

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 18 APR 1928

Date of writing Report 19 When handed in at Local Office 27th Apr 28 Port of Belfast

No. in Survey held at Belfast Date, First Survey 3rd Feb. Last Survey 25th Apr 19 28
Reg. Book. (Number of Visits.....7.....)

on the STEEL TWIN SC HOIBERG Tons { Gross
Net

Built at Belfast By whom built Harland & Wolff Ltd. Yard No. 834 When built 1928

Owners Cargo Shipping Co. Ltd. (A. Weir & Co. Mgrs) Port belonging to London

Electric Light Installation fitted by Harland & Wolff Ltd. Contract No. 834 When fitted 1928

System of Distribution Two wire direct current to distribution boxes ✓

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 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 In Engine Room - aft

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 In Engine Room on aft Bulkhead

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 Each Generator is connected to separate sets of bus-bars with double poles, switches & fuses, and each outgoing circuit has double pole change over switches + double pole fuses

Instruments on main switchboard Two 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 Earth Indicator lamps with change over switch to each set of bus-bars

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 -

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 5 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 —

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 Cables are lead covered & passed through steel piping along decks

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 VI Yes

Refrigerated Chambers, if lights are fitted, are the cables and fittings in accordance with the special requirements —

Joints in Cables, state if any, and how made, insulated, and protected All joints are made in properly constructed Junction Boxes

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 all portable fittings, sockets etc, fitted other than to the steel work of the ship, are provided with an earthing connection equivalent to working conductor, 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 —

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 —, 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, special gas tight fittings, how are the cables led No main cables in this space Branch circuits in lead covered steel armoured & braided clipped to steel work of ship, where are the controlling switches situated Passage in forward accommodation

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 —

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	5	110	45.5	530	32HP SINGLE CYLINDER 5" DIA		
AUXILIARY ...						22" STROKE STEAM ENGINE		
EMERGENCY ...						AT 100 LBS " STEAM PRESSURE		
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...	2	0.0225	7	0.064	45.5	30	Rubber	Lead Covered
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER...								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM ...	2	0.003	3	0.036	12.0	78	Rubber	Lead covered
	BOILER ROOM ...								
	AFT ACCOMMODATION & GALLEY BLOWERS	2	0.007	7	0.036	20.5	104	Rubber	Lead covered
	NAVIGATION & WIRELESS	2	0.007	7	0.036	9.07	520	Rubber	Lead Covered
	FORWARD ACCOMMODATION & PUMP ROOM	2	0.007	7	0.036	13.3	448	Rubber	Lead Covered
	WIRELESS ...	2	0.007	7	0.036	2.27	496	Rubber	Lead covered
	SEARCHLIGHT ...	2	0.003	3	0.036	0.9	240	Rubber	Lead covered
	MASTHEAD LIGHT...	2	0.003	3	0.036	0.9	96		Armoured & braided
	SIDE LIGHTS ...	2	0.003	3	0.036	0.36	56		Lead Covered
	COMPASS LIGHTS ...	2	0.003	3	0.036	0.36	56		Lead Covered
	POOP LIGHTS ...								
	CARGO LIGHTS ...	3	0.0045	110	0.0076	1.36	200	Rubber	C.T.S.
	ARC LAMPS ...								
	HEATERS ...								

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 ...								
	Blower motor for Galley Range	2	0.003	3	0.036	5.6	75	Rubber	Lead Covered

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.



Electrical Engineers. Date 25-4-28.

COMPASSES.

Distance between electric generators or motors and standard compass 210 feet
 Distance between electric generators or motors and steering compass 205 feet

The nearest cables to the compasses are as follows:—

A cable carrying 9 Ampères 10 feet from standard compass 5 feet from steering compass.
 A cable carrying 14 Ampères 22 feet from standard compass 14 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 all course in the case of the standard compass, and Nil degrees on all course in the case of the steering compass.



Builder's Signature. Date 25-4-28.

Is this installation a duplicate of a previous case? Yes If so, state name of vessel Tia Juana

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

This work has been done under special survey. The materials and workmanship are sound and good. The installation has been fitted in accordance with the rules & tried out under full working conditions. The vessel is now eligible, in my opinion, for notation "Electric light"

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

[Signature]
9/5/28

Total Capacity of Generators 10 Kilowatts

The amount of Fee ... £ 10 : — : { When applied for, 27/4/28
 Travelling Expenses (if any) : £ : : { When received, 21/5/28

R. Lee Amers
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned *Elec. light*

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



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