

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

2 DEC 1942

Received at London Office.....

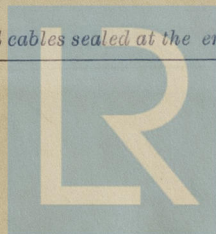
30 NOV 1942

Date of writing Report.....19..... When handed in at Local Office.....19..... Port of StueNo. in Survey held at Selly Stue Date, First Survey 9. 8. 42 Last Survey 12. 11. 1942

(Number of Visits.....1.0.....)

Reg. Book. on the H.M.T. "MULLET" Tons {Gross...387...
Net...127...Built at Selly By whom built Cochran & Son Ltd Yard No. 1253 When built 1942Owners The Admiralty Port belonging to.....Electrical Installation fitted by Wm Broady & Son Contract No. ✓ When fitted 1942Is vessel fitted for carrying Petroleum in bulk no Is vessel equipped with D.F. Yes E.S.D. Yes Gy.C. ✓ Sub.Sig. ✓Have plans been submitted and approved Yes System of Distribution Parallel Constant Pressure Voltage of supply for Lighting 110Heating 110 Power 110 Direct or Alternating Current, Lighting D.C. Power D.C. 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 atrip 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 theyarranged to run in parallel ✓, are shunt field regulators provided Yes Is the compound winding connected to the negative or positive poleNegative Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing ✓ Have certificates oftest for machines under 100 kw. been supplied Admiralty and the results found as per rule ✓ Are the lubricating arrangements and the constructionof the generators as per rule Yes Position of Generators Engine roomis the ventilation in way of generators satisfactory Yes are they clear of inflammable material Yes, if situatednear unprotected combustible material state distance from same horizontally ✓ and vertically ✓, are the generators protected from mechanicalinjury and damage from water, steam and oil Yes, are the bedplates and frames earthed Yes and the prime movers and generators in metalliccontact Yes Switchboards, where are main switchboards placed Adjoining generatorin engine roomare they in accessible positions, free from inflammable gases and acid fumes Yes, are they protected from mechanical injury and damage from water, steamand oil Yes, if situated near unprotected combustible material state distance from same horizontally ✓ and vertically ✓, what insulationmaterial is used for the panels Units mounted on framework, if of synthetic insulating material is it an Approved Type ✓, if ofsemi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule ✓ Is the frame effectually earthed YesIs the construction as per Rule Yes, including accessibility of parts Yes, absence of fuses on the back of the board Yes, individual fusesto 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.....D.P. switches and fusesD.P. switches and fusesD.P. switches and fuses

and for each outgoing circuit.....

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule ✓ Instruments on main switchboard oneammeters one voltmeters ✓ synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to theequaliser connection ✓ Earth Testing, state means provided Earth lamps & switchesSwitches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an approved type Yes, are all fuses labelled asper Rule Yes If circuit breakers are provided for the generators, at what overload current did they open when tested ✓, are the reversed currentprotection devices connected on the pole opposite to the equaliser connection ✓, have they been tested under working conditions, and at what currentdid they operate ✓ Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule YesCables, 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 4 volts, are the ends of all cables having a sectional area of 0.04square inch and above provided with soldering sockets Yes Are paper insulated and varnished cambric insulated cables sealed at the ends ✓✓

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with insulating compound ☒ or waterproof insulating tape ☒. 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. ☒ are cables laid under machines or floorplates. ☒ if so, are they adequately protected. ☒ Are cables in machinery spaces, galleys, laundries, etc., lead covered. ☒ or run in conduit. ☒ State how the cables are supported and protected. *Clipped to bulkheads or trays.*
D.G. through bunker in solid drawn pipe with expansion and drainage arrangements.
Cables guarded by steel casing where required.
Are all lead sheaths, armouring and conduits effectually bonded and earthed. ☒ 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. ☒ where unarmoured cables pass through beams, etc., are the holes effectively bushed. ☒ and with what material. *Lead* Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. ☒ Emergency Supply, state position. *Oil lamps*
and method of control. ☒

Navigation Lamps, are they separately wired. ☒ controlled by separate double pole switches. ☒ and fuses. ☒ Are the switches and fuses in a position accessible only to the officers on watch. ☒ is an automatic indicator fitted. ☒ Secondary Batteries, are they constructed and fitted as per Rule. ☒ are they adequately ventilated. ☒ what is the battery capacity in ampere hours. *144*

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof. ☒ Are fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present. ☒ if so, how are they protected. *Run in conduit in special Admiralty fittings raised in the Admiralty requirements*
and where are the controlling switches fitted. *Two deck above* are all fittings suitably ventilated. ☒ are all fittings and accessories constructed and installed as per Rule. ☒ Searchlight Lamps, No. of *1-20*, whether fixed or portable. *fixed*
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. ☒ are all fuses of the cartridge type. ☒

are they of an approved type. ☒ Are the fittings for pump rooms, tween deck spaces, etc., in accordance with the special requirements for such ships. ☒ Are the cables lead covered as per Rule. ☒ Spare Gear, if the vessel is for open sea service have spares been provided as per Rule. ☒ are they suitably stored in dry situations. ☒ Insulation Tests, has the insulation resistance of all circuits and apparatus been tested and found satisfactory. ☒

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 ...	<i>One</i>	<i>15</i>	<i>110</i>	<i>136</i>	<i>875</i>	<i>Compound engine</i>		
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 ...	<i>15</i>	<i>1</i>	<i>37/072</i>	<i>136</i>	<i>152</i>	<i>20</i>	<i>VIR</i>	<i>LC AP 6187A</i>
" " EQUALISER ...								<i>to steel guards as reqd</i>
SHORE CONNECTION		<i>1</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>50</i>	<i>"</i>	
EMERGENCY GENERATOR ...								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

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MAIN DISTRIBUTION CABLES.

