

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 4606

Port of *Belfast* Date of First Survey *11<sup>th</sup> Mar* Date of Last Survey *30<sup>th</sup> April* No. of Visits *6*  
 No. in Reg. Book on the *Iron or Steel* *Twin Screw Steamer "Iran"* Port belonging to *Liverpool*  
 Built at *Belfast* By whom *Messrs Hasland & Wreghelin* When built *1896*  
 Owners *Iran Steam Ship Co. Ltd.* Owners Address *3 New Quay Liverpool*  
 Yard No. *294* Electric Light Installation fitted by *Messrs W. H. Allen, Son & Co. Bedford.* When fitted *1896*

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

*2 of W. H. Allen, Son & Co. Ltd. Compound plants of compound dynamo & vertical double acting engines.*

Capacity of Dynamo *90* Amperes at *62* Volts, whether continuous or alternating current *Continuous*

Where is Dynamo fixed *between main engine thrusts.*

Position of Main Switch Board *between main thrusts* having switches to groups *A. B. C. D. E.* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *1 switch placed in chartroom for projector & overhead arc lamp for Suez Canal purposes.*

If cut outs are fitted on main switch board to the cables of main circuit *yes* and on each auxiliary switch boards 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 cessel is wired on the double wire system are cut outs fitted to both flow and return wires or cables of all circuits including lamp circuits *—*

Are the cut outs of *non-oxidisable* metal *pure tin* and constructed to fuse at an excess of *50* per cent over the normal current

Are all cut outs fitted in easily accessible positions *yes* Are the fuses of standard dimensions *—* 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 cut-outs constructed of incombustible materials and fitted on incombustible bases *yes*.

Total number of lights provided for *134* arranged in the following groups:—

A	<i>35</i>	lights each of <i>3732</i>	<i>32716</i>	candle power requiring a total current of <i>38</i>	Amperes
B	<i>16</i>	lights each of <i>16</i>		candle power requiring a total current of <i>16</i>	Amperes
C	<i>48</i>	lights each of <i>16</i>		candle power requiring a total current of <i>48</i>	Amperes
D	<i>35</i>	lights each of <i>16</i>		candle power requiring a total current of <i>35</i>	Amperes
E	<i>Projector</i>	lights each of		candle power requiring a total current of	Amperes
1.	Mast head light with <i>1</i> lamps each of <i>32</i>			candle power requiring a total current of <i>2</i>	Amperes
2.	Side light with <i>2</i> lamps each of <i>32</i>			candle power requiring a total current of <i>4</i>	Amperes
6	Cargo lights of <i>128</i>			candle power, whether incandescent or arc lights <i>Incandescent</i>	

If arc lights, what protection is provided against fire, sparks, &c. *are protected by large glass shade.*

Where are the switches controlling the masthead and side lights placed *in chartroom*

## DESCRIPTION OF CABLES.

Main cable carrying	<i>90</i>	Amperes, comprised of <i>37</i> wires, each <i>16</i>	L.S.G. diameter, <i>.119</i>	square inches total sectional area
Branch cables carrying	<i>16</i>	Amperes, comprised of <i>7</i> wires, each <i>16</i>	L.S.G. diameter, <i>.022</i>	square inches total sectional area
Branch cables carrying	<i>38</i>	Amperes, comprised of <i>19</i> wires, each <i>18</i>	L.S.G. diameter, <i>.0314</i>	square inches total sectional area
Leads to lamps carrying	<i>1</i>	Amperes, comprised of <i>1</i> wires, each <i>16</i>	L.S.G. diameter, <i>.003</i>	square inches total sectional area
Cargo light cables carrying	<i>8</i>	Amperes, comprised of <i>125</i> wires, each <i>38</i>	L.S.G. diameter,	square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

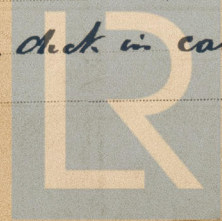
*All cables of best quality insulated with pure rubber vulcanising rubber india rubber proofed tape. The whole vulcanised together. being finally braided and compounded.*

Joints in cables, how made, insulated, and protected *Joints twisted as the case requires and soldered. being reinsulated with pure rubber. felt tape oysterite tape and finally painted with insulating varnish.*

Are all the joints of cables thoroughly soldered, resin only having been used as a flux *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 *joints on upper deck. none in hold or bunkers.*

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 led along main deck in casing and protected with channel-iron*





**DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.**

Are they in places always accessible *yes. excepting mains running on main deck. when this deck is filled with cargo.*

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture *cables run in strong casing, and passed through insulated holes in beams.*

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

What special protection has been provided for the cables near boiler casings *lead sheathed and armoured cables.*

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

How are cables carried through beams *holes bored with fibre formers through bulkheads, &c. bulkhead glands.*

How are cables carried through decks *strong galvanized iron deck pipes 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 *strong wood casing screwed to decks, protected with channel iron and beams.*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *on main deck under.*

If so, how are the lamp fittings and cable terminals specially protected *" " " "*

Where are the main switches and cut outs for these lights fitted *" " " "*

If in the spaces, how are they specially protected *" " " "*

Are any switches or cut outs fitted in bunkers *" " " "*

Cargo light cables, whether portable or permanently fixed *portable* How fixed *watertight coupler.*

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *bolted to fixed magnets and to deck through holding down bolts.*

How are the returns from the lamps connected to the hull  *$\frac{3}{8}$  brass screws wire soldered to metal.*

Are all the joints with the hull in accessible positions *yes.*

**VESSELS BUILT FOR CARRYING PETROLEUM.**

In vessels built for carrying petroleum, are all switches and cut-outs fitted in positions not liable to the accumulation of petroleum vapour or gas *"*

Are any switches, cut outs, 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 installation is *supplied with a voltmeter and an amperemeter, fixed*  
*Forwards or Aftwards fixed to main switchboard*

The copper used is guaranteed to have a conductivity of *100%* per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than *2000* megohms per statute mile after 24 hours' immersion in seawater.

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.

For **W. H. ALLEN, SON & Comp.**  
*C. C. Hawkins.*

Electrical Engineers

Date *May 7th 96*

**COMPASSES.**

Distance between dynamo or electric motors and standard compass *104 feet*

Distance between dynamo or electric motors and steering compass *110 feet*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
<i>1</i>	<i>6</i>	<i>1</i>	<i>1</i>
<i>6</i>	<i>9</i>	<i>5</i>	<i>5</i>

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 *North Star* course in the case of the standard compass and *nil* degrees on *ah* course in the case of the steering compass. *no deflection on either compass on ah course.*

Builder's Signature

Date

**GENERAL REMARKS.**

Committee's Minute

Surveyor to Lloyd's Register of British and Foreign Shipping.

*A. L. Jones*

It is submitted that this electric light installation appears to be in accordance with the Rules.

*9.6.96*

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.