

REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 6977.

Port of Belfast Date of First Survey 6th March Date of Last Survey 4th August No. of Visits 22
 No. in Reg. Book on the Steel T.S.S. Themistocles Port belonging to Aberdeen
 Built at Belfast By whom Harland & Wolff Ltd When built 1911
 Owners Aberdeen Line Owners' Address London
 Yard No. 418 Electric Light Installation fitted by Harland & Wolff Ltd When fitted 1911

DESCRIPTION OF DYNAMO, ENGINE, ETC.

2- Enclosed Forced Lubrication Engines & dynamos, cylinders 10" & 15" dia x 7" stroke giving output of 74 K.W. at 450 R.P.M.

Capacity of Dynamo 740 Amperes at 100 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed Engine Room Whether single or double wire system is used Double forward of engine casing & single aft of engine casing

Position of Main Switch Board Engine Room having switches to groups A.B.C.D.E. & F.

Positions of auxiliary switch boards and numbers of switches on each 1- Box in Chart House with 14 switches: 1- Box in Starboard Corridor Forward end containing 15 switches: 1- Box in Starboard Corridor aft end containing 7 switches: 1- Box in 1st Bl. Pantry entrance containing 14 switches: 1- Box Forward of No. 5 Hatch on Main Deck

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 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 932 including 4-32 C.P. in Signals = 8-16 C.P. excluding Morse lamp. arranged in the following groups:-

A 3 rd class aft	128 lights each of	16	candle power requiring a total current of	45.55	Amperes
B Daylight	233 lights each of	16	candle power requiring a total current of	86.45	Amperes
C Crew & Personnel	160 lights each of	16	candle power requiring a total current of	58.5	Amperes
D 1 st class	32 lights each of	16	candle power requiring a total current of	88.2	Amperes
E Cargo	8 lights each of	16	candle power requiring a total current of	28.8	Amperes
F Engine Room & Store	111 " " " "	16	" " " " " "	66.5	"
2 Mast head light	2 lamps each of	32	candle power requiring a total current of	2.4	Amperes
2 Side light	2 lamps each of	32	candle power requiring a total current of	2.4	Amperes
3 Cargo lights of	5000		candle power, whether incandescent or arc lights	Arc.	

If arc lights, what provision is provided against fire, sparks, &c. Glass Globes with wire guards

Where are the switches controlling the masthead and side lights placed in Chart House Switchbox.

DESCRIPTION OF CABLES.

Main cable carrying	740 Amperes, comprised of	91 wires, each	12 L.S.G. diameter, .7638 square inches total sectional area
Branch cables carrying	58 Amperes, comprised of	19 wires, each	14 L.S.G. diameter, .0945 square inches total sectional area
Branch cables carrying	22 Amperes, comprised of	7 wires, each	16 L.S.G. diameter, .0023 square inches total sectional area
Leads to lamps carrying	4.4 Amperes, comprised of	7 wires, each	22 L.S.G. diameter, .0042 square inches total sectional area
Cargo light cables carrying	4.4 Amperes, comprised of	90 wires, each	36 L.S.G. diameter, .0040 square inches total sectional area

DESCRIPTION OF INSULATION, PROTECTION, ETC.

Cables thru out decks 2500 - classed to C.M.A. quality insulated with pure rubber and Vulcanised rubber braided & compounded overall. cables in engine room & galleys further protected by lead sheathing & steel armoring braided overall.

Joints in cables, how made, insulated, and protected Soldered using resin as flux insulated with pure rubber & prepared tapes & protected by strong wood casing in accommodation & holds which is further protected in holds by galvanised iron troughing

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 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 Strong wood casing in accommodation & holds which is protected in holds & cargo spaces by galvanised iron troughing

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 Steel tube

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat lead & iron sheathing braided overall

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

What special protection has been provided for the cables in engine room lead & iron sheathing braided overall

How are cables carried through beams beams bushed with fibre through bulkheads, &c. W.I. Glands for W.I. Bulkheads

How are cables carried through decks iron deck tubes bushed with fibre bulkheads otherwise bushed 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 Yes

If so, how are they protected Bunkers: Steel tube large spaces: wood casing in galvanised iron troughing

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

If so, how are the lamp fittings and cable terminals specially protected strong C.F. fittings with glasses & C.F. hinged covers

Where are the main switches and cut outs for these lights fitted in stokehold

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 permanently How fixed in wood casing &c.

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel this earth plate on dynamo bedplate

How are the returns from the lamps connected to the hull Sweated under 3/8" tinned brass tap screws

Are all the joints with the hull in accessible positions Yes

The installation is supplied with a voltmeter and two amperemeters fixed on main sub d

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 100 per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than 2500 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 the vessel and we declare that it is at this date in good order and safe working condition.

For Harland & Wolff Ltd. Electrical Engineers

Date 18/2/11

COMPASSES.

Distance between dynamo or electric motors and standard compass 30 feet to nearest motor

Distance between dynamo or electric motors and steering compass 38

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	feet from standard compass	feet from steering compass
12.0	15	15	feet from steering compass
17.5	20	20	feet from steering compass
16.0	40	32	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 18/2/11

GENERAL REMARKS.

The above installation is of good description throughout and has been fitted in accordance with the Rules.
It is submitted that this vessel is eligible for THE RECORD, Elec. light.
R.F. Plener
 Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute