

Rpt. 13.

No. 14660

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

29 NOV 1948

Date of writing Report 12-11-1948 When handed in at Local Office 22-11-1948 Port of BELFAST

No. in Survey held at BELFAST Date, First Survey 5 Aug '48 Last Survey 9 Nov 1948
Reg. Book. (Number of Visits.....)

90216 on the M.V. "BRITISH STRENGTH" Tons { Gross 8579
Net 4935

Built at BELFAST By whom built HARLAND & WOLFF LTD. Yard No. 1365 When built 1948

Owners BRITISH TANKER COY Port belonging to LONDON

Electric Light Installation fitted by HARLAND & WOLFF LTD. Contract No. 1365 When fitted 1948

Is the Vessel fitted for carrying Petroleum in bulk YES

System of Distribution TWO WIRE

Pressure of supply for Lighting 110 volts, Heating — volts, Power 110 volts.

Direct or Alternating Current, Lighting DIRECT Power DIRECT

If alternating current system, state frequency of periods per second —

Has the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on or off YES

Generators, do they comply with the requirements regarding temperature rise YES, are they compound wound YES

are they over compounded 5 per cent. YES, if not compound wound state distance between each generator —

Where more than one generator is fitted are they arranged to run in parallel YES, is an adjustable regulating resistance fitted in series with each shunt field YES

Have certificates of test results for machines under 100 kw. been submitted and approved YES Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing NONE FITTED

Have certificates for generators under 100 kw. been supplied and approved YES

Are all terminals accessible, clearly marked, and furnished with sockets YES, are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched YES

Are the lubricating arrangements of the generators as per Rule YES

Position of Generators MOTOR ROOM TANK TOP STARBOARD, is the ventilation in way of the generators satisfactory YES are they clear of all inflammable material YES if situated near unprotected

woodwork or other combustible material, state distance of same horizontally from or vertically above the generators — and —

are the generators protected from mechanical injury and damage from water, steam or oil YES, are their axes of rotation fore and aft YES

Earthing, are the bedplates and frames of the generating plant efficiently earthed YES are the prime movers and their respective generators in metallic contact YES

Main Switch Boards, where placed MOTOR ROOM PLATFORM STARBOARD

If the generators and main switchboard are not placed in the same compartment, is each generator provided with a fuse on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard —

Switchboards, are they placed in accessible positions, free from inflammable gases and acid fumes YES, are they protected from mechanical injury and damage from water, steam or oil YES, if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the switchboards — and —, are they constructed wholly of durable, non-ignitable non-absorbent materials YES, is all insulation of high dielectric strength and of permanently high insulation resistance YES

is it of an approved type YES, if semi-insulating material is used, are all conducting parts insulated from the slab with mica or micaite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework YES, is the non-hygroscopic insulating material of an approved type YES, and is the frame effectively earthed YES

Are the fittings as per Rule regarding: — spacing or shielding of live parts YES, accessibility of all parts YES, absence of fuses on back of board YES, temperature rise of omnibus bars YES, individual fuses to voltmeter, pilot or earth lamp YES, are moving parts of switches alive in the "off" position No are all screws and nuts securing connections effectively locked YES are any fuses fitted on the live side of switches No

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches

700 amp. D.P. Circuit Breaker with oil, T/L & Reverse current protection & equaliser switch. D.P. Switches & Fuses.

Are turbine driven generators fitted with emergency trip switch as per rule — Are cupboards or compartments containing switchboards composed of fire-resisting material or lined with approved material YES Instruments on main switchboard 3 ammeters 2

voltmeters — synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection YES

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system

2 lamp system with 2 S.P. switches and fuses Switches, Circuit Breakers and Fusible Cut-outs.

do these comply with the requirements of the Rules YES are the fusible cutouts of an approved type YES have the reversed

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Lloyd's Register
Foundation

Rpt. 9a.