DESCRIPTION.	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.			
AUX. SWITCHBOARDS AND SECTION BOARDS W/T ...	<i>1</i>	<i>7/036</i>	<i>25</i>	<i>24</i>	<i>110</i>	<i>VIR</i>	<i>LC AP 6193A</i>
20" Searchlight	<i>1</i>		<i>10</i>	<i>24</i>	<i>120</i>		
6" hand signalling	<i>1</i>	<i>7/029</i>	<i>3</i>	<i>15</i>			<i>6194A</i>
Forward lighting	<i>1</i>	<i>7/044</i>	<i>25</i>	<i>31</i>	<i>190</i>		<i>6192A</i>
Radio	<i>1</i>		<i>14</i>	<i>1</i>	<i>220</i>		
Forward Redistress	<i>1</i>	<i>7/064</i>	<i>27</i>	<i>46</i>	<i>160</i>		<i>6191A</i>
Aft lighting blue circuits	<i>1</i>	<i>7/044</i>	<i>25</i>	<i>31</i>	<i>20</i>		<i>6192A</i>
D.G.	<i>1</i>	<i>4</i>		<i>1</i>	<i>20</i>		
Radio post winding	<i>1</i>						
Navigation	<i>1</i>	<i>7/036</i>	<i>10</i>	<i>24</i>	<i>120</i>		<i>6093A</i>

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS ...	<i>off main board</i>	<i>1</i>	<i>1/044</i>	<i>1.5</i>	<i>5</i>	<i>290</i>	<i>VIR</i>	<i>LC AP 6196A</i>
NAVIGATION LIGHTS								
LIGHTING AND HEATING								
Forward lighting		<i>1</i>	<i>1/044</i>	<i>3</i>	<i>5</i>	<i>120</i>		<i>6196A</i>
Aft		<i>1</i>				<i>180</i>		
Redistress		<i>1</i>	<i>3/036</i>	<i>9</i>	<i>19</i>	<i>90</i>		<i>6195A</i>
R.O.F.		<i>1</i>	<i>7/029</i>	<i>10</i>	<i>15</i>	<i>24</i>		<i>6194A</i>
6" hand signalling		<i>1</i>	<i>3/036</i>	<i>3</i>	<i>10</i>	<i>50</i>		<i>6195A</i>
20" Searchlight		<i>1</i>		<i>10</i>		<i>36</i>		

Wiring fitted for D.A.R. and ventilating fans but these not supplied.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
Ventilating fan 5'		<i>One</i>	<i>3/036</i>	<i>-</i>	<i>10</i>	<i>12</i>	<i>VIR</i>	<i>LC AP 6195A</i>
" 7 1/2"			<i>7/029</i>	<i>-</i>	<i>15</i>			<i>6194A</i>
Refrigerator 3 1/2 cwt.			<i>3/036</i>	<i>-</i>	<i>10</i>			<i>6195A</i>
" 7 1/2"				<i>-</i>	<i>10</i>			

These motors have not been supplied but cables have been fitted to section boxes to enable fan motors to be wired and connected later if required. Refrigerator not supplied but wiring and plugs fitted and ready for installing if refrigeration.

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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.

WM BROADBENT & SONS LTD
ENGLAND

Electrical Engineers.

Date 25th Nov 1942

COMPASSES.

Minimum distance between electric generators or motors and standard compass

60 ft

Minimum distance between electric generators or motors and steering compass

70 ft

The nearest cables to the compasses are as follows:—

A cable carrying . 2 Ampères ~~has~~ ^{is} from standard compass 8 feet from steering compass.

A cable carrying . 4 Ampères 1.5 feet from standard compass 6 feet from steering compass.

A cable carrying . 2 Ampères 3 feet from standard compass 8 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 COCHRANE & SONS, LTD

Builder's Signature.

Date

J. Gray DIRECTOR

Is this installation a duplicate of a previous case

Yes

If so, state name of vessel GRAYLING

Plans. Are approved plans forwarded herewith

No

If not, state date of approval 16.9.41

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

✓

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

This Electrical Installation has been fitted on board under Special Order in accordance with the approved plans, the Rules & the Specification.

The workmanship and materials are good and when tried under working conditions and tested as required by the Admiralty and the Rules the installation was found satisfactory in every respect.

Noted

L.Y.

4/12/42

Total Capacity of Generators 15 Kilowatts.

The amount of Fee £ 30

When applied for, 23.11.1942

Travelling Expenses (if any) £

When received, 25.11.1942

W. S. Shucias

Surveyor to Lloyd's Register of Shipping.

FRI. 4 DEC 1942

Committee's Minute

Assigned

See Vol 28 51820

5m. 4.30.—Transfer. (MADE AND PRINTED IN ENGLAND.)
(The Surveyors are requested not to write on or below the space for Committee's Minute.)



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