

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 20 AUG 1929

Date of writing Report 19.8.1929 When handed in at Local Office 19.8.1929 Port of Middlesbrough

No. in Survey held at Hawerton Hall on Tees Date, First Survey 10<sup>th</sup> May Last Survey 8.8.1929.

Reg. Book.

(Number of Visits 2)

14708 on the Motor Vessel "Hothelocrown"

Tons { Gross 11999  
Net 7073

Built at Hawerton Hall Tees By whom built Furness Shipbuilding Co Ltd Yard No. 137 When built 1929

Owners British Mclassess Co Ltd Port belonging to Liverpool

Electric Light Installation fitted by Furness Shipbuilding Co Ltd Contract No. 137 When fitted 1929

## System of Distribution

Double wire ✓

Pressure of supply for Lighting 110 ✓ volts, Heating - volts, Power 110 volts.

## Direct or Alternating Current, Lighting

Direct ✓

Power

Direct ✓

If alternating current system, state frequency of periods per second

yes ✓

Has the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on or off

yes ✓

Generators, do they comply with the requirements regarding rating.

yes

, are they compound wound

yes

are they over compounded 5 per cent.

yes

, if not compound wound state distance between each generator

Where more than one generator is fitted are they arranged to run in parallel

no

, is an adjustable regulating resistance fitted in

series with each shunt field

yes

Are all terminals accessible, clearly marked, and furnished with sockets

yes

, are they so spaced or shielded that they cannot be accidentally earthed,

short circuited, or touched

yes

Are the lubricating arrangements of the generators as per Rule

yes

## Position of Generators

aft end of Machinery Space

is the ventilation in way of the generators satisfactory

yes

, are they clear of all inflammable material

yes

if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the generators

- and -

, are the generators protected from mechanical injury and damage from water, steam or oil

yes

are their axes of rotation fore and aft

yes

Earthing, are the bedplates and frames of the generating plant efficiently earthed

yes

are the prime movers and

their respective generators in metallic contact

yes

## Main Switch Boards, where placed

aft end of Machinery Space Near Generators

If the generators and main switchboard are not placed in the same compartment, is each generator provided with

a fuse on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard

Switchboards, are they placed in accessible positions, free from inflammable gases and acid fumes

yes

are they protected from mechanical injury and damage from water, steam or oil

yes

, if situated near unprotected

woodwork or other combustible material, state distance of same horizontally from or vertically above the switchboards

- and -

are they constructed wholly of durable, non-ignitable non-absorbent materials

yes

, is all insulation of high dielectric strength and of

permanently high insulation resistance

yes

, if semi-insulating material is used, are all conducting parts insulated from the slab

with mica or micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework

yes

and is the frame effectively earthed

yes

Are the fittings as per Rule regarding:— spacing or shielding of live parts

yes

, accessibility of all parts

yes

, absence of fuses on back of board

yes

, proportion of omnibus

bars

yes

, individual fuses to voltmeter, pilot or earth lamp

yes

, connections of switches

yes

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches.

Double pole circuit Breaker for each Generator, Double pole Switch of fuses for each outgoing circuit.  
Lead type fuses

Instruments on main switchboard 3 ammeters 2 voltmeters - synchronising device for paralleling purposes.

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system

2.10 watt lamps in series middle point earthed

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules.

yes

Joint Boxes Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule

yes



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W6-0038



**Cables:** Single, twin, concentric, or multicore *Single & twin* are the cables insulated and protected as per Tables IV or V of the Rules *IV*

**Fall of Pressure,** state maximum between bus bars and any point of the installation under maximum load *3.5v.*

**Cable Sockets and other connections,** are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets

*yes*  
**Paper Insulated Cables.** If cables are paper covered, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound

**Cable Runs,** are the cables fixed as far as possible in accessible positions not exposed to drip or accumulation of water or oil, or to high temperature from boilers, steam pipes, uptakes or other hot objects, or to avoidable risk of mechanical damage *Main feeder cables are run along the underside*

*of fore & aft gangway in galv iron casing. All cables which are exposed are Lead covered & Armoured*  
**Support and Protection of Cables,** state how the cables are supported and protected *Lead covered & Armoured cables are*

*supported by means of galv iron clips. Lead covered cables supported by brass clips*

If cables are run in wood casings, are the casings and caps secured by screws *-*, are the cap screws of brass *-*, are the cables run in separate grooves *-*. If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VIII *yes*

**Refrigerated Chambers,** if lights are fitted, are the cables and fittings in accordance with the special requirements *yes*

**Joints in Cables,** state if any, and how made, insulated, and protected

*Porcelain junction boxes protected with cast iron covers*

**Watertight Glands and Deck Tubes,** are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands

*yes*  
**Bushes in Beams and Non-watertight Partitions,** where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed *yes* state the material of which the bushes are made *Lead*

**Earthing Connections,** state what earthing connections are fitted and their respective sectional areas *Generator . 1*

*Switchboard . 1*

, are their connections made as per Rule *yes*

**Alternative Lighting,** are the groups of lights in the propelling machinery space arranged as per Rule *Yes*

**Emergency Supply,** state position and method of control of the emergency supply and how the generator is driven

**Navigation Lamps,** are these separately wired *yes*, controlled by separate switch and separate fuses *yes*, are the fuses double pole *yes*, are the switches and fuses grouped in a position accessible only to the officers on watch *yes*

has each navigation lamp an automatic indicator as per Rule *yes*

**Secondary Batteries,** are they constructed and fitted as per Rule

**Fittings,** are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight *yes*

are any fittings placed in spaces in which goods are liable to be stacked in close proximity to them; if so, how are they protected *none*