MISCELLANEOUS

Port of

Continuation of Report No.

dated

on the

DESCRIPTION	No. OF MOTORS	CONDUCTORS No. PER POLE	Total Nominal Area per pole sq. inches	COMPOSITION OF STRAND No. DIAMETER	TOTAL MAXIMUM CURRENT AMPERES IN CIRCUIT	MAXIMUM RULE	Approx. length Lead & return in feet	INSULATED WITH	HOW PROTECTED
PANTRY EX. FAN	1	1	0.002	3 .029	1.85 ✓	5	200	V.C.	L.S.A.B.
GALLEY EX. FAN STAR	1	1	0.002	3 .029	1.75 ✓	5	150		"
PORT.	1	1	0.002	3 .029	1.75 ✓	5	108		"
REFRIG. M/CY EX. FAN.	1	1	0.002	3 .029	2.7 ✓	5	180		L.S.A.B.
HOSPITAL AIR FAN PLANT	1	1	0.002	3 .029	3.2 ✓	5	80		L.S.A.B.
CONDITIONING PLANT	1	1	0.007	7 .036	14.0 ✓	28	60		"
REFRIG. CABINET.	1	1	0.003	3 .036	4.0 ✓	10	84		"
CENTRIFUGAL OIL PURIFIER	1	1	0.04	19 .052	61.5 ✓	104	82		L.S.A.B.
CENTRIFUGAL OIL CALORIFIER	1	1	0.04	19 .052	61.5 ✓	104	82		"
LUB. OIL PURIFIER	1	1	0.01	7 .044	25.1 ✓	42	150		"
ENGINE RM. CRANE	1	1	0.01	7 .044	26.5 ✓	42	100		"
GRINDER	1	1	0.01	7 .044	17.5 ✓	42	100		"
REFRIG. PLANT.	4	1	0.0225	7 .064	45 ✓	75	320		L.S.A.B.
GALLEY RANGE COMP.	1	1	0.002	3 .029	2.6 ✓	5	100		L.S.A.B.
BOAT WINCH PORT. MID	1	1	0.0225	7 .064	65 ✓	75	116		L.S.A.B.
" " STAR "	1	1	0.0225	7 .064	65 ✓	75	160		"
" " PORT. AFT.	1	1	0.0225	7 .064	65 ✓	75	180		"
" " STAR AFT.	1	1	0.0225	7 .064	65 ✓	75	110		L.S.A.B.
FUEL OIL PURIFIER	1	1	0.0225	7 .064	25.1 ✓	42	90		"
PURIFIED FUEL OIL	1	1	0.003	3 .036	4.0 ✓	10	80		L.S.A.B.

current protection devices been tested under working conditions. YES are all fuses labelled as per rule YES

Joint Boxes, Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule YES

Cables: Single, twin, concentric, or multicore. Single are the cables insulated and protected as per Tables IV, V, X, XI, XII or XIII of the Rules YES

If the cables are insulated otherwise than as per Rule, are they of an approved type. — **Fall of Pressure,** state maximum between bus bars and any point of the installation under maximum load 4-7 Volts **Cable Sockets,** are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets YES **Paper Insulated and Varnished Cambric Insulated Cables,**

If conductors are paper or varnished cambric insulated, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound YES, or waterproof insulating tape. YES **Cable Runs,** are the cables fixed as far as possible in accessible positions not exposed to drip or accumulation of water or oil, or to high temperature from boilers, steam pipes, uptakes or other hot objects, or to avoidable 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, bathrooms and lavatories lead covered or run in conduit LEAD COVERED

Support and Protection of Cables, state how the cables are supported and protected L.S.A.B. Cable clipped to steel plating

If cables are run in wood casings, are the casings and caps secured by screws —, are the cap screws of brass —, are the cables run in separate grooves —. If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VIII YES

Refrigerated Chambers, are the cables and fittings in accordance with the special requirements YES

Joints in Cables, state if any, and how made, insulated, and protected —

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands YES **Bushes in Beams and Non-watertight Partitions,** where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed YES state the material of which the bushes are made LEAD

Earthing Connections, state what earthing connections are fitted and their respective sectional areas —, are their connections made as per Rule —

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule YES **Emergency Supply,** state position and method of control of the emergency supply and how the generator is driven —

Navigation Lamps, are these separately wired YES, controlled by separate switch and separate fuses YES, are the fuses double pole YES, are the switches and fuses grouped in a position accessible only to the officers on watch YES

has each navigation lamp an automatic indicator as per Rule YES **Secondary Batteries,** are they constructed and fitted as per Rule YES are they ventilated as per Rule YES

