

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office. 3 APR 1946

Date of writing Report. 25th Nov. 1946 When handed in at Local Office. 2 APR 1946 Port of Sunderland

No. in Survey held at Sunderland Date, First Survey 11th Jan. Last Survey 24th Nov. 1946
Reg. Book. Suppl. (Number of Visits. 10)

36902 on the M.V. "BRITISH MAJOR" Tons {Gross 8564
Net 4908

Built at Sunderland By whom built Wm. Duffell & Sons Ltd. Yard No. 734 When built 1946

Owners. British Tank Co. Ltd. Port belonging to London

Electrical Installation fitted by Campbell & Dennywood Ltd. Contract No. 734 When fitted 1946

Is vessel fitted for carrying Petroleum in bulk. Yes 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 insulated Voltage of supply for Lighting 110

Heating. Power 110 Direct or Alternating Current, Lighting Yes Power Yes 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. Yes, 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 situated forward

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 forward bulkhead

on gallery above quoining side

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. "Gonylinex" 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

miniature breakers with inverse time limit overcurrent release on two

poles, reversed current trip and no-volt trip the third pole as equaliser

and for each outgoing circuit. Double pole double throw 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. Yes Earth Testing, state means provided. E lamps connected to E through one fuse

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. 380A, are the reversed current

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

did they operate. Yes 40A. 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. 6.6V, are the ends of all cables having a sectional area of 0.01

square inch and above provided with soldering sockets. Yes Are paper insulated and varnished cambric insulated cables sealed at the 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. or M.I.C.S. cable clipped to steel plate under fire and aft gangway or clipped to surface or tray in machinery spaces. L.C.B. cable clipped to surface or wood grounds in accommodation space.

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. 24 volt battery in engine room charged through and method of control. Emergency lights operate on resistance from 110 V. ship's supply feeding of machinery space available. 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. yes, if so, how are they protected. Wipac flameproof certified lighting fittings installed in accessible space and where are the controlling switches fitted. In accommodation space above connection provided for are all fittings and accessories constructed and installed as per Rule. yes Searchlight Lamps, No. of 1, whether portable yes 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. 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. 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. 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

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 ...	2	30	110	270	640	Single cylinder		
	1	30	110	270	640	Steam engine		
Note: It is intended to fit a third 30kw. generating set at a later date and provision for the control of the same has been made on the main switchboard. It is also intended that the air conditioning plant shown on the plans will be fitted later.								
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 GENERATORS ...	2 x 30	1	37.083	273	296	30/38	V.C.	L.C.B.
" " EQUALISER ...		1	19.083	—	191	15/19	V.C.	L.C.B.
Star connection		1	19.083	—	191	160	V.C.	L.C.A.B.
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 ...							
Brushing Lighting S.B.	1	37.072	86	246	560	V.C.	L.C.A.B.
Brushing Ventilating S.B.	1	19.083	69.6	191	560	V.C.	L.C.A.B.
Aft Lighting S.B.	1	19.044	52	87	140	V.C.	L.C.A.B.
Aft Ventilating S.B.	1	19.083	64	191	180	V.C.	L.C.A.B.
Workshop Lighting S.B.	1	19.044	50	87	150	V.C.	L.C.A.B.
Workshop Infus. S.B.	1	19.044	42.8	87	150	V.C.	L.C.A.B.
Oil Pumping S.B.	1	19.044	50.2	87	80	V.C.	L.C.A.B.
Radar Scanner	1	19.064	45	135	540/130	V.C.	L.C.A.B. + L.C.B.
Long Canal Proj. Connection	1	19.052	40	104	880/120	V.C.	L.C.A.B. + L.C.B.
Port S.B.	1	7.044	20	42	140	V.C.	L.C.A.B.
Star S.B.	1	7.044	20	42	140	V.C.	L.C.A.B.
Emergency S.B.	1	7.044	10	42	12	V.C.	L.C.A.B.

