

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 11282

Port of Middlesbrough Date of First Survey 8<sup>th</sup> July 1921 Date of Last Survey 5<sup>th</sup> May 1922 No. of Visits 22  
 No. in Reg. Book 34369 on the ~~Iron~~ Steel S.S. Feliciano Port belonging to Liverpool  
 Built at Haverlton Hill on Ties By whom Messrs Furness S/B Co Ltd When built 1922  
 Owners Furness Withy & Co Ltd Owners' Address London  
 Yard No. 17 Electric Light Installation fitted by Messrs The Furness S/B Co Ltd When fitted 1922

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

1-20 Kw. Ltg. lit. Engine No 9031 Enclosed Type - Messrs Rowden. Dynamo No 4417 Comp. Wound } Campbell & Isherwood  
 1-7 1/2 Kw. " " " 39616 " " " Robey " " 4457 " " "

Capacity of Dynamo 200 + 75 Amperes at 100 Volts, whether continuous or ~~alternating current~~ continuous

Where is Dynamo fixed Generator compartment Lower Tween Decks St Side Whether single or double wire system is used Double

Position of Main Switch Board do do do do having switches to groups A. B. C. D. & E. of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each "A" Wheel House "B" Engineers entrance in Engine Room

Chart House "C" Crews entrance to Engine Room, also File & Steering Gear House

"D" Engine room Crews entrance Stbd "E" Generator compartment Port Side

If fuses are fitted on main switch board to the cables of main circuit yes and on each auxiliary ~~switch~~ fuse 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 50 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 244 arranged in the following groups:—

A Navigation { 7 lights each of 32 C.P. candle power requiring a total current of 8.6 Amperes

B Engineers & Officers { 72 lights each of 32 C.P. candle power requiring a total current of 32.0 Amperes

C Crew { 72 lights each of 32-8 C.P. candle power requiring a total current of 30.0 Amperes

D Cargo Lights { 13 Boxes 11 Lts Each 600 C.P. 2 lights each of 32 C.P. (N.U.C.) candle power requiring a total current of 35.6 Amperes

E Engine Room { 56 lights each of 32/16 C.P. 600 C.P. candle power requiring a total current of 53.6 Amperes

2 Mast head light with 1 lamps each of 32 candle power requiring a total current of 2.6 included in A Amperes

2 Side light with 1 lamps each of 32 candle power requiring a total current of 2.6 included in A Amperes

11 Cargo lights of 600 candle power, whether incandescent or arc lights incandescent

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

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

## DESCRIPTION OF CABLES.

Main cable carrying 200 + 75 Amperes, comprised of 37 wires, each 14 S.W.G. diameter, 1824 square inches total sectional area

Branch cables carrying 32 Amperes, comprised of 19 wires, each 0.52 S.W.G. diameter, 0.400 square inches total sectional area

Branch cables carrying 8.6 Amperes, comprised of 7 wires, each 0.64 S.W.G. diameter, 0.225 square inches total sectional area

Leads to lamps carrying 3 Amperes, comprised of 3 wires, each 0.29 S.W.G. diameter, 0.002 square inches total sectional area

Cargo light cables carrying 3 Amperes, comprised of 110 wires, each 0.076 S.W.G. diameter, square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Lead covered cables used in cabins of Engineers Officers & Captain, also Saloon & Navigation circuits - lead covered armoured braided cables used in all exposed positions, also Engine room Tween Decks, Crews Quarters Aft & File

Joints in cables, how made, insulated, and protected

Porcelain ciling roses with cast iron covers where exposed to damage

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances 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 yes

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 Through galvanised piping along shellin deck,

piping being protected by Hatch coaming bars.

Tween Deck Ventilation:—

8-1/2 H. Gibbs Ventilating Fan Motors fixed inside of Ventilating Trunk at Tween Deck level for ventilating Tween Decks & Cargo Holds 4 ft. x 4 ft. Fed from separate dis. Board in Generator Compartment each motor being controlled by an independent starter in Generator Compartment



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 & braided cables used in alleyways, Iron pipes to exposed deck lights*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *Lead covered & armoured cables used*

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

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

How are cables carried through beams *Lead bushes for lead covered cables* through bulkheads, &c. *W/F Glands below Shelter Deck*

How are cables carried through decks *Iron deck pipes*

Are any cables run through coal bunkers *no* or cargo spaces *no* or spaces which may be used for carrying cargo, stores, or baggage *yes* *Iron Pipes*

If so, how are they protected *Lead covered & braided cables*

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 *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 *—*

Is the installation supplied with a voltmeter *yes*, and with an amperemeter *yes*, fixed on *Main Switch*

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 *—*

Are any switches, fuses, 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 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.

FURNESS SHIPBUILDING CO. LIMITED.

*P. S. Glover*

Electrical Engineers

Date *29th April 1922*

COMPASSES.

Distance between dynamo or electric motors and standard compass *Approx 140 ft*

Distance between dynamo or electric motors and steering compass *" 130 "*

The nearest cables to the compasses are as follows:—

A cable carrying	Amperes	Distance from standard compass	Distance from steering compass
<i>6</i>	<i>3 ft</i>	<i>11 ft</i>	
<i>3</i>	<i>inside</i>		
<i>—</i>	<i>—</i>	<i>—</i>	<i>—</i>

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.

*J. M. Gordon*

Builder's Signature.

Date *29th April 1922*

GENERAL REMARKS.

*This installation has been efficiently fitted on board and proved satisfactory under working condition.*

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

*Y. R. L. 21-5-0-2/22*

*Applied for*

*Pa 27-6-22 K.H.*

*24/6/22*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 30 MAY. 1922

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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