

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 74836

Port of NEWCASTLE-ON-TYNE Date of First Survey 2/5/21 Date of Last Survey 21/9/21 No. of Visits 6
 No. in 12407 on the Iron or Steel City of Paris Port belonging to Glasgow
 Reg. Book 12407 Built at Newcastle-on-Tyne By whom Swan Hunter & Wigham Richardson When built 1921
 Owners Ellerman City Line Owners' Address _____
 Yard No. 1129 Electric Light Installation fitted by Swan Hunter & Wigham Richardson When fitted 1921

DESCRIPTION OF DYNAMO, ENGINE, ETC.

1-40KW Generating plant, Vertical compound engine coupled direct to a multipolar compound wound dynamo (Clarke Chapman & Co.)
 1-10KW plant as above + 1-21KW Paraffin set 36 BHP Gardner Oil engine coupled direct to a compound multipolar dynamo.

Capacity of Dynamos 360, 1-90, 1-190 Amperes at 110 Volts, whether continuous or alternating current Continuous.

Where is Dynamo fixed 40+10KW in engine room, 21KW in emergency dynamo room Whether single or double wire system is used double

Position of Main Switch Board Engine Room + emergency room having switches to groups 14 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each 5-Section boxes at frame 67 Shelter deck midships

1 Section box @ frame 110 upper deck, 1 Section box @ frame 103 upper deck for laundry, 1 section box @ frame 35 upper deck port, 1-5B @ frame 15 upper deck port, 1-harbour 5 Bin chart house, 1-section box in emergency dynamo room.

If fuses are 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 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 683+184 lamps arranged in the following groups :-

A	Emergency light ^s	298	lights each of <u>4-60W, 9-100W, 4-100W, 5-32cp</u>	arranged in 4 circuits	candle power requiring a total current of	139.94	Amperes
B	1st acc ⁿ forw ^d	103	lights each of <u>2-40W, 16-60W, 2-40W, 59-30W, 1-16cp</u>		candle power requiring a total current of	27.66	Amperes
C	" " Midship	168	lights each of <u>67-20W, 101-30W lamps</u>		candle power requiring a total current of	38.7	Amperes
D	2 nd " " aft	80	lights each of <u>59-30W, 21-20W, 6-30W</u>		candle power requiring a total current of	21.9	Amperes
E	Cargo	31	lights each of <u>24-40W, 6-30W, 1-16</u>		candle power requiring a total current of	11.96	Amperes
F	Wireless					15.0	
	2 Mast head light with	1	lamps each of	32	candle power requiring a total current of	2.24	Amperes
	2 Side light with	1	lamps each of	32	candle power requiring a total current of	2.24	Amperes

6-4 light, 2-1000W Cargo lights of 320 + 2000 candle power, whether incandescent or arc lights incandescent

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

Where are the switches controlling the masthead and side lights placed Chart room

DESCRIPTION OF CABLES.

Main cable carrying 360 Amperes, comprised of 91 wires, each .093 S.W.G. diameter, .6 square inches total sectional area

Branch cables carrying 38.7 Amperes, comprised of 7 wires, each .064 S.W.G. diameter, .0325 square inches total sectional area

Branch cables carrying 11.96 Amperes, comprised of 7 wires, each .029 S.W.G. diameter, .0045 square inches total sectional area

Leads to lamps carrying 2 Amperes, comprised of 1 wires, each .044 S.W.G. diameter, .0015 square inches total sectional area

Cargo light cables carrying 3 Amperes, comprised of 70 wires, each .0076 S.W.G. diameter, .003 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Lead covered cable clipped to wood bulkhead or to deck throughout accommodation
V.I.R. cable run in wood casing in passages for main fuse extension box feeds, bells etc,
lead covered armoured + braided cable in engine + boiler rooms

Joints in cables, how made, insulated, and protected none made

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 lead covered and V.I.R. in wood casing.

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 conduit

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat lead covered cable

What special protection has been provided for the cables near boiler casings lead covered armoured braided cable

What special protection has been provided for the cables in engine room lead covered armoured + braided cable

How are cables carried through beams through holes bushed with lead through bulkheads, &c. W.T. Bulkhead glands

How are cables carried through decks watertight deck tubes

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 conduit piping

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 flexible from watertight box How fixed clipped to bulkhead

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 switchboard

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 — 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.

SWAN, HUNTER, & WIGHAM RICHARDSON, LTD.

Electrical Engineers

Date 19th Oct 1921

COMPASSES.

Distance between dynamo or electric motors and standard compass 170 feet

Distance between dynamo or electric motors and steering compass 170 feet

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	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.

FOR SWAN, HUNTER, & WIGHAM RICHARDSON, LTD.

Builder's Signature.

Date 19th Oct 1921

GENERAL REMARKS.

The above installation was incomplete when the vessel left the Type. This form has been completed as far as possible. The installation is in accordance with the Society's Rules.

It is admitted that this vessel is eligible for THE RECORD. Elec. Light

See Nuv. letter 23/2/22. 24

See 29.12.0 applied for 11.10.21

25/2/22.

W.T. Sadye.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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