

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

No. 51593

6 - MAY 1942

Received at London Office

Date of writing Report 18-4-1942 When handed in at Local Office 19 Port of HULL

No. in Survey held at 4 Hull Date, First Survey 26.2.42 Last Survey 17.4.42  
Reg. Book. YES TOR (Number of Visits 13) Tons { Gross 511  
Net 167

Built at Bevcoley By whom built Cook, Weller & Greenwell Yard No. 686 When built 1942

Owners The Admiralty Port belonging to  Contract No.  When fitted 1942

Electrical Installation fitted by Mr Broady & Son Ltd. E.S.D. Yes Gy.C. Yes Sub.Sig. Yes

Is vessel fitted for carrying Petroleum in bulk No Is vessel equipped with D.F. Yes Voltage of supply for Lighting 110

Have plans been submitted and approved Yes System of Distribution Central power Parallel 2 wire Prime Movers, Heating 110 Power 110 Direct or Alternating Current, Lighting DC Power DC If Alternating Current state frequency Yes

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 Yes Generators, are they compound wound Yes, are they level compounded under working conditions Yes, if not compound wound state distance between generators Yes and from switchboard Yes 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 Positives 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 Supply 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 Yes are they clear of inflammable material Yes, if situated near unprotected combustible material state distance from same horizontally Yes and vertically Yes, 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 adjacent to generator

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 Yes and vertically Yes, what insulation material is used for the panels As per rule on frame work Yes, 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 Yes 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 DP Switches & fuses

and for each outgoing circuit DP Switches & fuses

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

ammeters Yes voltmeters Yes synchronising devices Yes 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 & switches



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. Yes, state maximum fall of pressure between bus bars and any point under maximum load. 4 volt, 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. Yes 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. Yes State how the cables are supported and protected. Clipped to bulkhead or bulkheads  
Cables run in solid drawn conduit in bunker or magazine spaces  
D.G. Cable run in special steel tube in bunker with gland & drainage arrangements  
Are all lead sheaths, armouring and conduits effectually bonded and earthed. Yes Refrigerated chambers, are the cables and fittings as per Rule. Yes 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. CX No and method of control. Yes 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. CX No Secondary Batteries, are they constructed and fitted as per Rule. Yes, are they adequately ventilated. Yes 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. Special Admiralty type lamps in magazines etc.  
and where are the controlling switches fitted. here deck - above, are all fittings suitably ventilated. Yes are all fittings and accessories constructed and installed as per Rule. Yes Searchlight Lamps, No. of One 20" whether fixed or portable. One 6" are their fittings as per Rule. Yes Heating and cooling, 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. Yes and vertically. Yes 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. Yes 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 If portable lamps for use in dangerous spaces are supplied, are they of a self-contained battery-fed flameproof type. 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 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.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ...	<u>One</u>	<u>15</u>	<u>110</u>	<u>136</u>	<u>500</u>	<u>Steam Engine</u>	<u>✓</u>	<u>✓</u>
EMERGENCY ...								
ROTARY TRANSFORMER								

## GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (load 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 ...	<u>15</u>	<u>One</u>	<u>37/072</u>	<u>136</u>	<u>152</u>	<u>40</u>	<u>V.I.R</u>	<u>L.C</u>
" " EQUALISER ...								
SHORE CONNECTIONS		<u>"</u>	<u>"</u>	<u>"</u>	<u>"</u>	<u>60</u>	<u>"</u>	<u>"</u>
EMERGENCY GENERATOR ...								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

## MAIN DISTRIBUTION CABLES.

AUX. SWITCHBOARDS AND SECTION BOARDS ...							
For d indicator	One	19/052	56	64 ✓	200	V.I.R	L.C
D.G.	"	19/044	32	53 ✓	50	"	"
For a lighting	"	7/044	31	31 ✓	300	"	"
As do	"	"	25	"	60	"	"
As do	"	"	—	"	250	"	"
Search light 20"	"	7/036	10	24 ✓	220	"	"
6"	"	"	3	"	"	"	"
Navigation	"	"	11	"	"	"	"

## LIGHTING AND HEATING, ETC., CABLES.

WIRELESS ...	<u>One</u>	<u>7/036</u>	<u>"</u>	<u>24</u>	<u>220</u>	<u>V.I.R</u>	<u>L.C</u>
NAVIGATION LIGHTS ...	<u>"</u>	<u>1/044</u>	<u>One</u>	<u>5</u>	<u>350</u>	<u>"</u>	<u>L.C</u>
LIGHTING AND HEATING ...	<u>"</u>	<u>7/0076</u>	<u>max</u>	<u>10</u>	<u>"</u>	<u>"</u>	<u>I.R. Sheath</u>
<u>Heating (sub circuits)</u>	<u>"</u>	<u>3/036</u>	<u>10 max</u>	<u>10</u>	<u>140</u>	<u>"</u>	<u>L.C</u>
<u>Heating do.</u>	<u>"</u>	<u>1/044</u>	<u>1 max</u>	<u>5</u>	<u>350</u>	<u>"</u>	<u>L.C</u>

## MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
<u>Ventilator fan 5"</u>	<u>2</u>	<u>1/2</u>	<u>One</u>	<u>3/036</u>	<u>2.5</u>	<u>10</u>	<u>180</u>	<u>V.I.R</u>
<u>do 7 1/2"</u>	<u>1</u>	<u>1/2</u>	<u>"</u>	<u>"</u>	<u>4.5</u>	<u>"</u>	<u>"</u>	<u>"</u>
<u>Refrigerator 3 1/2 cu ft</u>	<u>1</u>	<u>"</u>	<u>"</u>	<u>"</u>	<u>5.2</u>	<u>"</u>	<u>50</u>	<u>"</u>
<u>do 7 1/2 do</u>	<u>1</u>	<u>"</u>	<u>"</u>	<u>"</u>	<u>"</u>	<u>"</u>	<u>80</u>	<u>"</u>



Yes Tor

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.

WM BROADY & SON LTD.  
ENGLAND

*J. Broad*

Electrical Engineers.

Date 12. 2. 42

COMPASSES.

Minimum distance between electric generators or motors and standard compass.....  
Minimum distance between electric generators or motors and steering compass.....  
The nearest cables to the compasses are as follows:—  
A cable carrying ..... 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.  
Have the compasses been adjusted with and without the electric installation at work on 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.  
Builder's Signature. Date.....

*Compass cables in vicinity of compasses & cables for lights & motors*

Is this installation a duplicate of a previous case..... *Yes*..... If so, state name of vessel *BIRDLIP (with minor modifications)*

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

*This installation has been fitted on board in accordance with the approved Admiralty plans & requirements & the Society's Rules. The workmanship & materials are good & when tried under working conditions & tested as required by the Admiralty & the Rules the installation was found satisfactory in every respect.*

*Noted  
7/5/42*

Total Capacity of Generators..... *15* ..... Kilowatts.

The amount of Fee ... .. £ *30 : 0* : .....  
Travelling Expenses (if any) £ : : .....  
When applied for 15 APR 1942  
When received. .... 19.....

*L. J. H. H. H. H.*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute ..... *FRL 15 MAY 1942* .....

Assigned..... *See Incl 26 51593*

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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