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected

*In pump rooms special gas light fittings*  
*Through galv iron tubes*

where are the controlling switches situated *Outside pump room entrance*

**Searchlight Lamps,** No. of *1*, whether fixed or portable *Portable*, are their fittings as per Rule *yes*

**Arc Lamps,** other than searchlight lamps, No. of *-*, are their live parts insulated from the frame or case *-*, are their fittings as per Rule

**Motors,** are their working parts readily accessible *yes*, are the coils self-contained and readily removable for replacement *yes*

are the brushes, brush holders, terminals and lubricating arrangements as per Rule *yes*, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material *yes*

are they protected from mechanical injury and damage from water, steam or oil *yes* are their axes of rotation fore and aft *yes*

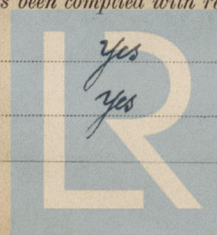
if situated near unprotected woodwork or other combustible material, are the motors of the totally enclosed, pipe ventilated, forced draught, drip or flame proof type *-*, if not of this type, state distance of the combustible material horizontally or vertically above the motors *-* and *-*

**Control Gear and Resistances,** are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule *yes*

**Lightning Conductors,** where lightning conductors are required, are these fitted as per Rule *yes*

**Ships carrying Oil having a Flash Point less than 150° F.** Have the special requirements of the Rules been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office



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## PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ... ..	2	35	110	38	500	Allen enclosed type engine. Steam	✓	✓
AUXILIARY ... ..								
EMERGENCY ... ..								
ROTARY TRANSFORMER								

## LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
ENG R/11451/2 DYN E/11452/2	MAIN GENERATOR...	2	.2500	37	.093	318	30	VARNISHED CAMBRIC	Lead covered
ENG R/11451/4 DYN E/11452/4	EQUALISER CONNECTIONS								Armoured and braided
	MAIN GENERATOR	2	.2500	37	.093	318	30		
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER...								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM	2	.0100	7	.044	30	20	V. I. R.	Lead covered
	BOILER ROOM								Armoured and braided
	ACCOMMODATION	2	.0100	7	.044	16.5	240		
	Engineers	2	.0100	7	.044	28.0	200		
	Navigation	2	.0100	7	.044	7.5	820		
	Sherry Equipment	2	.0100	7	.044	15.0	215		
	Moldships	2	.0600	19	.064	36.0	750		
	WIRELESS	2	.0100	7	.044	10.0	800	V. I. R.	L. b. a. B.
1659	SEARCHLIGHT	2	.0400	19	.052	60.0	1200		"
	MASTHEAD LIGHT	2	.0020	3	.029	36	420		
	SIDE LIGHTS	2	.0029	3	.029	36	80		L. b. a.
	COMPASS LIGHTS	2	.0020	3	.029	1	40		"
	POOP LIGHTS	2	.0030	3	.036	36	900		L. b. a. B.
	CARGO LIGHTS	2	.0100	7	.044	17.2	750		" "
	ARC LAMPS								
	HEATERS								

## MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP								
	MAIN BILGE LINE PUMPS								
	GENERAL SERVICE PUMP								
	EMERGENCY BILGE PUMP								
	SANITARY PUMP								
	CIRC. SEA WATER PUMPS								
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR								
	FRESH WATER PUMP								
	ENGINE TURNING GEAR								
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS								
	OIL FUEL TRANSFER PUMP								
	WINDLASS								
	WINCHES, FORWARD								
	WINCHES, AFT								
	STEERING GEAR—								
220377	(a) MOTOR GENERATOR	1	.1000	19	.083	MAX 200	200	V. I. R.	Lead covered
220378	(b) MOTOR	1	.1000	19	.083	MIN 100	200		Armoured and braided
0.5748	WORKSHOP MOTOR	3	.0100	7	.044	20			
0.5782	GALLEY BLOWER	"				8	220		
0.5783	VENTILATING FANS	"				8			
8.17601	GALLEY BLOWER	3	.0225	7	.064	18	220		
8.17602	CENTRIFUGAL	"				18			
8.17603	"	"				18			



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All Conductors are of annealed copper conforming to British Standard Specification No. 7.  
The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.  
The foregoing is a correct description.

F. W. FURNESS SHIPBUILDING CO. LIMITED

P. S. Glover

Electrical Engineer.

Date 9th Aug 1929

#### COMPASSES.

Distance between electric generators or motors and standard compass 230'

Distance between electric generators or motors and steering compass 220'

The nearest cables to the compasses are as follows:—

A cable carrying 1 Ampères 4 feet from standard compass 4 feet from steering compass.

A cable carrying Ampères feet from standard compass feet from steering compass.

A cable carrying Ampères feet from standard compass feet from steering compass.

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

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted yes

The maximum deviation due to electric currents 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.

F. W. FURNESS SHIPBUILDING CO. LIMITED

J. M. Gover

Builder's Signature.

Date 9th Aug 1929

Is this installation a duplicate of a previous case no. If so, state name of vessel ✓

General Remarks (State quality of workmanship, opinions as to class, &c.)

The materials and workmanship are good.

This electric installation has been fitted under special survey in accordance with the Rules and Approved Plans and has been tested with satisfactory results under working conditions and is, in my opinion, suitable for a vessel classed with this Society.

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

Elec. Light

YRM

21.8.29

Total Capacity of Generators 70 Kilowatts.

The amount of Fee ... £ 29-10-0

When applied for,

When received,

Travelling Expenses (if any) £

Committee's Minute

Assigned

Elec. Light

P. J. Man

Surveyor to Lloyd's Register of Shipping.

Im 228—Transfer.  
(The Surveyors are requested not to write on or below the space for Committee's Minute.)



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