

RETAIN

Rpt. 13.

No. 75999

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) WED. 18 OCT. 1922
Received at London Office

Date of writing Report 9/10/1922 When handed in at Local Office 16.10.22 Port of NEWCASTLE-ON-TYNE

No. in Survey held at Newcastle Date, First Survey 14/8/22 Last Survey 4/10/1922
Reg. Book. (Number of Visits.....6.....)

55271 on the S.S. British Gunner Tons { Gross 7000
Net

Built at Newcastle By whom built Swan Hunter & Wigham Rich^d Yard No. 1130 When built 1922

Owners British Tanker Co Ltd Port belonging to London

Electric Light Installation fitted by Swan Hunter & Wigham Richardson^{ts} Contract No. 1130 When fitted 1922

System of Distribution Double wire

Pressure of supply for Lighting 110 volts, Heating — volts, Power 220 volts.

Direct or Alternating Current, Lighting Direct Power Alternating

If alternating current system, state frequency of periods per second 50.

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 overload 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 no ✓, is an adjustable regulating resistance fitted in series with each shunt field yes ✓

Are all terminals accessible and clearly marked yes ✓, are they so spaced or shielded that they cannot be accidentally earthed, or short circuited yes ✓

Are the lubricating arrangements of the generators as per Rule yes ✓

Position of Generators Dynamo flat in engine room port side, Alternator for power on flat above port side ✓

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 axis 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 Engine room port side dynamo flat for lighting, stb side + on the wardship ✓

at end of eng room for power ✓ 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, incombustible non-absorbent materials yes ✓, is all insulation of high dielectric strength and of permanently high insulation resistance yes ✓

if semi-insulating material is used, are all conducting parts connected to one pole insulated from the slab with mica or micanite and the slab similarly insulated from its framework yes ✓, and is the frame effectively earthed yes ✓

Are the following fittings as per Rule, viz.: — spacing or shielding of live parts

yes ✓, accessibility of all parts. yes ✓, absence of fuses on back of board. yes ✓, proportion of omnibus bars. yes ✓

individual fuses to voltmeter, pilot or earth lamp. yes ✓, connections of switches. yes ✓

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches For lighting double pole

switches + fuses for each generator + outgoing circuit. For power 3 pole switches fitted with overload trip + fuses on each pole, each outgoing circuit fitted with 3 pole switch + fuses.

Instruments on main switchboard 1 ✓ ammeters 1 ✓ voltmeters 1 ✓ synchronising device for paralleling purposes.

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system earth lamps connected to each through switch and fuse on each pole.

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules. yes ✓

Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule. distribution + section

boxes are cast iron fitted with "Lec" type fuses.

RETAIN

3-core P.I. +
Insulation of Cables, state type of cables, single or twin single are the cables insulated and protected as per Tables III or IV of the Rules yes
Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 4.0 volts
Cable Sockets and other connections, are the ends of all cables having a sectional area of 0.007 square inch and above provided with soldering sockets yes
Paper Insulated Cables. If cables are paper covered, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound 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 tram lighting cables run in steel troughing filled with bitumen along fore & aft gangway. P.I. Cables clipped to brass plating in engine room.
Support and Protection of Cables, state how the cables are supported and protected Troughing supported by gangway, lead covered armoured & braided cables clipped by means of galvanised iron clips
 If cables are run in wood casings, are the casings and caps secured by screws yes, are the cap screws of brass yes, are the cables run in separate grooves yes. If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VI yes
Refrigerated Chambers, if lights are fitted, are the cables and fittings in accordance with the special requirements none made
Joints in Cables, state if any, and how made, insulated, and protected none made
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 Positions, 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 yes, are their connections made as per Rule yes
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 none fitted
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, are separate screens provided for the use of oil and electric side lights yes, are separate oil lanterns provided for the mast head lights and side lights 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 no, are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected yes, fittings consist of about glass bowl, lamp can only be removed from outside in gas tight steel tubing., how are the cables led where are the controlling switches situated under bridge deck
Searchlight Lamps, No. of —, whether fixed or portable —, are their fittings as per Rule —
Arc Lamps, other than searchlight lamps, No. of —, are their live parts insulated from the frame or case —, are their fittings as per Rule —
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 axis 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 —
Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed as per Rule yes
Lightning Conductors, where lightning conductors are required, are these fitted as per Rule yes on main fore mast
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
 If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office 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	120 KVA.	220	440	1000	Katakam steam gas engine	—	
AUXILIARY	1	10	110	92	350	Single cylinder steam engine	—	
EMERGENCY								
ROTARY LIGHTING TRANSFORMER	1	10	110	91		A.C. motor		

LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR	3	.3024	37	.103	440	75	paper	lead covered. A.C. braided
	AUXILIARY GENERATOR	2	.07592	19	.072	92	60	rubber	do
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER	2	.07592	19	.072	92	40	rubber	do
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM								
	BOILER ROOM	2	.01462	7	.052	17	170	do	do
	Mast, forward accommodation	2	.1168	37	.064	50	660	do	do
	Aft accommodation	2	.02214	7	.064	24	200	do	do
	WIRELESS	2	.02214	7	.064	15	680	do	do
	SEARCHLIGHT								
	MASTHEAD LIGHT	2	.00194	3	.029	1.12	430	do	do
	SIDE LIGHTS	2	.00194	3	.029	1.12	60	do	do
	COMPASS LIGHTS	2	.00194	3	.029	1.12	80	do	do
	MAIN LIGHTS	2	.00194	3	.029	1.12	700	do	do
	CARGO LIGHTS	2	.003	70	.0476	1.6	300	do	Cab type flexible
	ARC LAMPS								
	HEATERS								

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP								
	MAIN BILGE LINE PUMPS								
	GENERAL SERVICE PUMP								
	EMERGENCY BILGE PUMP								
	SANITARY PUMP								
	MAIN CIRC. SEA WATER PUMPS	2	.1009	19	.083	125	81	paper	lead covered A.C. braided
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR								
	FRESH WATER PUMP								
	ENGINE TURNING GEAR								
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS	1	.00701	7	.036	20	84	do	do
	OIL FUEL TRANSFER PUMP								
	WINDLASS								
	WINCHES, FORWARD								
	WINCHES, AFT								
	STEERING GEAR								
	WORKSHOP MOTOR								
	VENTILATING FANS								
	DC Motors								
	Comberland system	2	.00455	7	.029	14	170	rubber	lead covered A.C. braided
	De Laval pump	1	.00455	7	.029	15	280	rubber	do
	forced draught fan	2	.02214	7	.064	70	78	paper	lead covered A.C. braided
	Main feed pump	1	.02214	7	.064	52	87	do	do
	Steering gear	1	.02214	7	.064	52	81	do	do
	A.C. motor for generator	1	.00701	7	.036	45	63	do	do
	Refrigerator	1	.00701	7	.036	30	30	do	do
	Oil cooler pump	1	.00701	7	.036	30	57	do	do
	Bilge pump	1	.00701	7	.036	15	69	do	do

All Conductors are of annealed copper conforming to British Standard Specification No. 7.

The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

FOR SWAN, HUNTER & WISHAM RICHARDSON, LTD.

FOR *Lighting Circuits* Electrical Engineers.

Date *11th Oct 1922*

COMPASSES.

G. J. Tweedy (for overhauls)
DIRECTOR.

Distance between electric generators or motors and standard compass

240

Distance between electric generators or motors and steering compass

30

The nearest cables to the compasses are as follows:—

A cable carrying *28* Ampères *1* feet from standard compass *1* feet from steering compass.

A cable carrying *5.0* Ampères *10* feet from standard compass *10* feet from steering compass.

A cable carrying *9.0* Ampères *10* feet from standard compass *10* 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 *all* course in the case of the standard

compass, and *nil* degrees on *all* course in the case of the steering compass.

FOR SWAN, HUNTER & WISHAM RICHARDSON, LTD.

G. J. Tweedy
DIRECTOR.

Builder's Signature.

Date *13 October 1922*

Is this installation a duplicate of a previous case *Yes* If so, state name of vessel *British Grenadier*

General Remarks (State quality of workmanship, opinions as to class, &c.)

The above installation is in accordance with the Society's Rules. The vessel is eligible in my opinion for notation Elec. Light, wireless

It is submitted that this vessel is eligible for THE RECORD.

Elec. Light.

A.A.B.

2/11/22

Total Capacity of Generators *202* Kilowatts

The amount of Fee ... £ *36 : 11* : *3/10/22*

When applied for, *3/10/22*

Travelling Expenses (if any): £ : : *5/10/22*

When received, *5/10/22*

W. T. Badger

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

Im. 3.22.—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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