

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) -7 SEP 1927

Date of writing Report 5.9.27 When handed in at Local Office 5.9.27 Port of MIDDLEBROUGH

No. in Survey held at Howerton Hall on Tues Date, First Survey 15.4.24 Last Survey 12.8.1924  
Reg. Book. Supplement (Number of Visits.....10.....)

42155 on the S.S. Otterhound Tons { Gross  
Net

Built at Howerton Hall / Tues By whom built Furness S/B Co Ltd Yard No. 121 When built 1927

Owners Coastal Tankers Limited Port belonging to London

Electric Light Installation fitted by Furness Shipbuilding Co Ltd Contract No. 121 When fitted 1927

System of Distribution Double wire Insulated

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

Direct or Alternating Current, Lighting Direct Power -

If alternating current system, state frequency of periods per second -

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. Level, if not compound wound state distance between each generator

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

Position of Generators Starboard side of Engine Room, Are the lubricating arrangements of the generators as per Rule yes

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 Starboard side of Engine Room

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 yes

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 switches of fuses for Generator & each outgoing circuit

Instruments on main switchboard 1 ammeters 1 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 across bus-bars & 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



**Cables:** Single, twin, concentric, or multicore 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. 3.8

**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. yes

**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 in iron piping, cables which are exposed are lead covered armoured cables

**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 are 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 -

**Joints in Cables,** state if any, and how made, insulated, and protected. Porcelain extensions in cast brass left cases

**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 .0400  
Switchboard .0045  
are their connections made as per Rule yes

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

**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 -

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected. Special Pump Room fittings (Gaslight)  
In iron pipes  
where are the controlling switches situated Outside pump room

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

**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 - , are the coils self-contained and readily removable for replacement - , are the brushes, brush holders, terminals and lubricating arrangements as per Rule - , are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material - , are they protected from mechanical injury and damage from water, steam or oil - , are their axes of rotation fore and aft - , 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 -

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

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	1	5	110	46	430	Sunderland Forge Co Open type engine			
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. A 953 DYN. A 393	MAIN GENERATOR...	2	.0225	7	.064	42.1	20'	V. I. R.	lead covered
	EQUALISER CONNECTIONS								armoured
	AUXILIARY GENERATOR								braided
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER...								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM	2	.0070	7	.036	10.5	18'	V. I. R.	
	BOILER ROOM								
	ACCOMMODATION MIDSHIP	2	.0100	7	.044	10.7	240'	V. I. R.	lead covered
	Aft Accommodation	2	.0070	7	.036	12.3	90'	V. I. R.	
	Navigation Inst	2	.0070	7	.036	8.6	250'	V. I. R.	braided
	WIRELESS								
	SEARCHLIGHT								
	MASTHEAD LIGHT...	2	.0020	3	.029		280'	V. I. R.	lead covered armoured
	SIDE LIGHTS...	2	.0020	3	.029		60'	V. I. R.	lead covered braided
	COMPASS LIGHTS...	2	.0020	3	.029		40'	V. I. R.	" " " "
	POOP LIGHTS...	2	.0020	3	.029		280'	V. I. R.	lead covered armoured
	CARGO LIGHTS...	2	.0020	3	.029		200'	V. I. R.	" " " "
	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								
	(a) MOTOR GENERATOR								
	(b) MAIN MOTOR								
	WORKSHOP MOTOR								
	VENTILATING FANS								

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.

*P. S. Glover.*

FAR FURNESS SHIPBUILDING Co. LIMITED

Electrical Engineers

Date 17th August 1927

COMPASSES.

Distance between electric generators or motors and standard compass

75'

Distance between electric generators or motors and steering compass

68'

The nearest cables to the compasses are as follows:—

A cable carrying 9 Ampères 3 feet from standard compass 3.6 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.

FURNESS SHIPBUILDING CO. LIMITED

*Jas. M. Robertson*

Builder's Signature.

Date 17th Aug 1927

Secretary.

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. The installation of electric lighting to this vessel has been carried out under special survey and in accordance with the Rules. The plant has been tested with satisfactory results and is, in my opinion, suitable for a classed vessel.*

*Elec. light*

*J.W.D.*  
7/9/27

Total Capacity of Generators 5 Kilowatts.

The amount of Fee ... £ 5.00

When applied for, 22.8.19.27

Travelling Expenses (if any) £ :

When received, 2.9.19.27

*M. R. A.*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

*Elec Light*

1m. 27. — Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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