

REPORT ON ELECTRIC LIGHTING INSTALLATION.

Port of _____

THURS. 19 MAY 1892

Received at London Office _____ 18

No. 4094*

No. in Name of Ship *Mohawk*

Built at *Belfast*

When built *1892*

Reg. Book. _____

Electric Light Installation fitted by *W. D. Allen & Co.* when fitted *April - May 1892.*

DESCRIPTION OF DYNAMO AND ENGINE.—

*Compound wound 60 ft, 130 lb, 250 revs, ring armature, inverted magnet,
2 direct driven big inverted vertical single cylinder, double acting engine*
Capacity of Dynamo *130* Amperes at *60* Volts, whether continuous or alternating current *Continuous*
Where is Dynamo fixed *Between thrust blocks on starting platform below deck.*

LAMPS.—

Is vessel wired on single or double wire system *single* Total number of lights *986* arranged in the following groups:—

Group	Description	Number of Lights	Each of	Candle Power	Requiring a total current of	Amperes
A	Engines	52	16		52	
B	Forecasts	34	16		34	
C	Poop	20	16		30	
	3 masts	24	16		24	
D	Cargo	48	16		48	
E	Holds	20	16		20	
	Fore Bridge	34	16		34	
	Starboard	36 = 33 of	16		39	
	1 Mast head light with 1 lamps each of	32	32		3	
	2 Side light with 1 lamps each of	32			4	
	6 Cargo lights of 8x16 = 128					

candle power, whether incandescent or arc lights *— incandescent*

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

SWITCHES AND CUT-OUTS.—

Position of Main Switch Board *Starting platform aft* having switches to groups *A to G* of lights as above

Positions of other switch boards and numbers of switches on each *2 subsidiary boards in engine room, 4 sub-fuse boards four on bridge & 1 each at forecasts ahead.*

If cut outs are fitted to main circuit *yes* and to each auxiliary circuit *yes*

and at each position where cable is branched or reduced in size *where sufficiently so to require it.*

If vessel is wired on the double wire system are cut outs fitted on each wire _____

Are the cut outs of non-oxidizable metal *Tin* and constructed to fuse at an excess of *about 50%* per cent over the normal current

Are all cut outs fitted in easily accessible positions *yes.*

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 _____

How are the lamps specially protected in places liable to the accumulation of vapour or gas _____

Are all switches and cut-outs constructed of unflammable materials and fitted on unflammable bases *yes.*

DESCRIPTION OF CABLES.—

Main cable carrying *130* Amperes, comprised of *37* wires, each *16* legal standard wire gauge diameter

Branch cables carrying *4 holds* Amperes, comprised of *7* wires, each *16* legal standard wire gauge diameter

Branch cables carrying *3 masts* Amperes, comprised of *4* wires, each *14* legal standard wire gauge diameter

Leads to lamps *1* Amperes, comprised of *1* wires, each *18+16* legal standard wire gauge diameter

Cargo light cables carrying *8* Amperes, comprised of *225* wires, each *40* legal standard wire gauge diameter

The copper used has a conductivity of *98* per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than *2000 + 400* megohms per statute mile after 24 hours' immersion in seawater



DESCRIPTION OF INSULATION, PROTECTION, &c.—

Tinned copper, 1 lap pure rubber, 2 coats vulcanising rubber, 1 ditto proofed tape, the whole vulcanised, covered with 7 braids hemp compounded.

Joints in cables, how made, insulated, and protected soldered with resin as flux & insulated by one layer fibre tape, spaced pure rubber solution, spiral pure rubber, solution, prepared proof or synthetic tape, & spiral coat of insulating varnish

Are all the joints of cables thoroughly soldered, resin only having been used as a flux *yes.*

How are cables led throughout the ship *in casings except in engine room, where armoured cables are clipped to bulkhead.*

What special protection has been provided for the cables in open alleyways *Strong casings*

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

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

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

How are cables carried through decks *gal' iron deck* and through bulkheads *fibre ferrule*

Are any cables run through coal bunkers *no* or cargo spaces *yes* If so, how are they protected *by channel iron & strong covers.*

Are any lamps fitted in coal bunkers or spaces which may be used for cargo *yes.*

If so, how are they specially protected *Jeak boxes placed well out of danger.*

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 *through general connection*

How are the returns from the lamps connected to the hull *soldered to brass 2 1/2" white screen*

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

TESTING, &c.—

Has the installation been thoroughly tested to its full capacity during a trial of *6* hours' duration *yes.*

The insulation resistance of the whole installation was not less than *—* ohms *—*

The installation is *yes* supplied with a voltmeter and *no* an amperemeter, fixed *on main switchboard*

General Remarks.—

There were 17 sockets fixed in lower holds in addition to the 25 sockets required for portables = 42 sockets altogether.

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.

N. N. Allen Electrical Engineers

Date *May 14th 1892*

COMPASSES.—

Distance between dynamo and standard compass } *about 100 feet.*

Distance between dynamo and steering compass }

The nearest cables to the compasses are as follows:—

A cable carrying	<i>12</i>	Amperes	} <i>29</i> feet from standard compass	} <i>22</i> feet from steering compass
A cable carrying	<i>34</i>	Amperes		
A cable carrying	<i>16</i>	Amperes		

Have the compasses been adjusted with and without the electric installation at work at full power *—*

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.

Harland Wolff & Co Builder's Signature Date *17th May 1892*

H. M. Jones Surveyor's Signature Date *18th May 1892*

