

# 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 H.P., 130 A, 250 revs, ring armature, inverted magnet,  
direct driven by 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 main

## LAMPS.—

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

A Engines	52	lights each of	16	candle power requiring a total current of	52	Amperes
B Forecasts	34	lights each of	16	candle power requiring a total current of	34	Amperes
C Poop	22	lights each of	16	candle power requiring a total current of	30	Amperes
f three decks	24	lights each of	16	candle power requiring a total current of	24	Amperes
D Cargo	48	lights each of	16	candle power requiring a total current of	48	Amperes
4 Holds	26	lights each of	16	candle power requiring a total current of	26	Amperes
E Fore Bridge	34	lights each of	16	candle power requiring a total current of	34	Amperes
in star.	36 = 33 of	lights each of	16	candle power requiring a total current of	39	Amperes
1 Mast head light with	1	lamps each of	32	candle power requiring a total current of	2	Amperes
2 Side light with	1	lamps each of	32	candle power requiring a total current of	4	Amperes
6 Cargo lights of 8x16	= 128	lights each of		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 H 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 fore-castle & poop.

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 4 holds Amperes, comprised of 7 wires, each 16 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 22+ wires, each 16 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 of felt tape, covered with pure rubber, solution, special pure rubber, solution, prepared proof or coherent tape, & final 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 plates* and through bulkheads *fibre ferrules*

Are any cables run through coal bunkers *no* or cargo spaces *yes* If so, how are they protected *by a channel in string cover.*

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 14<sup>th</sup> 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	Amperes	feet from standard compass	feet from steering compass
<i>1 1/2</i>	<i>29</i>	<i>2 1/2</i>	
<i>3 1/4</i>			
<i>1 1/2</i>			

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 *17<sup>th</sup> May 1892*

*H. M. Jones*

Surveyor's Signature

Date *18<sup>th</sup> May 1892*



Lloyd's Register Foundation