

Rpt. 13.

No. 52049

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.....

Date of writing Report.....19..... When handed in at Local Office.....19..... Port of HULL

No. in Survey held at Beverley and Hull Date, First Survey 22.3.43 Last Survey 19.5 1943
Reg. Book. (Number of Visits.....16.....)

on the Military class tender HMT. BOMBARDIER Tons {Gross.....580
Net.....182

Built at Beverley & Hull By whom built Book, Welton & Gemmell Yard No. 708 When built 1943

Owners The Admiralty Port belonging to.....

Electrical Installation fitted by Wm. Broady & Son Contract No..... When fitted 1943

Is vessel fitted for carrying Petroleum in bulk..... 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 yes Power yes 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..... 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....., 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 admissibly 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 starboard side on platform

....., 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 starboard side near

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..... and vertically....., what insulation

material is used for the panels Units mounted on framework with mica insulation if of synthetic insulating material is it an Approved Type....., 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 + 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 one

ammeters one 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 Lamps coupled to earth via switches + 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

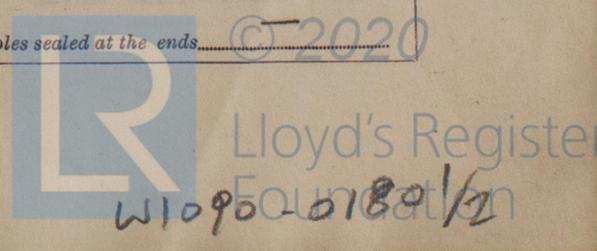
protection devices connected on the pole opposite to the equaliser connection....., have they been tested under working conditions, and at what current

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 3V....., 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.....



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... yes... are cables laid under machines or floorplates... no... if so, are they adequately protected... —... Are cables in machinery spaces, galleys, laundries, etc., lead covered... yes... or run in conduit... —... State how the cables are supported and protected... Clipped to perforated steel trays or direct to steel or woodwork

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... —... 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... no... 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... yes... if so, how are they protected... Admiralty pattern fittings for magazines & spirit rooms

and where are the controlling switches fitted... On messdeck above... are all fittings suitably ventilated... yes... are all fittings and accessories constructed and installed as per Rule... yes... Searchlight Lamps, No. of... 2-10"... whether fixed or portable... portable... are their fittings as per Rule... yes... 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... no... 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... —... 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... Admiralty supply... Control Gear and Resistances, are they constructed and fitted as per Rule... yes... Lightning Conductors, where required are they fitted as per Rule... Steel mast... 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... 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...

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 ... | 1 | 20 | 115 | 182 | 500 | Steam engine | | |
| EMERGENCY ... | | | | | | | | |
| 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 ... | 20 | 1 | 37/093 | 182 | 214 | 20' | VIR. | L.C. AP6185A WE |
| " " EQUALISER ... | | | | | | | | |
| EMERGENCY GENERATOR ... | | | | | | | | |
| ROTARY TRANSFORMER: MOTOR | | | | | | | | |
| " " GENERATOR ... | | | | | | | | |

MAIN DISTRIBUTION CABLES.

| DESCRIPTION. | 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. | | | |
| AUX. SWITCHBOARDS AND SECTION BOARDS ... | | | | | | | |
| After lighting | 1 | 7/036 | 20 | 24 | 24' | VIR. | L.C. AP6193A WE |
| " Bells and lighting | 1 | 7/036 | 6 | 24 | 50' | " | " " " |
| Forward lighting | 1 | 19/052 | 20 | 64 | 202' | " | 6190A " |
| " " " " " " " " | 1 | 19/052 | 52 | 64 | 212' | " | " " " |
| D.G. | 1 | 7/048 | 20 | 31 | 30' | " | 6192A " |
| Shoe supply | 1 | 37/093 | | 214 | 12' | " | 6195A " |

LIGHTING AND HEATING, ETC., CABLES.

| DESCRIPTION. | 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. | | | |
| WIRELESS ... | 1 | 7/036 | 15 | 24 | 180' | VIR. | L.C. AP6193A WE |
| NAVIGATION LIGHTS ... | 1 | 7/036 | 6 | 24 | 180' | " | " " " |
| LIGHTING AND HEATING ... | | | | | | | |
| Engine & Boiler rooms | 1 | 7/036 | 20 | 24 | 24' | " | " " " |
| P.O.'s lighting | 1 | 7/036 | 12 | 24 | 20' | " | " " " |
| Wood rooms & officer's lighting | 1 | 7/036 | 12 | 24 | 12' | " | " " " |
| " " " " " " " " | 1 | 19/052 | 50 | 14 | 212' | " | AP6190A " |
| Crews lighting | 1 | 7/036 | 20 | 24 | 40' | " | 6193A " |
| Radio | 1 | 7/044 | 8 | 31 | 296' | " | 6192A " |
| Projectors 10" | 1 | 7/036 | 18 | 24 | 272' | " | 6193A " |

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. |
|--|-----|--------|---------------------------|--|-----------------------------|-------|---|-----------------|-----------------|
| | | | No. in Parallel Per Pole. | Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm. | In the Circuit. | Rule. | | | |
| San 12 1/2" | 1 | 1/2 | 1 | 7/036 | 14 | 24 | 80' | VIR. | L.C. AP6193A WE |
| " 7 1/2" | 1 | 1/2 | 1 | 7/036 | 45 | 24 | 25' | " | " " " |
| " 5" | 3 | 1/4 | 1 | 3/036 | 2.5 | 12 | 30' | " | 6195A " |
| Refrigerators D.R. 7 1/2 cwt. | 1 | 1/2 | 1 | 3/036 | 5.2 | 12 | 20' | " | " " " |
| " " 3 1/2 cwt. | 1 | 1/2 | 1 | 3/036 | 5.2 | 12 | 40' | " | " " " |

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.
 ENGLISH STREET
 HULL.

Electrical Engineers. Date 17.5.43

COMPASSES.

Minimum distance between electric generators or motors and standard compass 60 ft.
 Minimum distance between electric generators or motors and steering compass 55 ft.

The nearest cables to the compasses are as follows:—

A cable carrying 1 Ampères inside feet from standard compass 5' feet from steering compass.
 A cable carrying 25 Ampères 5' 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 nil degrees on every course in the case of the standard compass, and nil degrees on every course in the case of the steering compass.

COOK, WELTON & GEMMELL, LTD.

A. Campbell
 General Manager

Builder's Signature. Date 19.5.43

Is this installation a duplicate of a previous case yes If so, state name of vessel FUSILIER

Plans. Are approved plans forwarded herewith no If not, state date of approval 6/8/42 Admissally letter no. 142/42

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

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

The electrical equipment was installed under special survey and in accordance with the approved plans and with the specification. The material used was of good quality and the workmanship is good. On completion the equipment was operated under working conditions with satisfactory results and the insulation resistance of all circuits and apparatus was measured and found good. This equipment is in my opinion suitable for a classed vessel.

Noted
J.P.
 5-7/43

Total Capacity of Generators 20 Kilowatts.

| | | |
|--------------------------------|-----------|-------------------------------------|
| The amount of Fee ... | £ 35: 0 : | } When applied for,19..... |
| Travelling Expenses (if any) £ | : : | |

W. J. Cornell
 Surveyor to Lloyd's Register of Shipping.

FRI. 9 JUL 1943

Committee's Minute

Assigned *see minute on*
J.E. Rpt.

501.4.38.—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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