

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 6121

Port of Belfast Date of First Survey 19th mar Date of Last Survey may 8th No. of Visits 13  
 No. in Reg. Book on the Iron Steel s.s. "Chirripo" Port belonging to Manchester  
 Built at Belfast By whom Markman Black & Co Ltd When built 1906  
 Owners Elders & Fyffes (Shipping) Co Ltd Owners' Address London  
 Yard No. 232 Electric Light Installation fitted by W. H. Allen, Sons & Co Ltd When fitted 1906

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Two enclosed engines having cylinders 10" + 14" x 6 1/2" stroke, directly coupled to six pole compound wound dynamos.

Capacity of Dynamos each 600 Amperes at 100 Volts, whether continuous or alternating current continuous.

Where is Dynamo fixed Starting Platform Starboard aft.

Position of Main Switch Board on Starboard aft bulkhead having switches to groups A.B.C.D.E.F.G.H.I. of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each —

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 where double wire yes.

Are the cut outs of non-oxidizable metal yes and constructed to fuse at an excess of 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

Total number of lights provided for 282 arranged in the following groups:—

Group	Number of lights	Description	Candle power	Current (Amperes)
A	79	lights each of 16	16	48
B	5	" " " 16 cp + motor	16	134
C	22	lights each of 16	16	12
D	-	motor	motor	31
E	-	lights each of motor	motor	31
F	45	" " " 16 cp	16	27
G	4	lights each of 16 cp motor	16	34
H	61	" " " 16 cp	16	37
I	46	lights each of 16	16	37
1	1	Mast head light with 1 lamp each of 32	32	1.2
2	1	Side lights with 1 lamp each of 32	32	2.4
H	4	Cargo lights each consisting of 5 x 16 candle power, whether incandescent or are lights. <u>incandescent.</u>	80	

If arc lights, what protection is provided against fire, sparks, &c. none.

Where are the switches controlling the masthead and side lights placed in wheel-house

## DESCRIPTION OF CABLES.

Cable Type	Capacity	Wires	Diameter	Sectional Area
Main cable carrying	600 Amperes	91 wires, each 13	L.S.G. diameter, .625	square inches total sectional area .129
Branch cables carrying	28 Amperes	19 wires, each 15	L.S.G. diameter, .291	square inches total sectional area .029
Branch cables carrying	6 Amperes	7 wires, each 20	L.S.G. diameter, .073	square inches total sectional area .0043
Leads to lamps carrying	0.6 Amperes	7 wires, each 22	L.S.G. diameter, .0043	square inches total sectional area .0129
Cargo light cables carrying	3 Amperes	7 wires, each 18	L.S.G. diameter, .0129	square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

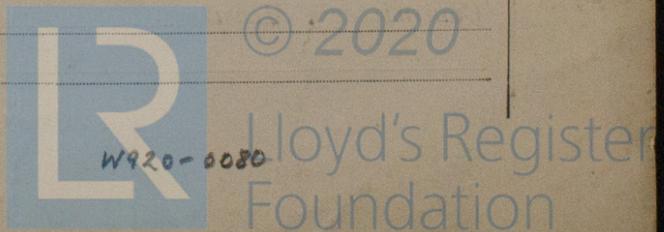
The conductor is insulated with one layer Pure Para rubber, then two layers vulcanizing rubber the whole vulcanized together finally taped & braided. Wires in machinery spaces after vulcanizing are lead covered & specially armoured with G.S. wires.

Joints in cables, how made, insulated, and protected thoroughly soldered insulated with two layers pure Para rubber, two layers prepared tape and varnished

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 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 in strong 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 on masts in G.I. pipes

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat none near undue heat.

What special protection has been provided for the cables near boiler casings } Lead covered covered and specially armoured

What special protection has been provided for the cables in engine room } with G.I. wires.

How are cables carried through beams in fibre ferrules through bulkheads, &c. in fibre ferrules.

How are cables carried through decks in G.I. pipes lashed with fibre

Are any cables run through coal bunkers yes or cargo spaces yes or spaces which may be used for carrying cargo, stores, or baggage no

If so, how are they protected by G.I. piping

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

If so, how are the lamp fittings and cable terminals specially protected cast iron guards & G.I. pipe

Where are the main switches and cut outs for these lights fitted main controlling switches in Engine Room.

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 bolted to magnet frame bulkhead

How are the returns from the lamps connected to the hull soldered to 3/8" brass earth screws

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 yes supplied with a voltmeter and 2 amperemeters fixed in masthead

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.

For. W. H. Allen, Son & Co. Ltd  
C. C. Hawkins

Electrical Engineers

Date 24<sup>th</sup> May 1906

**COMPASSES.**

Distance between dynamo or electric motors and standard compass 10 1/2 feet dynamo 30 feet nearest motor

Distance between dynamo or electric motors and steering compass 9 1/2 feet dynamo 25 feet nearest motor

The nearest cables to the compasses are as follows:—

A cable carrying <u>48</u> Amperes	<u>67</u> feet from standard compass	<u>60</u> feet from steering compass
A cable carrying _____ Amperes	_____ feet from standard compass	_____ feet from steering compass
A cable carrying <u>all double insulated</u>	_____ feet from standard compass	_____ 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 every course in the case of the standard compass and nil degrees on every course in the case of the steering compass.

WORKMAN, CLARK & CO., LIMITED  
SECRETARY

Builder's Signature.

Date 30<sup>th</sup> 5 706

**GENERAL REMARKS.**

This installation appears to be of good description, and has been fitted in accordance with the Rules of P. & F. Revue.

P. J. Revue  
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.



THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

REPORT FORM NO. 14.