

REPORT ON ELECTRIC LIGHTING INSTALLATION.

No. 8385

Port of *Belfast*Date of First Survey *30 April 1920*Date of Last Survey *14 August 1920*No. of Visits *16*No. in
Reg. Bookon the *Iron or Steel**T.S.S. Dareschire*Port belonging to *Liverpool*Built at *Belfast*By whom *Harland & Wolff Ltd*When built *1920*Owners *Bibby Bros*Owners' Address *Liverpool*Yard No. *578*Electric Light Installation fitted by *Harland & Wolff Ltd*When fitted *1920*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Three Generators each giving an output of 100 K.W. at 220 Volts when running at 300 R.P.M. driven by three, four stroke, single acting, three cylinder diesel engines. Cylinders 325 M.M. diam. x 350 M.M. stroke

Capacity of Dynamos *1362*Amperes at *220*Volts, whether continuous or alternating current *continuous*Where is Dynamo fixed *Engine Room Port Side*Whether single or double wire system is used *double*Position of Main Switch Board *Engine Room, Aft end*

A.B.C.D.E.F.G.H.I.J.K.L.M.N.

Positions of auxiliary switch boards and numbers of switches on each *One board containing 12 switches in wheel house**Four boards each containing 6 switches in Engine Room*Are fuses fitted on main switch board to the cables of main circuit *yes*

and on each auxiliary switch board to the cables of auxiliary

circuits *yes*and at each position where a cable is branched or reduced in size *yes*and to each lamp circuit *yes*If vessel is wired on the double wire system are fuses fitted to both flow and return wires or cables of all circuits including lamp circuits *yes*Are the fuses of non-oxidizable metal *yes*and constructed to fuse at an excess of *100*

per cent over the normal current

Are fuses fitted in easily accessible positions *yes*Are the fuses of standard dimensions *yes*If wire fuses are used *yes*Are permanent instructions fitted on or near each switch board giving particulars of proper size of fuse for each circuit. *yes*Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases *yes*Total number of lights provided for *423**35*

arranged in the following groups:—

A General	173 lights each of	25	candle power requiring a total current of	24.9	Amperes
B Cargo	96 lights each of	16 & 25 of 2000	candle power requiring a total current of	46	Amperes
C Navigation	14 lights each of	25, 5 of 32 & 8 of 6	candle power requiring a total current of	8	Amperes
D Engine Room	21 lights each of	25, 30 of 16 & 2 of 600	candle power requiring a total current of	23.2	Amperes
E Searchlight	lights each of		candle power requiring a total current of	45	Amperes
2 Mast head light with	1 lamp each of	32	candle power requiring a total current of	1.2	Amperes
2 Side light with	1 lamp each of	32	candle power requiring a total current of	1.2	Amperes

12 Cargo lights of 64 & 4 of 2000 candle power, whether incandescent or arc lights *incandescent*If arc lights, what protection is provided against fire, sparks, &c. *no arc lamps — one searchlight fitted, protected by sheet iron & glass.*Where are the switches controlling the masthead and side lights placed *in wheel house*

DESCRIPTION OF CABLES.

Main cable carrying	225 Amperes, comprised of	37 wires, each	.103 inches diameter, .3 square inches total sectional area
Branch cables carrying	180 Amperes, comprised of	37 wires, each	.083 inches diameter, .2 square inches total sectional area
Branch cables carrying	9.3 Amperes, comprised of	7 wires, each	.036 inches diameter, .007 square inches total sectional area
Leads to lamps carrying	1.7 Amperes, comprised of	3 wires, each	.036 inches diameter, .003 square inches total sectional area
Cargo light cables carrying	2.4 Amperes, comprised of	110 wires, each	.0076 inches diameter, .0048 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Cables throughout are of 2500 megohm class & C.M.A. quality, insulated with pure rubber & vulcanized rubber & protected by lead covering & steel armour & braided overall except in cabins on Bridge & Boat Decks where cables are protected with lead covering only.

Joints in cables, how made, insulated, and protected *No joints*Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances *—* Are all joints in accessiblepositions, none being made in bunkers, cargo spaces, or spaces which may at any time be used for carrying cargo, stores, or baggage *—*Are there any joints in or branches from the cable leading from dynamo to main switch board *No*

How are the cables led through the ship, and how protected *clipped direct to bulkheads or beams & protected by lead covering or lead covering & steel armour & braided overall. In cargo spaces, cables are lead covered, armoured & braided and enclosed in S.I. troughing.*

DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible yes

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture Lead covered, served steel armoured & braided

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead covered, served, steel armoured & braided

What special protection has been provided for the cables near boiler casings Lead covered, served, steel armoured and braided

What special protection has been provided for the cables in engine room Lead covered, served, steel armoured and braided

How are cables carried through beams Bushed with lead through bulkheads, &c. in glands if watertight otherwise lead bushed

How are cables carried through decks in iron deck pipes bushed with fibre

Are any cables run through coal bunkers yes or cargo spaces yes or spaces which may be used for carrying cargo, stores, or baggage yes

If so, how are they protected Lead covered, served, steel armoured and braided and laid in strong iron troughing secured by chains

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage No

If so, how are the lamp fittings and cable terminals specially protected Lead covered

Where are the main switches and fuses for these lights fitted Lead covered

If in the spaces, how are they specially protected Lead covered

Are any switches or fuses fitted in bunkers Lead covered

Cargo light cables, whether portable or permanently fixed permanently

How fixed clipped direct to bulkhead on beams or in iron troughing

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel Lead covered

How are the returns from the lamps connected to the hull Lead covered

Are all the joints with the hull in accessible positions yes

Is the installation supplied with yes voltmeters yes and with yes amperemeters yes

fixed on main bulkhead

VESSELS BUILT FOR CARRYING PETROLEUM.

In vessels built for carrying petroleum, are all switches and fuses fitted in positions not liable to the accumulation of petroleum vapour or gas yes

Are any switches, fuses, or joints of cables fitted in the pump room or companion yes

How are the lamps specially protected in places liable to the accumulation of vapour or gas Lead covered

The copper used is guaranteed to have a conductivity of not less than that of the Engineering Standards Committee's standard, and the wires are protected by tinning from the sulphur compounds present in the insulating material.

Insulation of cables is guaranteed to have a resistance of not less than 2500 megohms per statute mile at 60° Fahrenheit after 24 hours' immersion in water, the test being made after one minute's electrification at not less than 500 volts and while the cable is still immersed.

The foregoing statements are a correct description of the Electric Light installation fitted by us on this vessel and we declare that it is at this date in good order and safe working condition.

S. Johnston



Electrical Engineers

Date 6/9/20

COMPASSES.

Distance between dynamo or electric motors and standard compass 80 ft to nearest dynamo & 58 feet to nearest motor

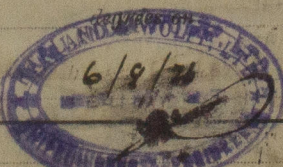
Distance between dynamo or electric motors and steering compass 80 ft to nearest dynamo & 36 ft to nearest motor

The nearest cables to the compasses are as follows:—

A cable carrying	5	Amperes	10	feet from standard compass	5	feet from steering compass
A cable carrying	22	Amperes	32	feet from standard compass	18	feet from steering compass
A cable carrying	40	Amperes	35	feet from standard compass	31	feet from steering compass

Have the compasses been adjusted with and without the electric installation at work at full power yes

The maximum deviation due to electric currents, etc., was found to be nil degrees on all course in the case of the standard compass and nil all course in the case of the steering compass.



Builder's Signature. Date 6/9/20

GENERAL REMARKS.

This installation is of good description through hulls and has been fitted in accordance with the Rules

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

Elec Lt. Rell 13/9/20

R. F. Devenish

Surveyor to Lloyd's Register of Shipping.

Committee's Minute



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THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN