

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office on 20 MAR 1924

Date of writing Report 10 When handed in at Local Office 19/3/10-24 Port of NEWCASTLE-ON-TYNE

No. in Survey held at NEWCASTLE-ON-TYNE Date, First Survey 11<sup>th</sup> July 1923 Last Survey 29<sup>th</sup> Feb 1924  
Book. Supp. (Number of Visits 20)

on the Wellfield Tons (Gross Net)

Built at Newcastle By whom built Tyne Iron Ship Co<sup>l</sup> Ltd. Yard No. 225 When built 1924

Owners Northern Petroleum Tanks S.S. Co<sup>l</sup> Ltd. Port belonging to Newcastle

Electric Light Installation fitted by Campbell Sherwood & Co<sup>l</sup> Ltd. Contract No. 225 When fitted 1924

System of Distribution Double wire system

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 —

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 overload 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 no

Are all terminals accessible and clearly marked yes, are they so spaced or shielded that they cannot be accidentally earthed, or short circuited yes

Are the lubricating arrangements of the generators as per Rule yes

Position of Generators Engine room aft on dynamo flat

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 axis 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 Engine room aft on dynamo flat

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, incombustible non-absorbent materials yes, is all insulation of high dielectric strength and permanently high insulation resistance yes, if semi-insulating material is used, are all conducting parts connected to one pole insulated from the slab with mica or micamite and the slab similarly insulated from its framework yes, and is the frame effectively earthed yes

Are the following fittings as per Rule, viz.: — 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

fuses on dynamo mains & on all outgoing circuits

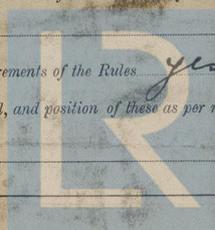
Instruments on main switchboard 2 ammeters 1 voltmeters — synchronising device for paralleling purposes.

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system earth lamps coupled to earth through switches & fuses

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

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

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**Insulation of Cables**, state type of cables, single or twin single + twin are the cables insulated and protected as per Tables III or IV of the Rules yes

**Fall of Pressure**, state maximum between bus bars and any point of the installation under maximum load 4.27

**Cable Sockets and other connections**, are the ends of all cables having a sectional area of 0.007 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 yes

**Support and Protection of Cables**, state how the cables are supported and protected lead covered cables run in galvanised steel tubing

If cables are run in wood casings, are the casings and caps secured by screws yes, are the cap screws of brass yes, are the cables run in separate grooves yes. If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VI 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 none made

**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 Positions**, 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 yes, 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 none fitted

**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, are separate screens provided for the use of oil and electric side lights yes, are separate oil lanterns provided for the mast head lights and side lights 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 no

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected glass guard with rubber rings protected by metal guards, how are the cables led in screwed steel tubing

where are the controlling switches situated in saloon alleyway

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

**Arc Lamps**, other than searchlight lamps, No. of 1, are their live parts insulated from the frame or case yes, are their fittings as per Rule yes

**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 axis 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 yes, if not of this type, state distance of the combustible material horizontally or vertically above the motors yes and yes

**Control Gear and Resistances**, are the generator field and motor speed regulators, starters and controllers constructed 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 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.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ...	2	10	110	91	350	Single cylinder open type steam 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. Amps.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR...	2	.1009	19	.083	91	18	Y.I.R.	lead covered
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER...								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM ...								
	BOILER ROOM ...	2	.01046	7	.044	19.2	120	Y.I.R.	lead covered
	Midship Acc <sup>n</sup>	2	.01462	7	.052	13.5	500	Y.I.R.	do
	Forward Acc <sup>n</sup>	2	.00701	7	.036	6.0	720	Y.I.R.	do
	Navigation	2	.00701	7	.036	7.02	510	Y.I.R.	do
	Cargo	2	.00701	7	.036	15.0	140	Y.I.R.	do
	Aft Acc <sup>n</sup>	2	.01462	7	.052	17.1	50	Y.I.R.	do
	WIRELESS ...	2	.01462	7	.052	15.0	520	Y.I.R.	do
	SEARCHLIGHT	2	.00194	3	.029	1.02	280	Y.I.R.	do
	Fore Mast Light	2	.00194	3	.029	1.02	200	Y.I.R.	do
	MASTHEAD LIGHT	2	.00322	1	.064	1.02	40	Y.I.R.	lead covered twin
	SIDE LIGHTS ...	2	.00322	1	.064	.28	10	Y.I.R.	Lead covered
	COMPASS LIGHTS ...	2	.00194	3	.029	1.02	320	Y.I.R.	do
	STERN LIGHTS ...	2	.00455	7	.029	3.6	60	Y.I.R.	bat type flex.
	CARGO LIGHTS ...								
	ARC LAMPS ...								
	HEATERS ...								

**MOTOR CONDUCTORS.**

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amps.	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 ...								
	WORKSHOP MOTOR	1	.01462	7	.052	25	40	Y.I.R.	Lead covered
	VENTILATING FANS								
	Galley motor	1	.00701	7	.036	12	60	do	do
	Oil separator	2	.01462	7	.052	17.0	16.0	do	do

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.

CAMPBELL & ISHERWOOD, LTD.

PER J. H. Wade Electrical Engineers.

Date 17th March 1924

COMPASSES.

Distance between electric generators or motors and standard compass 275 feet  
 Distance between electric generators or motors and steering compass 286 feet

The nearest cables to the compasses are as follows:—

A cable carrying 1.02 Amperes on the feet from standard compass 7 feet from steering compass.

A cable carrying 1.02 Amperes 7 feet from standard compass on the feet from steering compass.

A cable carrying 7.02 Amperes 8 feet from standard compass 12 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 in the case of the steering compass.

FOR AND ON BEHALF OF THE  
 TYNE IRON SHIP-BUILDING CO. LIMITED.

A. Thomson

Builder's Signature.

Date 17th March 1924

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 above installation is in accordance with the Society's Rules. The vessel is eligible in my opinion for notation elec light, wireless

It is submitted that  
 this vessel is eligible for  
 THE RECORD. elec light.  
J.W.F.  
24/3/24.

Total Capacity of Generators 24 Kilowatts

The amount of Fee ... £ 17 10/- { When applied for, 14/3/1924

Travelling Expenses (if any) £ : : { When received, See debit book.

W.T. Badger  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

Im. 822—Transfer.  
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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