

## REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

12 SEP 1941

Received at London Office.

Date of writing Report.....19..... When handed in at Local Office.....4/9/41.....1941 Port of Liverpool - on - Tyne  
 No. in Survey held at Ballinacorney Date, First Survey 11-6-41 Last Survey 20-8-41  
 Reg. Book. Suppl. "EMPIRE FLINT" (Number of Visits.....13.....)  
90773 on the "EMPIRE FLINT" Tons {Gross.....8129  
 Net.....4030  
 Built at Ballinacorney By whom built Swan Hunter & Wigham Richardson No. 1601 When built 1941  
 Owners G. M. Ministry of Shipping Port belonging to Liverpool  
 Electrical Installation fitted by Campbell & Johnson Ltd. Contract No. 1601 When fitted 1941  
 Is vessel fitted for carrying Petroleum in bulk Yes Is vessel equipped with D.F. Yes E.S.D. Yes Gy.C. No Sub.Sig. No

Have plans been submitted and approved Yes System of Distribution Two wire Voltage of supply for Lighting 110  
 Heating - Power 110 Direct or Alternating Current, Lighting Ac Power Ac If Alternating Current state periodicity - Prime Movers,  
 has the governing been tested and found as per Rule when full 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 No, are shunt field regulators provided Yes Is the compound winding connected to the negative or positive pole  
Negative Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing - 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 on raised platform at  
after end, 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 Engine room after end near  
generators etc.  
 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 Edmy Sintering, 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  
quick break knife switches and double pole fuses.  
 and for each outgoing circuit 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 Two  
 ammeters Two voltmeters - synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the  
 equaliser connection - Earth Testing, state means provided Each lamp coupled to each via switch & fuses  
 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 If circuit breakers are provided for the generators, at what overload current did they open when tested -, are the reversed current  
 protection devices connected on the pole opposite to the equaliser connection -, have they been tested under working conditions, and at what current  
 did they operate - 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 long run 3/0, 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 ends Yes

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in hardwood debris gives a <sup>very</sup> roughing. <sup>in</sup> accumulation  
L.C.B. caterpillars clipped & were grown.

Are all lead sheaths, armouring and conduits effectively 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 effectively 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 -

and method of control. -

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 Yes. Secondary Batteries, are they constructed and fitted as per Rule. -, are they adequately ventilated. - what is the battery capacity in ampere hours -

**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 No, if so, how are they protected -

and where are the controlling switches fitted....., are all fittings suitably ventilated.....  
are all fittings and accessories constructed and installed as per Rule..... Searchlight Lamps, No. of....., whether fixed or portable.....

....., are their fittings as per Rule..... Heating and Cooking, is the general construction as per Rule.....

are the frames effectually earthed....., are heaters in the accommodation of the convection type..... Motors, are all motors constructed and

installed as per Rule..... and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil....., if situated near unprotected combustible material state minimum distance from same horizontally..... and vertically..... Are motors coupled to oil fuel transfer and unit pressure pumps capable of being stopped from a position accessible in the event of fire in the pump compartment.....

Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing..... Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule..... Control Gear and Resistances, are they constructed and

fitted as per Rule..... 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, Yes, are all fuses of the cartridge type, Yes

are they of an approved type Yes Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships Yes Are the cables lead covered as per Rule Yes 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 tested and found satisfactory..... Yes.....

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amperes.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ... ..	2	25	110	228	600	Single cylinder vertical steam engine.		
EMERGENCY ...								
ROTARY TRANSFORMER								

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULA- TED 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 ... ..	25	1	37/083	228	296	60'	V.C.	L.C.A.B
" " EQUALISER ... ..								
...								
...								
...								
...								
EMERGENCY GENERATOR ... ..								
ROTARY TRANSFORMER: MOTOR ... ..								
" " GENERATOR ... ..								

[illegible]

WIRELESS	NAVIGATION LIGHTS	LIGHTING AND HEATING							
			1	7/064	15	46	200'	V.I.R	L.C.A.B.
			1	7/029	15	15	720'	V.I.R	L.C.A.B.
			Atlantic supply from midship crisscross.						
Upper bridge deck kg.	B <sub>1</sub>		1	7/026	18	24	96'	V.I.R	L.C.
Bridge deck kg - pass	B <sub>2</sub>		1	7/029	12	15	70'	V.I.R	L.C.
" " " - Sd.	B <sub>3</sub>		1	7/029	10	15	10'	V.I.R	L.C.
Midships and fore. kg.			1	7/064	23	31	10'	V.I.R	L.C.
Midships cargo kg.			1	7/029	7	15	60'	V.I.R	L.C.
Top deck kg of pass	F <sub>1</sub>		1	7/026	9	24	200'	V.I.R	L.C.
" " " of cabs.	F <sub>2</sub>		1	7/026	9	24	200'	V.I.R	L.C.
Upper deck kg of pass	F <sub>3</sub>		1	7/029	12	15	250'	V.I.R	L.C.
" " " of cabs.	F <sub>4</sub>		1	7/029	12	15	250'	V.I.R	L.C.
Of cargo kg			1	7/029	3	15	250'	V.I.R	L.C.A.B.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.							
ER and fan	1	3 1/4	1	7'000	26	21	160'	V.I.R	L.C.A.B.
hussup " "	1	3 1/4	1	7'000	26	21	120'	V.I.R	L.C.



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.

Electrical Engineers.

Date 20th August, 1941

#### COMPASSES.

Minimum distance between electric generators ~~or motors~~ and standard compass 220'

Minimum distance between electric generators ~~or motors~~ and steering compass 200'

The nearest cables to the compasses are as follows:—

A cable carrying 10 Ampères ~~feet from~~ <sup>inside</sup> standard compass — feet from steering compass.

A cable carrying 10 Ampères — feet from standard compass <sup>inside</sup> ~~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 his degrees on steering course in the case of the

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

SWAN, HUNTER, & WIGHAM RICHARDSON LTD.

Builder's Signature.

Date 2nd September 1941

Is this installation a duplicate of a previous case no If so, state name of vessel —

Plans. Are approved plans forwarded herewith no If not, state date of approval 8-10-40

Certificates. Are certificates of test for motors engaged on essential services and generators forwarded herewith Yes

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 material used and workmanship are good. The governing, compensating and regulation of the generators have been tested, the insulation resistance of each wiring measured, and found satisfactory. In my opinion the installation is suitable for a diesel vessel.

Noted  
J.H.  
13/9/41

Total Capacity of Generators 50 Kilowatts.

The amount of Fee ... £ 27 : 10 : 0

Travelling Expenses (if any) £ : : 0

Committee's Minute

Assigned See J.E. Machy report

H.B. Bowen.

Surveyor to Lloyd's Register of Shipping.

SEP 26 1941



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