

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 24118

Port of Glasgow Date of First Survey 12 March Date of Last Survey 30 May/06 No. of Visits 7  
 No. in 38 on the Iron or Steel Twin S. S. "Empress of Ireland" Port belonging to Liverpool  
 Reg. Book 38 Sup. Built at Glasgow By whom The Fairfield S & E. Co Ltd When built 1906  
 Owners The Canadian Pacific Ry. Co. Owners' Address Montreal  
 Yard No. 443 Electric Light Installation fitted by The Fairfield S & E Co Ltd When fitted 1906

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

3 Sets of Compound double acting, enclosed high speed type of engines & 1 Set of single cylinder, enclosed high speed engine, all coupled to compound wound dynamos  
 Capacity of Dynamo 3 at 750 & 1 at 180 Amperes at 100 Volts, whether continuous or alternating current continuous  
 Where is Dynamo fixed House black steel in Eng. Rm. Whether single or double wire system is used Double  
 Position of Main Switch Board After Eng. Rm. bulkhead having switches to groups 14 in number of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each Upper Dynamo Room with 3 switches

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 and constructed to fuse at an excess of 25 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 No  
 Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases Yes

Total number of lights provided for 2029 arranged in the following groups:—  

A	1 - 16	lights each of	16	candle power requiring a total current of	25.2	Amperes
B	2 - 244	lights each of	16	candle power requiring a total current of	146.4	Amperes
C	3 - 144	lights each of	16	candle power requiring a total current of	128.4	Amperes
D	4 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
E	5 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
F	6 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
G	7 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
H	8 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
I	9 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
J	10 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
K	11 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
L	12 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
M	13 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
N	14 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
O	15 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
P	16 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
Q	17 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
R	18 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
S	19 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
T	20 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
U	21 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
V	22 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
W	23 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
X	24 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
Y	25 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
Z	26 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
AA	27 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
AB	28 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
AC	29 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
AD	30 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
AE	31 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
AF	32 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
AG	33 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
AH	34 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
AI	35 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
AJ	36 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
AK	37 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
AL	38 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
AM	39 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
AN	40 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
AO	41 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
AP	42 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
AQ	43 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
AR	44 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
AS	45 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
AT	46 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
AU	47 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
AV	48 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
AW	49 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
AX	50 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
AY	51 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
AZ	52 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
BA	53 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
BB	54 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
BC	55 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
BD	56 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
BE	57 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
BF	58 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
BG	59 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
BH	60 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
BI	61 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
BJ	62 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
BK	63 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
BL	64 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
BM	65 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
BN	66 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
BO	67 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
BP	68 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
BQ	69 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
BR	70 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
BS	71 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
BT	72 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
BU	73 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
BV	74 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
BW	75 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
BX	76 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
BY	77 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
BZ	78 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
CA	79 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
CB	80 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
CC	81 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
CD	82 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
CE	83 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
CF	84 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
CG	85 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
CH	86 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
CI	87 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
CJ	88 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
CK	89 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
CL	90 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
CM	91 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
CN	92 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
CO	93 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
CP	94 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
CQ	95 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
CR	96 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
CS	97 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
CT	98 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
CU	99 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
CV	100 - 144	lights each of	16	candle power requiring a total current of	118.2	Amperes
1	Mast head light with 1 lamps each of 52	candle power requiring a total current of	2.4	Amperes		
2	Side light with 1 lamps each of 32	candle power requiring a total current of	2.4	Amperes		
8	Cargo lights of 4-50 CP @ - 200	candle power, whether incandescent or are lights	Incandescent			

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

1-20 Search Light in Metal Case

Where are the switches controlling the masthead and side lights placed Wheel House

## DESCRIPTION OF CABLES.

3 Main cable carrying 400 Amperes, comprised of 91 wires, each 12 L.S.G. diameter, .7942 square inches total sectional area  
 11 Branch cables carrying 1000 Amperes, comprised of 37 wires, each 14 L.S.G. diameter, .1906 square inches total sectional area  
 Branch cables carrying 1000 Amperes per 9 inch L.S.G. diameter, square inches total sectional area  
 Leads to lamps carrying 6 Amperes, comprised of 1 wires, each 18 L.S.G. diameter, .00181 square inches total sectional area  
 Cargo light cables carrying 7.5 Amperes, comprised of 7 wires, each 18 L.S.G. diameter, .0129 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Insulated with pure and vulcanized India Rubber, taped, and the whole vulcanized together. All main cables are protected with a covering of lead, and a covering of galvanized wire. The sub-mains are run in grooved wood casing.  
 Joints in cables, how made, insulated, and protected None

Are all the joints of cables thoroughly soldered, resin only having been used as a flux None 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 No

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 All main cables are lead covered and armoured and clipped to decks and bulkheads, also in galleys and exposed places, all other wires and cables are run in grooved 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 Lead covered & armoured

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

What special protection has been provided for the cables near boiler casings Ditto

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

How are cables carried through beams Fibre Tubes through bulkheads, &c. G.M. Glands

How are cables carried through decks Galvanized iron deck tubes

Are any cables run through coal bunkers Yes or cargo spaces Yes or spaces which may be used for carrying cargo, stores, or baggage Yes

If so, how are they protected Armoured and lead covered

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 All lamp fittings have cast iron shutters for closing

Where are the main switches and cut outs for these lights fitted On the deck above

If in the spaces, how are they specially protected None

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 "

How are the returns from the lamps connected to the hull "

Are all the joints with the hull in accessible positions "

The installation is Supplied with a Voltmeter and ammeter for each machine, fitted to main switchboard  
supplied with a voltmeter and an ammeter, fixed

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 copper used is guaranteed to have a conductivity of 99 per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than 1000 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.

THE FAIRFIELD SHIPBUILDING

AND ENGINEERING CO., LIMITED:

A. W. Sampson Electrical Engineers

Date "

COMPASSES.

Distance between dynamo or electric motors and standard compass 20 feet

Distance between dynamo or electric motors and steering compass 23 "

The nearest cables to the compasses are as follows:—

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

All Compasses are lighted electrically

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 " degrees on " course in the case of the standard compass and " degrees on " course in the case of the steering compass.

THE FAIRFIELD SHIPBUILDING

AND ENGINEERING CO., LIMITED:

A. W. Sampson Builder's Signature. Date "

GENERAL REMARKS.

The installation has been satisfactorily fitted & worked well on trial.

for

Arthur L. Jones

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

Committee's Minute

Glasgow 30 JUL 1908

Received Electric light!

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

Amul



Lloyd's Register Foundation

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

REPORT FORM No. 1. 3m. 14.

LR-FAP-TB 117