

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 6197

Port of *Belfast* Date of First Survey *30th Aug* Date of Last Survey *10th Oct* No. of Visits *10*  
 No. in Reg. Book *100* on the *Iron or Steel* *S.S. Star of Japan* Port belonging to *Belfast*  
 Built at *Belfast* By whom *Worshipful Masters & Co. Ltd.* When built *1906*  
 Owners *Star Line Ltd.* Owners' Address *London*  
 Yard No. *235* Electric Light Installation fitted by *Harvey & Co. Ltd.* When fitted *1906*

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Vertical single cylinder double acting engine, direct coupled to compound multipolar dynamo 11 kw. @ 100 volts 250 revs.

Capacity of Dynamo 110 Amperes at 100 Volts, whether continuous or alternating current *Continuous*

Where is Dynamo fixed *Engine Room lower platform starboard side*

Position of Main Switch Board *On store, near Dynamo* having switches to groups *4 in number* of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each *Pantry 6 way, sub to Forecastle 6 way; Pantry 6 way, sub to Navigation box 6 way; Steering engine Room 9 way, sub to Aft Wheel house 6 way; Engine Room 9 way, with sub to Refrigerating engine room 6 way.*

If cut outs 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 cut outs fitted to both flow and return wires or cables of all circuits including lamp circuits *Yes*

Are the cut outs of non-oxidizable metal *Yes, tin* and constructed to fuse at an excess of *50-100* per cent over the normal current

Are all cut outs 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 cut-outs constructed of incombustible materials and fitted on incombustible bases *Yes, porcelain or slate bases.*

Total number of lights provided for *185* arranged in the following groups:—

Group	Number of lights	Each of	Candle power	Requiring a total current of	Amperes
A	46	16		27	
B	38	16		23	
C	46	16		27	
D	55	16		33	
E					
	2	Mast head lights with 1 lamp each of 32 cp		2.22	
	2	Side lights with 1 lamp each of 32		2.22	
	10	Cargo lights of 6 - 16 cp each			

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 *Foremast & sidelights in Wheel House Midships. Mainmast in Wheel House aft.*

## DESCRIPTION OF CABLES.

Main cable carrying 110 Amperes, comprised of 37 wires, each 15 L.S.G. diameter, .01489 square inches total sectional area

Branch cables carrying 33 Amperes, comprised of 7 wires, each 14 L.S.G. diameter, .0084 square inches total sectional area

Branch cables carrying 12 Amperes, comprised of 4 wires, each 18 L.S.G. diameter, .0125 square inches total sectional area

Leads to lamps carrying 3 Amperes, comprised of 1 wire, each 16 L.S.G. diameter, .0032 square inches total sectional area

Cargo light cables carrying 3.6 Amperes, comprised of 110 wires, each 38 L.S.G. diameter, .0032 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Wires of tinned copper insulated with pure Para rubber, two coats vulcanizing rubber, one layer india rubber coated tape, and the whole vulcanised together. Braided and compounded overall, or lead covered, armoured with gal. iron wires, and braided overall.

Joints in cables, how made, insulated, and protected *No joints in ship, porcelain extension boxes used throughout.*

Are all the joints of cables thoroughly soldered, resin only having been used as a flux *✓* 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 *None*

How are the cables led through the ship, and how protected *Branch wiring in accommodation & D.R. wire in wood casing. Main cables, & engine room branch cables, lead covered, armoured and braided, led through beams and clipped up to decks etc.*

**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 *in alleyways, lead covered armoured and braided cables. In exposed positions, wires run in gal. iron tube.*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *L.C. Arm. & braided.*

What special protection has been provided for the cables near boiler casings *L.C. Arm. & braided*

What special protection has been provided for the cables in engine room *L.C. Arm. & braided*

How are cables carried through beams *through wood or fibre ferrules through bulkheads, &c. ferrules or brass U.T. glands*

How are cables carried through decks *in gal. iron pipes, 12" high, flanged to deck & 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 *twain dks.*

If so, how are they protected *Lead covered armoured & braided cables led through beams & clipped up.*

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage *None fitted*

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 *No.*

Cargo light cables, whether portable or permanently fixed *Portable* ~~How fixed~~

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel *Double Wire System.*

How are the returns from the lamps connected to the hull

Are all the joints with the hull in accessible positions

**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 *with* an amperemeter, fixed *on 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 *600* 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.

*M. Harvie & Co. Ltd.*  
*af.*

Electrical Engineers

Date *13<sup>th</sup> Oct 1906*

**COMPASSES.**

Distance between dynamo or electric motors and standard compass *About 96 feet*

Distance between dynamo or electric motors and steering compass *98*

The nearest cables to the compasses are as follows:— *Electric light in both compasses.*

A cable carrying *330* Amperes *330* feet from standard compass *330* feet from steering compass

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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* courses in the case of the standard compass and *Nil* degrees on *all* courses in the case of the steering compass.

*W. H. & CO., LIMITED*  
*SECRETARY*

Builder's Signature.

Date *19<sup>th</sup> October 1906*

**GENERAL REMARKS.**

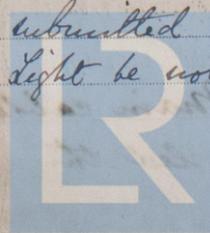
*This installation appears to be of good description and has been fitted in accordance with the Rules.*

*A. J. Peveridge*

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

Committee's Minute

*It is submitted that the Record Elec. Light be noted in the Reg. Books.*



Lloyd's Register  
Foundation  
*20.10.06*

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

REPORT FORM No. 13.