

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 12901

Port of Aberdeen Date of First Survey 9th Nov 1921 Date of Last Survey 30 Nov 1921 No. of Visits 11+6=17
 No. in Reg. Book on the Iron or Steel S.S. "Iruco" No 459. Port belonging to Hull.
 Built at Aberdeen By whom J. Duchie Lorry S.B. Co When built 1921.
 Owners Messrs. Elder's & Wilson Fine Id. Owners' Address Hull.
 Yard No. 459. Electric Light Installation fitted by J. Holmes & Co, Newcastle. When fitted 1921.

DESCRIPTION OF DYNAMO, ENGINE, ETC.

One 6 1/2" x 5" open single cylinder engine by Robey & Co, Lincoln, coupled direct to one open, compound wound dynamo by J. Holmes & Co.

Capacity of Dynamo 60 Amperes at 100 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed Engine Room. Whether single or double wire system is used double.

Position of Main Switch Board Near dynamo. having switches to groups A.B.C.D. of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each 2 way 10 amp Section Box in Steering Gr. House, 3 way 5 amp fusebox in Saloon Pantry, 2 way 10 amp Section Box in Saloon Pantry, 6 way 5 amp fusebox in Saloon Pantry, 6 way 5 amp fusebox in Chart Rm, 2 way 10 amp Section Box in Eng's Mess Rm, 4 way 5 amp fusebox in Eng's Mess, 4 way 5 amp box in Foremen's Aft, 12 way 5 amp box in Engine Rm.

If fuses are fitted on main switch board to the cables of main circuit Yes. and on each auxiliary 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 all fuses fitted in easily accessible positions Yes. Are the fuses of standard dimensions Yes. If wire fuses are used 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 94-16 AP (including 25-30 watt metal fil.) arranged in the following groups:—

A	24 lights each of	16	candle power requiring a total current of	approx 13.4	Amperes
B	{ 18 1/2 lights each of	32	candle power requiring a total current of	" 12.3	Amperes
C	24 lights each of	16	candle power requiring a total current of	" 13.3	Amperes
D	24 lights each of	16	candle power requiring a total current of	" 13.4	Amperes
E	lights each of		candle power requiring a total current of		Amperes
2	Mast head light with 1 lamp each of	32	candle power requiring a total current of	" 2.24	Amperes
2	Side lights with 1 lamp each of	32	candle power requiring a total current of	" 2.24	Amperes
4	Cargo lights of	6 x 16	candle power, whether incandescent or arc lights	incandescent	

Included above.

If arc lights, what protection is provided against fire, sparks, &c.

Where are the switches controlling the masthead and side lights placed in Chart Room.

DESCRIPTION OF CABLES.

Main cable carrying	60 Amperes, comprised of	19 wires, each	.064 S.W.G. diameter,	.060 square inches total sectional area
Branch cables carrying	13.4 Amperes, comprised of	7 wires, each	.052 S.W.G. diameter,	.014 square inches total sectional area
Branch cables carrying	12.3 Amperes, comprised of	7 wires, each	.052 S.W.G. diameter,	.014 square inches total sectional area
Leads to lamps carrying	.56 Amperes, comprised of	3 wires, each	.029 S.W.G. diameter,	.002 square inches total sectional area
Cargo light cables carrying	3.36 Amperes, comprised of	3 wires, each	.036 S.W.G. diameter,	.003 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

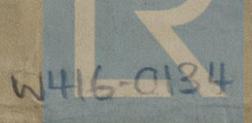
Conductors of high conductivity copper wire, insulated with pure & vulcanized India Rubber, taped, lead covered, taped, & armoured with galv. steel wires.

Joints in cables, how made, insulated, and protected None, looping-in system carried out.

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances Are all joints in accessible positions, 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 Cables, Saloon &c lead covered clipped up; Cargo Spaces & Engine & Boiler Rooms, Lead covered & armoured. Mast Head Lights, twin U.S.R. in galv. pipes.



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 & Armoured

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead Covered & Armoured

What special protection has been provided for the cables near boiler casings " " " "

What special protection has been provided for the cables in engine room " " " "

How are cables carried through beams Bushed with fibre. through bulkheads, &c. stuffing glands.

How are cables carried through decks in lead or iron deck tubes, flanged & made watertight.

Are any cables run through coal bunkers no 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 & Armoured.

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

Where are the main switches and fuses for these lights fitted

If in the spaces, how are they specially protected

Are any switches or fuses fitted in bunkers No.

Cargo light cables, whether portable or permanently fixed Portable. How fixed socket connection.

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

How are the returns from the lamps connected to the hull

Are all the joints with the hull in accessible positions

Is the installation supplied with a voltmeter Yes. and with an amperemeter Yes. fixed on main board.

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

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

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

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 600 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.

J. J. J. Co Electrical Engineers Date December 3rd 1921

COMPASSES.

Distance between dynamo or electric motors and standard compass Approx. 78 ft.

Distance between dynamo or electric motors and steering compass " 80 ft.

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	inside	feet from standard compass	inside	feet from steering compass
<u>.56</u>					
A cable carrying <u>approx 7.56</u>	Amperes	<u>approx 6</u>	feet from standard compass	<u>approx 15.</u>	feet from steering compass
A cable carrying <u>" 12.3</u>	Amperes	<u>" 18</u>	feet from standard compass	<u>" 10</u>	feet from steering compass

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

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

THE JOHN DUTHIE TORRY SHIPBUILDING COY hp W Builder's Signature. Date

GENERAL REMARKS.

The various parts of the installation have been examined, during the fitting on board. The materials & workmanship are good. The installation was tried under full load & found good & efficient.

Fee £ 6-0-0 1/3 fee applied for 15/2/22 abn. (£ 2/- due Hull) J. J. J. Co. Robert Rae Elec. Legals. Surveyor to Lloyd's Register of Shipping. 27/3/22

Committee's Minute

FRI 10 MAR 1922



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