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight YES are any fittings placed in spaces in which goods are liable to be stacked in close proximity to them; if so, how are they protected CAST IRON FITTING

WITH THICK GLASS FRONTPIECE

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected FLAME PROOF

FITTINGS WHERE APPLICABLE, how are the cables led L.S.A.B. CABLES CLIPPED TO BEAMS

where are the controlling switches situated NON - DANGEROUS POSITIONS

are all fittings suitably ventilated YES, are all switches and lampholders constructed wholly of non-ignitable, non-absorbent materials YES

Heating and Cooking Appliances, are they constructed and fitted as per Rule —, are air heaters constructed and fitted as per Rule YES

Searchlight Lamps, No. of 1 whether fixed or portable PORTABLE, are their fittings as per Rule YES

Motors, are their working parts readily accessible YES, are the coils self-contained and readily removable for replacement YES

are the brushes, brush holders, terminals and lubricating arrangements as per Rule YES, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material YES, are they protected from mechanical injury and damage from water, steam or oil YES are their axes of rotation fore and aft YES, if situated near unprotected woodwork or other combustible material, are the motors of the totally enclosed, pipe ventilated, forced draught, drip or flame proof type —

if not of this type, state distance of the combustible material horizontally or vertically above the motors — and —

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing — have certificates for all motors for essential services been supplied and approved YES

Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule YES **Lightning Conductors,** where lightning conductors are required, are these fitted as per Rule YES

Ships carrying Oil having a Flash Point less than 150° F. Have the special requirements of the Rules been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings YES are all fuses of the fitted 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 approved for use in dangerous spaces YES

Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule YES are they suitably stored in dry situations 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	75	110	682	500	STEAM DRIVEN		
AUXILIARY ...								
EMERGENCY ...								
ROTARY TRANSFORMER								

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	Circuit.	Rule.			
MAIN GENERATOR ...	1	1.5	91	.103	682 ✓	738	No. 1 120 No. 2 120	V.C.	L.S.A.B.
EQUALISER CONNECTIONS ...	1	0.4	61	.093	-	464	No. 1 50 No. 2 60	"	"
AUXILIARY GENERATOR ...									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER (MOTOR GENERATOR)									
ENGINE ROOM ...	1	0.0225	7	.064	60 ✓	75	120	"	"
" " M1	1	0.0225	7	.064	55 ✓	75	120	"	"
" " M2	1	0.01	7	.044	30 ✓	42	120	"	"
" " 11	1	0.01	7	.044	30 ✓	42	120	"	"
" " 12	1	0.01	7	.044	30 ✓	42	120	"	"
AUXILIARY SWITCHBOARDS									
MIDSHIP RADAR & WIRELESS	1	0.003	3	.036	90 ✓	104	520	"	"
POWER & LIGHTING	1	0.04	19	.052	80 ✓	104	520	"	"
HANDLAMP CHARGING PANEL	1	0.04	19	.052	80 ✓	104	520	"	"
SECTION BOX No. 1	1	0.04	19	.052	80 ✓	104	520	"	"
BOAT WINCH PANEL	1	0.04	19	.052	80 ✓	104	520	"	"
SECTION BOX No. 2	1	0.04	19	.052	80 ✓	104	520	"	"
EM. Ltg. BATTERY CHG. PANEL	1	0.0045	7	.029	8 ✓	15	40	"	"
SW. & FUSE BOXES No. 1	1	0.01	7	.044	20 ✓	42	170	"	"
" " No. 2	1	0.01	7	.044	20 ✓	42	170	"	"
" " No. 3	1	0.01	7	.044	20 ✓	42	170	"	"
" " No. 4	1	0.01	7	.044	20 ✓	42	170	"	"
" " No. 5	1	0.01	7	.044	20 ✓	42	170	"	"
" " No. 6	1	0.01	7	.044	20 ✓	42	170	"	"
" " No. 7	1	0.01	7	.044	20 ✓	42	170	"	"
" " No. 8	1	0.01	7	.044	20 ✓	42	170	"	"
" " No. 9	1	0.01	7	.044	20 ✓	42	170	"	"
" " No. 10	1	0.01	7	.044	20 ✓	42	170	"	"
WIRELESS ...	1	0.0225	7	.064	60 ✓	75	200	"	"
SEARCHLIGHT ...	1	0.04	19	.052	80 ✓	104	520	"	"
MASTHEAD LIGHT MAIN MAST	1	0.002	3	.029	0.2 ✓	5	600	"	"
FOREMAST	1	0.002	3	.029	0.2 ✓	5	400	"	"
SIDE LIGHTS ...	1	0.002	3	.029	0.2 ✓	5	60	"	"
COMPASS LIGHTS ...	1	0.002	3	.029	0.2 ✓	5	20	"	"
POOP LIGHTS ...									
CARGO LIGHTS ...									
HEATERS ...									

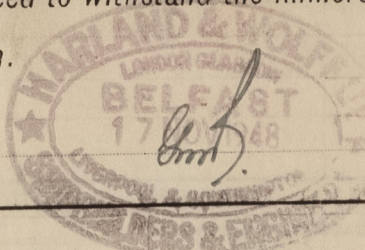
MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP ...										
MAIN BILGE LINE PUMPS ...										
GENERAL SERVICE PUMP ...										
EMERGENCY BILGE PUMP ...										
SANITARY PUMP ...										
CIRC. SEA WATER PUMPS ...	2	1	0.003	3	.036	9.8 ✓	10	56	Rubber	L.S.A.B.
CIRC. FRESH WATER PUMPS...										
AIR COMPRESSOR ...										
FRESH WATER PUMP ...	1	1	0.04	19	.052	80 ✓	104	60	Rubber	L.S.A.B.
ENGINE TURNING GEAR...										
ENGINE REVERSING GEAR ...										
LUBRICATING OIL PUMPS ...										
OIL FUEL TRANSFER PUMP ...										
WINDLASS ...										
WINCHES, FORWARD ...										
WINCHES, AFT ...										
STEERING GEAR—										
(a) MOTOR GENERATOR ...										
(b) MAIN MOTOR ...										
WORKSHOP MOTOR LATHE	1	1	0.01	7	.044	25.8 ✓	42	64	Rubber	L.S.A.B.
VENTILATING FANS										
No. 1	1	1	0.007	7	.036	17.5 ✓	28	90	Rubber	L.S.A.B.
No. 2	1	1	0.007	7	.036	17.5 ✓	28	90	"	"
No. 3	1	1	0.01	7	.044	24 ✓	42	220	"	L.S.A.B.
No. 4	1	1	0.01	7	.044	24 ✓	42	226	"	"
ENGINE RM. SUPPLY FAN	1	1	0.0045	7	.029	12.4 ✓	15	140	"	"
STORES FAN	1	1	0.003	3	.036	5.4 ✓	10	90	"	L.S.A.B.

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The Electrical Equipment is installed in accordance with the approved plans.
All Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.
The foregoing is a correct description.



Electrical Engineers.

Date 17. 11. 48.

COMPASSES.

Minimum distance between electric generators or motors and standard compass

20 feet from w/r office cabin fan.

Minimum distance between electric generators or motors and steering compass

22 feet from w/r office cabin fan.

The nearest cables to the compasses are as follows:—

A cable carrying 0.2 Ampères ON feet from standard compass 10 feet from steering compass.

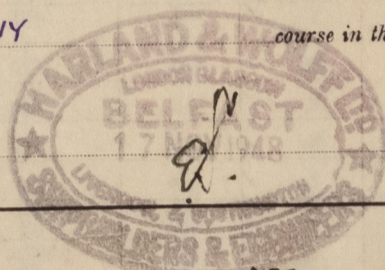
A cable carrying 0.2 Ampères 10 feet from standard compass ON feet from steering compass.

A cable carrying 25 Ampères 12 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.



Builder's Signature.

Date

Is this installation a duplicate of a previous case YES. If so, state name of vessel "BRITISH SECURITY"

General Remarks (State quality of workmanship, opinions as to class, &c.) The electrical equipment of this vessel has been fitted on board under special survey, tested under full working conditions and found satisfactory. Materials and workmanship are good.

Noted *ent* 15/12/48

Total Capacity of Generators 150 Kilowatts.

The amount of Fee ... £ 62 : 10 : 26/11/48
When applied for,
Travelling Expenses (if any) £ — : — :
When received.

R. I. Hurchison.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute.

FRI. 17 DEC 1948

Assigned

See R.C. mch. - opt.



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