

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 17 DEC 1924

Date of writing Report 19 When handed in at Local Office 15.12.24 Port of GLASGOW.

No. in Survey held at DUMBARTON. Date, First Survey 23.9.24 Last Survey 25.11.24
Reg. Book. (Number of Visits 4)

72891 on the S.S. 'INVERGLASS' Tons {Gross 6920.
Net

Built at DUMBARTON By whom built W^m DENNY & BROS. Yard No. 1123 When built 1924.

Owners ANDREW WEIR & CO. Port belonging to LONDON.

Electric Light Installation fitted by W^m DENNY BROS. Contract No. 1123 When fitted 11th Nov. 1924.

System of Distribution **TWO WIRE**

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

Direct or Alternating Current, Lighting **DIRECT** Power _____

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 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 **NO**

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 **ENGINE ROOM, 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 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 _____

Main Switch Boards, where placed **ENGINE ROOM NEAR GENERATOR.**

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 _____, 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

DOUBLE POLE SWITCHES & FUSES.

Instruments on main switchboard _____ ammeters _____ 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

EARTH LAMP 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 LC & A 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 2.6 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 PERFORATED STEEL TRAYS

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 NO JOINTS

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

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 YES

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 GAS TIGHT, are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected GAS TIGHT, how are the cables led GAS TIGHT CONDUIT

where are the controlling switches situated BRIDGE DECK (MID)

Searchlight Lamps, No. of 2, whether fixed or portable YES, are their fittings as per Rule YES

Arc Lamps, other than searchlight lamps, No. of 2, 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 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 YES, if not of this type, state distance of the combustible material horizontally or vertically above the motors 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 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

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.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ...	2	100	100	100	600	SINGLE CYLINDER.		
AUXILIARY ...								
EMERGENCY ...								
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. Amps.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR...		1 1/8	27	.072	100		ROBBER	LC & A.
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER...								
	AUXILIARY SWITCHBOARDS...								
G	ENGINE ROOM ...	2	.004	7	.036	20	10	"	" "
G	BOILER ROOM ...	2	.004	7	.036	10	100	"	" "
C	MID ACCOMMODATION	2	.022	7	.064	30	600	"	" "
D	FOR	2	.004	7	.036	10	600	"	" "
E	AFT	2	.004	7	.036	15	600	"	" "
K	PUMP ROOMS	2	.004	7	.036	15	300	"	" "
	WIRELESS ...	2	.01	7	.044	1 1/2 KW	150	"	" "
	SEARCHLIGHT ...	2	.003	3	.036	128	200	"	" "
	MASTHEAD LIGHT...	2	.003	3	.036	128	180	"	" "
	SIDE LIGHTS ...	2	.003	3	.036	15	180	"	" "
	COMPASS LIGHTS ...	2	.003	3	.036	15	180	"	" "
	POOP LIGHTS ...	2	.022	7	.064	20	100	"	" "
	CARGO LIGHTS ...	2	.022	7	.064	20	100	"	" "
	ARC LAMPS ...								
	HEATERS ...								

RETAIN

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amps.	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 ...								
H.	LATHE MOTOR	1		7	.036	1 1/2 HP.	50	ROBBER	LC & A
J.	DRILLING MOTOR	1		7	.036	2 1/2 HP.	50	"	"

RETAIN

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.

Wm Denny & Bros Ltd Dumbarton Electrical Engineers. Date 13-12-24

COMPASSES.

Distance between electric generators or motors and standard compass 100 ft
 Distance between electric generators or motors and steering compass 90 ft

The nearest cables to the compasses are as follows:—

A cable carrying 3 Ampères m feet from standard compass m feet from steering compass. *Electrically Lighted*
 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 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.

Wm Denny & Bros Ltd Director Builder's Signature. Date 12/12/24

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. This installation has been fitted on board under special survey. Tested under full working conditions and found satisfactory. The workmanship was found to be good and sound.)

It is submitted that this vessel is eligible for THE RECORD.
Elec. Light - J.S.K. 12/12/24

Total Capacity of Generators 20 Kilowatts

The amount of Fee ... £ 17. 10. 0 When applied for, 5/12/24
 Travelling Expenses (if any) £ : : See debit book. When received, 19

J. S. Rankin
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 16 DEC 1924

Assigned Elec. Light

A.L.S. 15/12/24

Im. 8.22.—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)