

WED. APR. 19 1922

# REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 41833.

Port of GLASGOW Date of First Survey 27. 1. 22 Date of Last Survey 30. 3. 22 No. of Visits 8  
 No. in on the Iron or Steel S.S. SANTA MARIA Port belonging to LONDON  
 Reg. Book 39354 Built at PORT GLASGOW By whom R. DUNCAN & CO LTD When built 1922  
 Owners UNION OIL CO OF CALIFORNIA Owners' Address  
 Yard No. 361 Electric Light Installation fitted by MEERS TELFORD GRIFFITH & MACKAY When fitted 1922

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

TOTAL KW = 30

Two engines, enclosed forced lubrication single cylinder double acting 7 inch cylinder + 5 stroke  
 Dynamos open protected type compound wound direct coupled to engines

Capacity of Dynamo 137 Amperes at 110 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed middle platform of engine room Whether single or double wire system is used double

Position of Main Switch Board Beside dynamos having switches to groups 9 circuits of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each no auxiliary switch boards

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 none and at each position where a cable is branched or reduced in size none 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 porcelain & slate

Total number of lights provided for 250 arranged in the following groups:—

A Accommodation	66	lights each of	30 Watts	candle power requiring a total current of	19.80	Amperes
B Midships	45	lights each of	30 Watts	candle power requiring a total current of	13.50	Amperes
C Engines	36	lights each of	30 Watts	candle power requiring a total current of	10.80	Amperes
D Pump Rooms	15	lights each of	30 Watts	candle power requiring a total current of	11.70	Amperes
E Decks	30	lights each of	30 Watts	candle power requiring a total current of	9.00	Amperes
2 Mast head light with	1	lamps each of	32	candle power requiring a total current of	2.00	Amperes
2 Side lights with	1	lamps each of	32	candle power requiring a total current of	2.00	Amperes
3 Cargo lights of	6 lamps each	16	candle power, whether incandescent or arc lights	incandescent		

If arc lights, what protection is provided against fire, sparks, &c. no arc lamps

Where are the switches controlling the masthead and side lights placed In Chart Room

## DESCRIPTION OF CABLES.

Main cable carrying 140 Amperes, comprised of 37 wires, each .078 S.W.G. diameter, 0.150 square inches total sectional area  
 Branch cables carrying 19.80 Amperes, comprised of 19 wires, each .052 S.W.G. diameter, 0.040 square inches total sectional area  
 Branch cables carrying 13.50 Amperes, comprised of 7 wires, each .064 S.W.G. diameter, 0.022 square inches total sectional area  
 Leads to lamps carrying 2 Amperes, comprised of 3 wires, each .029 S.W.G. diameter, 0.002 square inches total sectional area  
 Cargo light cables carrying 3 Amperes, comprised of 3 wires, each .036 S.W.G. diameter, 0.003 square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

All cables are vulcanized india rubber and protected by lead sheathing  
 Main cables are braided and compounded over the lead and run in steel tubing  
 Accommodation lighting circuit wires are lead covered

Joints in cables, how made, insulated, and protected no joints

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances none 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 1055

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 Cables are led through ship in tubes, run under the fore and aft gangway. Cables are lead covered & braided



Lloyd's Register  
Foundation

002000-002012-0173



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 *has covered & braided in steel conduits galvanizing*

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat *has covered & braided in tubes*

What special protection has been provided for the cables near boiler casings *has covered & braided in tubes*

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

How are cables carried through beams *in tubes or lead covering through bulkheads, &c. W.T. Glands*

How are cables carried through decks *in Deck tubes (Water-tight)*

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

If so, how are they protected *—*

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 *Switchboard*

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 *Fittings have Double gasproof glasses.*

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.

*Selford & MacKay Ltd*

Electrical Engineers

Date *6/4/22*

COMPASSES.

Distance between dynamo or electric motors and standard compass *280 feet*

Distance between dynamo or electric motors and steering compass *340 feet*

The nearest cables to the compasses are as follows:—

A cable carrying	Ampères	Distance from standard compass	Distance from steering compass
<i>2.5</i>	<i>10</i>	<i>fitted inside</i>	<i>10</i>
<i>2.5</i>	<i>10</i>	<i>fitted inside</i>	<i>10</i>
<i>5</i>	<i>10</i>	<i>fitted inside</i>	<i>10</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 *any* course in the case of the standard compass and *nil* degrees on *any* course in the case of the steering compass.

*Robert Duncan & Co Ltd*

Builder's Signature.

Date *8/4/22*

GENERAL REMARKS.

*This installation has been fitted on board under special survey tested under full working conditions found satisfactory*

*It is submitted that this vessel is eligible for the RECORD.*

*FEF-22-10-0*  
*EXP 10-6*

*Paid 5/4/22*

*J. B. Rankin*  
*20/4/22*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

*GLASGOW 18/4/22*

*Elec. Light*



© 2019

Lloyd's Register Foundation

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.