum load -, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets Yes. Are paper insulated and varnished cambric insulated cables sealed at the exposed ends Yes with insulating compound - or waterproof insulating tape Yes. Are all the cable runs in accessible positions, not exposed to drip or accumulation of water or oil, high temperatures or risk of mechanical damage Yes, are cables laid under machines or floorplates Yes, if so, are they adequately protected Yes. Are cables in machinery spaces, galleys, laundries, etc., lead covered Yes or run in conduit -. State how the cables are supported and protected L.C.A.B. cables cleated to perforated metal trays or structure of vessel. In accommodation, L.C.B cables clipped to wood grounds.

Are all lead sheaths, armouring and conduits effectually bonded and earthed Yes. Refrigerated chambers, are the cables and fittings as per Rule -. Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands Yes, where unarmoured cables pass through beams, etc., are the holes effectually bushed Yes and with what material Lead. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule Yes. Emergency Supply, state position Bridge deck and method of control D.P. circuit breakers.

Navigation Lamps, are they separately wired Yes controlled by separate double pole switches Yes and fuses Yes. Are the switches and fuses in a position accessible only to the officers on watch Yes, is an automatic indicator fitted -. Secondary Batteries, are they constructed and fitted as per Rule -, are they adequately ventilated -. Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof Yes. Are fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present Yes, if so, how are they protected In magazines, installation in accordance with Admiralty Std. Elec. Spec.

and where are the controlling switches fitted Outside these spaces, are all fittings suitably ventilated Yes. Are all fittings and accessories constructed and installed as per Rule Yes, Searchlight Lamps, No. of -, whether fixed or portable Std. Electrical Specification, are their fittings as per Rule -. Heating and Cooking, is the general construction as per Rule Yes. Are the frames effectually earthed Yes, are heaters in the accommodation of the convection type Yes. Motors, are all motors constructed and installed as per Rule Yes and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil Yes, if situated near unprotected combustible material state minimum distance from same horizontally - and vertically -.

Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing Yes. Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule Yes. Control Gear and Resistances, are they constructed and fitted as per Rule Yes. Lightning Conductors, where required are they fitted as per Rule -. Ships carrying Oil having a Flash Point less than 150° F. Have all the special requirements of the Rules for such ships been complied with -, are all fuses of the 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 -. Spare Gear, if the vessel is for open sea service have spares been provided as per Rule Yes, are they suitably stored in dry situations Yes. Insulation Tests, has the insulation resistance of all circuits and apparatus been megger tested and found satisfactory 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	3	275	220	1705	350	Diesel		
EMERGENCY	1	40	220	182	700	Diesel		
ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
		No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR	275	2	127/103	1705	1864	430	V.C.	L.C.A.B
" " EQUALISER		1	127/103	852	922	430	V.C.	L.C.A.B
EMERGENCY GENERATOR	40	1	19/083	182	191	20	V.C.	L.C.A.B
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.	
AUX. SWITCHBOARDS AND SECTION BOARDS							
Power ring mains		1	61/103	540	1500	V.C.	L.C.A.B
Lighting ring mains		1	19/083	191	1600	V.C.	L.C.A.B

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
WIRELESS						
NAVIGATION LIGHTS						
LIGHTING AND HEATING						

SEE BOOK OF DIAGRAMS

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.	
Main bilge pump	1	20	1	19/064	80	83	V.I.R	L.C.A.B
General service pump	1	25	1	19/083	100	118	V.I.R	L.C.A.B
Sanitary pump	1	20	1	19/064	80	83	V.I.R	L.C.A.B
Circulating pump	1	70	1	37/103	267	385	V.C.	L.C.A.B
Air compressors	2	105	1	19/103	584	728	V.C.	L.C.A.B
Engine turning gear	2	18	1	19/064	72	83	V.I.R	L.C.A.B
Lubricating oil pumps	2	28	1	19/083	112	118	V.I.R	L.C.A.B
Oil fuel transfer pumps	2	8 1/2	1	7/1032	24	37	V.I.R	L.C.A.B
Steering gear motors	2	25	1	27/072	135	192	V.I.R	L.C.A.B
Jack cooling pump	2	88	1	61/093	352	464	V.C	L.C.A.B
Oil fuel priming pump	2	1 1/2	1	3/029	7.5	7.8	V.I.R	L.C.A.B
Cal. valve pump	2	3 1/2	1	7/029	16	18.2	V.I.R	L.C.A.B
Capstan	1	40	1	19/083	155	225	V.C.	L.C.A.B
Windlass	1	57	1	19/083	220	225	V.C.	L.C.A.B

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The Electrical Equipment is installed in accordance with the approved plans and the requirements of the Rules.

All Insulated Conductors are guaranteed to have been tested at the maker's works as specified in the Rules.

The foregoing is a correct description.

For
SWAN, HUNTER, & WIGHAM RICHARDSON, LTD

Electrical Engineers.

Date 18th June 1940

COMPASSES.

Minimum distance between electric generators or motors and standard compass..... 110'

Minimum distance between electric generators or motors and steering compass..... 100'

The nearest cables to the compasses are as follows:—

A cable carrying .12 Ampères ^{inside} feet from standard compass feet from steering compass.

A cable carrying .14 Ampères feet from standard compass ^{inside} 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 7/16 degrees on every course in the case of the standard compass, and 7/16 degrees on every course in the case of the steering compass.

Wm Buckie

Builder's Signature.

Date June 18th 1940

Is this installation a duplicate of a previous case..... No If so, state name of vessel

General Remarks (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.).....

The electrical equipment of this vessel was installed under special survey. The workmanship and materials used are good. On conclusion, the governing regulations and requirements of the generators were tested. The operation of the protective devices of the circuit breakers adjusted. The insulation resistance of each circuit measured and found satisfactory. In my opinion the electrical installation is suitable for a diesel vessel.

Total Capacity of Generators..... 1165 Kilowatts.

The amount of Fee ... £ 74 : 2 : 6 When applied for 25 JUN 1940

Travelling Expenses (if any) £ 10 : 6 : 8 When received.

H. L. Down
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 12 JUL 1940

Assigned

See Note 2^o 98606

2m.10.38.—Transfer. (MADE IN ENGLAND.)
(The Surveyors are requested not to write on or below the space for Committee's Minute.)



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