

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 8844

Port of Belfast. Date of First Survey (1921) July 5 Date of Last Survey 23 Jan/22 No. of Visits 4
 No. in Reg. Book 62939 on the Iron or Steel S/S "INVERURIE" Port belonging to London
 Built at Belfast By whom Harland & Wolff Ltd When built
 Owners British Mexican Petroleum Co. Owners' Address
 Yard No. 590 Electric Light Installation fitted by Harland & Wolff Ltd When fitted

DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two 8 x 3" Stroke forced lubrication engines each direct coupled to one 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 Two in Engine Room each with six switches and two in Wheelhouse one with six switches and the other with nine 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

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

Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases Yes

Total number of lights provided for 238 arranged in the following groups:—

| | |
|--|--|
| A Navigation | { 8 lights each of 6 C.P. (4 lbs each of 8 candle power requiring a total current of 16.0 Amperes |
| B Wireless | { 5 lights each of 32 C.P. (15 lbs each of 16 candle power requiring a total current of 15.0 Amperes |
| C Lighting Amidships | { 10-12" Cabin lights each of 27 C.P. & 7 lbs of 16 candle power requiring a total current of 26.4 Amperes |
| D " Ford | { 12 lights each of 27 C.P. & 2 lbs of 16 candle power requiring a total current of 4.75 Amperes |
| E " Aft | { 35 lights each of 27 C.P. & 2 lbs of 16 candle power requiring a total current of 12.3 Amperes |
| 2 Mast head lights with 1 lamps each of 32 candle power requiring a total current of 2.4 Amperes | |
| 2 Side lights with 1 lamps each of 32 candle power requiring a total current of 2.4 Amperes | |
| 6.5 light Cargo lights of 80 candle power, whether incandescent or arc lights } Incandescent. | |
| 2 1/2 watt Cargo lights of 1000 | |
| 2.1 light " " " " 16 | |

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 .083 S.W.G. diameter, .200 square inches total sectional area

Branch cables carrying 29.2 Amperes, comprised of 7 wires, each .044 S.W.G. diameter, .0225 square inches total sectional area

Branch cables carrying 20.0 Amperes, comprised of 7 wires, each .044 S.W.G. diameter, .010 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.

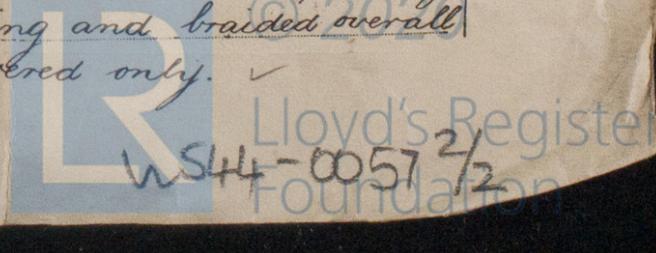
Cables throughout are of 2500 Megohm class and C.M.A. quality insulated with pure & vulcanized rubber, lead covered, steel armoured and braided overall except in accommodation amidships where they are lead covered only.

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 Cases.

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.



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 armoured and braided overall. Those on top of expansion trunk further protected by iron toughing.

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 or fibre through bulkheads, &c. otherwise lead or fibre bushed in glands of W.T.

How are cables carried through decks in deck pipes, bushed, or with glands.

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 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 Permanently. How fixed lead served armoured & braided 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 _____

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 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 14.11.22

COMPASSES.

Distance between dynamo or electric motors and standard compass 118 ft. from dynamos & 18 ft. from Wireless Rotary.

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

The nearest cables to the compasses are as follows:—

| | | | | | | |
|------------------|----|---------|----|----------------------------|----|----------------------------|
| A cable carrying | 16 | Amperes | 6 | feet from standard compass | 5 | feet from steering compass |
| A cable carrying | 15 | Amperes | 20 | feet from standard compass | 14 | feet from steering compass |
| A cable carrying | 26 | Amperes | 42 | feet from standard compass | 45 | 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 degrees on all course in the case of the steering compass.

FOR HARLAND & WOLFF, LTD.

Builder's Signature. Date 28/11/22

GENERAL REMARKS.

This installation is of good description, and has been fitted in accordance with the Rules.

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

Fee: -£20:0:0.

W. J. B. 6/12/22
A. P. Southwell.
Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 8 DEC. 1922

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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