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS ...	1	19.044	15/20	87	540/100	V.C.	L.C.A.B. + L.C.B.
NAVIGATION LIGHTS S.B.	1	7.044	5	42	540/100	V.C.	L.C.A.B. + L.C.B.
LIGHTING AND HEATING ...	all. find to have S.B. from Brushing S.B. as below						
Star S.B.	1	7.044	15	42	30	V.C.	L.C.B.
Port S.B.	1	7.044	15	42	50	V.C.	L.C.B.
Emergency S.B.	1	7.044	9	42	20	V.C.	L.C.B.
Star S.B.	1	7.044	20	42	80	V.C.	L.C.B.
Star S.B.	1	7.044	10	42	120	V.C.	L.C.B.
Star S.B.	1	7.044	5	42	60/40	V.C.	L.C.B. + L.C.A.B.
Star S.B.	1	7.044	7	42	140	V.C.	L.C.B.
Star S.B.	1	7.044	5	42	140	V.C.	L.C.B.
Star S.B.	1	7.044	14	42	40	V.C.	L.C.B.
Star S.B.	1	7.044	14	42	80	V.C.	L.C.B.
Star S.B.	1	7.044	10	42	60	V.C.	L.C.B.
Star S.B.	1	7.044	10	42	120	V.C.	L.C.B.
Star S.B.	1	7.044	4	42	160	V.C.	L.C.B.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
Steam Tank Vent. Fan	1	3	1	7.044	25.8	42	120	V.C.
Steam Tank Vent. Fan	1	3	1	7.044	25.8	42	120	V.C.
Pantry Fan	1	1/2	1	7.044	5	42	40	V.C.
Air Conditioning Fan	1	1 1/2	1	7.044	13	42	30	V.C.
Boat Winch S.B.	1	2	1	7.044	17	42	150	V.C.
Boat Winch Port	1	2	1	7.044	17	42	120	V.C.
Steam Tank Vent. Fan	1	3	1	7.044	25.8	42	50	V.C.
Steam Tank Vent. Fan	1	3	1	7.044	25.8	42	80	V.C.
Engine Room Fan	1	1 1/2	1	7.044	12.4	42	90	V.C.
Boat Winch S.B.	1	2	1	7.044	17	42	140	V.C.
Boat Winch Port	1	2	1	7.044	17	42	70	V.C.
Boat Winch	1	3	1	7.044	25.8	42	20	V.C.
Boat Winch	1	2	1	7.044	17	42	40	V.C.
Boat Winch	1	3	1	7.044	25.1	28	40	V.C.
Boat Winch	1	3	1	7.044	25.1	28	40	V.C.
Boat Winch	1	1 1/2	1	7.044	13.5	42	160	V.C.
Boat Winch	1	3	1	7.044	27	42	140	V.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.

John P. ...

Electrical Engineers.

Date *26.4.1946*

COMPASSES.

Minimum distance between electric generators ~~and motors~~ and standard compass *2 1/2 feet*

Minimum distance between electric generators ~~and motors~~ and steering compass *2 1/2 feet*

The nearest cables to the compasses are as follows:—

A cable carrying *0.14* Amperes ~~on the~~ *7* feet from steering compass.

A cable carrying *0.14* Amperes ~~on the~~ *7* feet from standard compass ~~on the~~ *7* feet from steering compass.

A cable carrying *0.14* Amperes ~~on the~~ *7* feet from standard compass ~~on the~~ *7* 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 *1 1/2* degrees on *every* course in the case of the

standard compass, and *1 1/2* degrees on *every* course in the case of the steering compass.

WILLIAM DOXFORD & SONS, Limited.

Builder's Signature.

Date

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 *28/2/1946 + 12/3/1946*

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 has been installed under special survey in accordance with the approved plans and with the Surveyor's terms. The materials used are of good quality and the workmanship is good. On completion the equipment was operated under working conditions and found satisfactory and the insulation resistance of all circuits was measured and found good. This equipment is in my opinion suitable for a stressed vessel intended to carry oil having a flash point of less than 150°F.

Noted

26/4/46

Total Capacity of Generators *60* Kilowatts

+30 fitted 10.46 = 90 kW

The amount of Fee ... £ *28 : 10* : *28/10/46*

Travelling Expenses (if any) £ : : When received. *19.10*

Committee's Minute

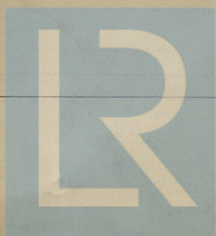
FRI. 10 MAY 1946

Assigned

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