

Rpt. 13.

No. 13651

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 3rd September 1924 When handed in at Local Office 6th September 1924 Port of Aberdeen Received at London Office.....

No. in Survey held at Aberdeen Date, First Survey 29 August Last Survey 5th September 1924
Reg. Book. (Number of Visits.....)

on the Screw Tug "CULEX" Tons { Gross 1044.46
Net 1.37

Built at Aberdeen By whom built Alex. Hall & Co. Ltd Yard No. 592 When built 1924

Owners Messrs Gaselee & Son Port belonging to London

Electric Light Installation fitted by Messrs Bell & Robertson Ltd Contract No. When fitted 1924

System of Distribution: Two wire direct distribution board system.

Pressure of supply for Lighting 100 volts, Heating volts, Power volts.

Direct or Alternating Current, Lighting Direct Power

alternating current system, state frequency of periods per second

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

Generators, do they comply with the requirements regarding overload yes, are they compound wound Shunt wound

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

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

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

Are the lubricating arrangements of the generators as per Rule Ring oiled

Position of Generators On starting platform in Engine room Starboard side

is the ventilation in way of the generators satisfactory yes, are they clear of all inflammable material yes

are they situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the generators None and None, are the generators protected from mechanical injury and damage from water, steam or oil yes

is 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 air respective generators in metallic contact yes

Main Switch Boards, where placed On bulkhead close to Dynamo

If the generators and main switchboard are not placed in the same compartment, is each generator provided with 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 None and None

are they constructed wholly of durable, incombustible non-absorbent materials yes. Slate., 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. Micanite bushes.

are all parts 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

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 Single pole

switch & double fuses for generator, and on each out going circuit.

Instruments on main switchboard one ammeters one voltmeters 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 pilot lamps

connected to earth 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 yes.

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. III

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 2 1/2 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 Yes

Support and Protection of Cables, state how the cables are supported and protected Fixed to bulkheads by means of galvanized iron saddles - screws all lead covered & armoured.

If cables are run in wood casings, are the casings and caps secured by screws none, 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

Joints in Cables, state if any, and how made, insulated, and protected no joints.

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands Yes Deck tubes & packing glands

Bushes in Beams and Non-watertight Positions, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed all armoured state the material of which the bushes are made Yes

Earthing Connections, state what earthing connections are fitted and their respective sectional areas Generators & Lubeboards
4 sq .029 Cable .0045"

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

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 No indicator are separate screens provided for the use of oil and electric side lights no, 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 none, 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, how are the cables led Yes, where are the controlling switches situated Yes

Searchlight Lamps, No. of none, whether fixed or portable Yes, are their fittings as per Rule Yes

Arc Lamps, other than searchlight lamps, No. of none, are their live parts insulated from the frame or case Yes, are their fittings as per Rule Yes

Motors, are their working parts readily accessible none, 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 Yes, if not of this type, state distance of the combustible material horizontally or vertically above the motors Yes and Yes

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 none

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 ...	one	one	100	10	700	Single cylinder steam		
AUXILIARY ...	✓					Engine open type		
EMERGENCY ...	✓					Rotary.		
ROTARY TRANSFORMER	✓							

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...	2	.0045	✓	7	.029	10	12	V.L.R. Steel Conduits
	AUXILIARY GENERATOR	✓							
	EMERGENCY GENERATOR	✓							
	ROTARY TRANSFORMER...	✓							
	AUXILIARY SWITCHBOARDS	✓							
	ENGINE ROOM 2. circuits	2	.002	✓	3	.029	8	33	V.L.R. Lead Cov. & Arm. &
	BOILER ROOM	2	.002	✓	3	.029	1.2	15	" " " " "
	Accommodation	2	.002	✓	3	.029	2.4	56	" " " " "
	Crew space	2	.002	✓	3	.029	1.2	48	" " " " "
	WIRELESS	✓							
	SEARCHLIGHT	✓							
	MASTHEAD LIGHT...	2	.002	✓	3	.029	1.0	80	V.L.R. Lead Cov. & Arm. &
	SIDE LIGHTS...	2	.002	✓	3	.029	1.5	129	V.L.R. " " " "
	COMPASS LIGHTS...	✓							
	POOP LIGHTS	✓							
	CARGO LIGHTS	✓							
	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								
	CIRC. SEA WATER PUMPS								
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR								
	FRESH WATER PUMP								
	ENGINE TURNING GEAR								
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS								
	OIL FUEL TRANSFER PUMP								
	WINDLASS								
	WINCHES, FORWARD								
	WINCHES, AFT								
	STEERING GEAR								
	WORKSHOP MOTOR								
	VENTILATING FANS								

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.

Bell & Robertson Ltd. Electrical Engineers.

Date *3/9/24*

COMPASSES.

Distance between electric generators or motors and standard compass
 Distance between electric generators or motors and steering compass *30 ft*
 The nearest cables to the compasses are as follows:—
 A cable carrying *8* Ampères feet from standard compass *8* feet from steering compass.
 A cable carrying Ampères feet from standard compass 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
 The maximum deviation due to electric currents was found to be degrees on 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 *no* If so, state name of vessel

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

The various parts of this installation were examined during the fitting on board. The materials & workmanship are good and on completion the light was tried at full power with satisfactory results.

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

JWD.
18/9/24

Total Capacity of Generators *one* Kilowatts

The amount of Fee ... *M/N* £ *5* :
 Travelling Expenses (if any) *attached*
 When applied for, *Sep 6th 1924*
 When received, *See debit book.*

C. E. Hilkey
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

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



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