

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 69220

Port of Newcastle-on-Tyne Date of First Survey 11<sup>th</sup> Aug Date of Last Survey 6<sup>th</sup> Sept 1916 No. of Visits 8  
 No. in on the Iron or Steel S.S. "British Emperor" Port belonging to London  
 Reg. Book Built at Walker-on-Tyne By whom Messrs. Sir W. G. Armstrong Whit. & Co. When built 1915-6  
 Owners British Tanker Co. Ltd. Owners' Address  
 Yard No. Electric Light Installation fitted by G. Holmes & Co. When fitted 1916

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

One 6" x 6" open single cylinder engine by Robey & Co., coupled to  
One "Holmes" dynamo.  
 Capacity of Dynamo 110 Amperes at 100 Volts, whether continuous or alternating current continuous  
 Where is Dynamo fixed Star<sup>rd</sup> side of Engine Room. Whether single or double wire system is used double  
 Position of Main Switch Board near dynamo having switches to groups A.B.C.D. of lights, &c., as below  
 Positions of auxiliary switch boards and numbers of switches on each 1-6 way fusebox in Stairs (Forward), 9 way fusebox in  
Wheelhouse, 1-4 way 15 amp section box in Pantry, 1-8 way fusebox in Pantry, 4 way fusebox in E.S. case with  
switches outside Pump Room, 8 way fusebox w/ switches in Engine Rm, 8 way fusebox in Eng's Passage Star<sup>rd</sup>  
 If fuses 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 fuses fitted to both flow and return wires or cables of all circuits including lamp circuits yes  
 Are the fuses of non-oxidizable metal yes and constructed to fuse at an excess of 100 per cent over the normal current  
 Are all fuses 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 fuses constructed of incombustible materials and fitted on incombustible bases yes  
 Total number of lights provided for 96-25 CP, 6-32 CP, 415 fans arranged in the following groups:—  

A	<u>55</u> lights each of <u>25</u> candle power requiring a total current of <u>25.5</u> Amperes
B	<u>21</u> lights each of <u>25</u> candle power requiring a total current of <u>6.3</u> Amperes
C	<u>5</u> fans each taking <u>.45</u> amps. <u>25</u> lights each of <u>25</u> candle power requiring a total current of <u>10.55</u> Amperes
D	<u>2</u> lights each of <u>32</u> candle power requiring a total current of <u>—</u> Amperes
E	<u>—</u> lights each of <u>—</u> candle power requiring a total current of <u>—</u> Amperes

2 Mast head light with 1 lamp each of 32 candle power requiring a total current of 2.24 Amperes } included  
2 Side light with 1 lamp each of 32 candle power requiring a total current of 2.24 Amperes } above.  
— Cargo lights of — candle power, whether incandescent or arc lights —

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

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

## DESCRIPTION OF CABLES.

Main cable carrying 110 Amperes, comprised of 19 wires, each 14 S.W.G. diameter, .094 square inches total sectional area  
 Branch cables carrying 25.5 Amperes, comprised of 19 wires, each 14 S.W.G. diameter, .046 square inches total sectional area  
 Branch cables carrying 6.3 Amperes, comprised of 4 wires, each 18 S.W.G. diameter, .012 square inches total sectional area  
 Leads to lamps carrying .3 Amperes, comprised of 1 wire, each 18 S.W.G. diameter, .0018 square inches total sectional area  
 Cargo light cables carrying — Amperes, comprised of — wires, each — S.W.G. diameter, — square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Conductors composed of high conductivity copper, insulated with pure and vulcanised india rubber, taped & armoured with steel wires, taped & braided & compounded overall.  
 Joints in cables, how made, insulated, and protected none, looping-in system carried out or special connection boxes used  
 Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances ✓ 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 ✓  
 Are there any joints in or branches from the cable leading from dynamo to main switch board ✓  
 How are the cables led through the ship, and how protected In accommodation, lead covered clipped up, Engine & Boiler Spaces, Armoured & braided. Mains, U.S.R. in galv<sup>d</sup> iron pipe under fore & aft gangways.



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 U.S.R. in Galv. Iron Pipes  
Lead covered clipped up.

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

What special protection has been provided for the cables near boiler casings U.S.R. in Iron Pipe

What special protection has been provided for the cables in engine room Armoured & Braided

How are cables carried through beams bushed with fibre through bulkheads, &c. Stuffing boxes.

How are cables carried through decks in lead or iron deck tubes flanged & made watertight.

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 U.S.R. in Galv. iron pipes.

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage no

If so, how are the lamp fittings and cable terminals specially protected ✓

Where are the main switches and fuses for these lights fitted ✓

If in the spaces, how are they specially protected ✓

Are any switches or fuses fitted in bunkers no

Cargo light cables, whether portable or permanently fixed ✓ 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 ✓

Is the installation supplied with a voltmeter yes, and with an amperemeter yes, fixed on main board

VESSELS BUILT FOR CARRYING PETROLEUM.

In vessels built for carrying petroleum, are all switches and fuses fitted in positions not liable to the accumulation of petroleum vapour or gas yes

Are any switches, fuses, or joints of cables fitted in the pump room or companion no

How are the lamps specially protected in places liable to the accumulation of vapour or gas strong well glasses with SR. Rings.

The copper used is guaranteed to have a conductivity of not less than that of the Engineering Standards Committee's standard, and the wires are protected by tinning from the sulphur compounds present in the insulating material.

Insulation of cables is guaranteed to have a resistance of not less than 600 megohms per statute mile at 60° Fahrenheit after 24 hours' immersion in water, the test being made after one minute's electrification at not less than 500 volts and while the cable is still immersed.

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.

J. W. Holmes & Co. Electrical Engineers Date Oct 24/16

COMPASSES.

Distance between dynamo or electric motors and standard compass approx 194 ft.

Distance between dynamo or electric motors and steering compass 191 ft.

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	inside feet from standard compass	inside feet from steering compass
3			
8.5		approx 5	approx 5
25.5		20	16

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.

SIR W. G. ARMSTRONG WHITEWORTH & CO. LTD. Builder's Signature. Date 26 Oct 1916

GENERAL REMARKS.

The above installation has been fitted in a satisfactory manner & in accordance with the Rules

It is submitted that this vessel is eligible for THE RECORD. Elec. light.

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

Committee's Minute