

F	Cargo.	20	lights	each of 16 c.p. + 2 lights each of 1000 c.p. requiring a total current of 22 amps.
G	Machinery Port.	{ ¹² 7	" " " 27 " + 1 "	600 " " " " 10.8 "
H	" Star.	{ ¹³ 4	" " " 27 " + 1 "	600 " " " " 9.3 "
I	Lathe.			" " " " 12.0 "
J	Drilling machine.			" " " " 20.0 "
K	Pump Rooms and Tunnel.	12	" " " 27 " + 4 "	600 " " " " 15.6 "

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WED. APR. 30 1924

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 9101

Port of *London* Date of First Survey *Nov 16 1923* Date of Last Survey *Apr 17 1924* No. of Visits *8*
 No. in Reg. Book *on the Iron or Steel* *125* Port belonging to *Harland & Wolff Ltd* When built *1924*
 Built at *Belfast* By whom *managers* *A Weir & Coy* Owners' Address *Harland & Wolff Ltd*
 Owners *British Mexican Petroleum Coy* When fitted *1924*
 Yard No. *609* Electric Light Installation fitted by *Harland & Wolff Ltd*

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two single cylinder 8" diameter x 3" stroke forced lubrication Engines each direct coupled to the 12 1/2 K.W. Dynamo running at a speed of 600 R.P.M.
 Capacity of Dynamo *125* Amperes at *100* Volts, whether continuous or alternating current *Continuous*.

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

Position of Main Switch Board *in Engine Room* having switches to groups *A.B.C.D.E.F.G.H.I.J.K* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *Three in Engine Room each with 6 switches and two in wheelhouse, one with 5 switches and the other with 9 switches.*

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 *236* arranged in the following groups:—
 A Navigation. *8 lights each of 6 c.p. { 5 lights each of 8 candle power requiring a total current of 16 Amperes*
5 lights each of 32 c.p. { 4 " " " 16 candle power requiring a total current of 15 Amperes
 B Wireless. *lights each of 10 1/2" Cabin Lamp* *candle power requiring a total current of 27.2 Amperes*
 C Lighting Amidships. *60 lights each of 27 c.p. + 7 lights each of 16 candle power requiring a total current of 4.5 Amperes*
 D " *Fore. 11 lights each of 27 " + 2 " " 16 candle power requiring a total current of 12.9 Amperes*
 E " *Aft. { 37 lights each of 27 " + 2 " " 16 candle power requiring a total current of 2.4 Amperes*
 2 Mast head light with 1 lamp each of 32 candle power requiring a total current of 2.4 Amperes
 2 Side lights with 1 lamp each of 32 candle power requiring a total current of 4.8 " "
 6 - 3 light Cargo lights each of 1000 candle power, whether incandescent or arc lights } *Incandescent*
 2 - 1/2 Watt Cargo lights " " " 16 " "
 2 - 1 light " " " " " "

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

Where are the switches controlling the masthead and side lights placed *In Wheelhouse*

DESCRIPTION OF CABLES.

Main cable carrying *125* Amperes, comprised of *37* wires, each *.072* S.W.G. diameter, *.15* square inches total sectional area
 Branch cables carrying *22* Amperes, comprised of *7* wires, each *.064* S.W.G. diameter, *.0225* square inches total sectional area
 Branch cables carrying *4.5* Amperes, comprised of *7* wires, each *.036* S.W.G. diameter, *.007* square inches total sectional area
 Leads to lamps carrying *2.4* Amperes, comprised of *3* wires, each *.036* S.W.G. diameter, *.003* square inches total sectional area
 Cargo light cables carrying *5* Amperes, comprised of *110* wires, each *.0076* S.W.G. diameter, *.005* square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Cables throughout are of 2500 megohm class + C.M.A. quality insulated with pure and vulcanized rubber, lead covered, steel armoured and braided overall; except in accommodation amidships where they are lead covered only.

Joints in cables, how made, insulated, and protected *No joints in main Cables. Those made in branch wiring are in properly constructed junction boxes of porcelain, protected by cast iron covers.*

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances *Yes* 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 *Yes*.

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 clipped direct to bulkhead or iron plating and protected throughout by lead covering, steel armouring, and braided overall, except in midship accommodation which is lead covered only.*



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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 *Cables throughout protected by lead covering, steel armouring and braided overall. Those on top of Expansion trunk further protected by iron troughing.*

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

What special protection has been provided for the cables near boiler casings *Lead served armoured & braided.*

What special protection has been provided for the cables in engine room *Lead served armoured & braided.*

How are cables carried through beams *Beams bushed with lead. through bulkheads, &c. in glands if w.t. otherwise lead bushed.*

How are cables carried through decks *in iron deck pipes.*

Are any cables run through coal bunkers *No* or cargo spaces *No* or spaces which may be used for carrying cargo, stores, or baggage *No.*

If so, how are they protected *—*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *—*

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 *Permanently.* How fixed *L.S. & B cables clipped direct to bulkhead or steel plating.*

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 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 *Yes.*

Are any switches, fuses, or joints of cables fitted in the pump room or companion *no.*

How are the lamps specially protected in places liable to the accumulation of vapour or gas *Lamps in gas-tight fittings.*

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.

Electrical Engineers

Date

28/4/24

COMPASSES.

Distance between dynamo or electric motors and standard compass *118 feet from dynamo + 18 feet from Wireless Rotary.*

Distance between dynamo or electric motors and steering compass *118 " " " " 14 " " " "*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
16	6	5	
15	20	14	
27	42	45	

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* degrees on *all* course in the case of the steering compass.

For HARLAND & WOLFF LTD.

Builder's Signature.

Date *28th April 1924.*

GENERAL REMARKS.

This installation is well fitted & in accord with the Rules, & was found satisfactory on steam trial working on full load.

See Charge in Mch Repst

W. J. Butler
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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