

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 25 FEB 1931

Date of writing Report 19 When handed in at Local Office 24/2/31 Port of NEWCASTLE ON TYNE

No. in Surrey held at NEWCASTLE ON TYNE Date, First Survey 26 Jan Last Survey 6 July 1931
Reg. Book. (Number of Visits 3)

92501 on the S.S. SANDHOLM

Tons (Gross/Net) *1000*

Built at NEWCASTLE ON TYNE By whom built J. & D. MORRIS LTD Yard No. When built 1920

Owners HOLMS SAND & GRAVEL CO LTD Port belonging to BRISTOL

Electric Light Installation fitted by CAMPBELL & ISHERWOOD LTD Contract No. When fitted 1931

Is the Vessel fitted for carrying Petroleum in bulk No.

System of Distribution *Double wire*

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. *Yes*, 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 —

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 Pump Room*

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 Aft Pump 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 — 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 micaite 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 *main D.P. switch and fuses and S.P. switches and D.P. fuses for outgoing circuits.*

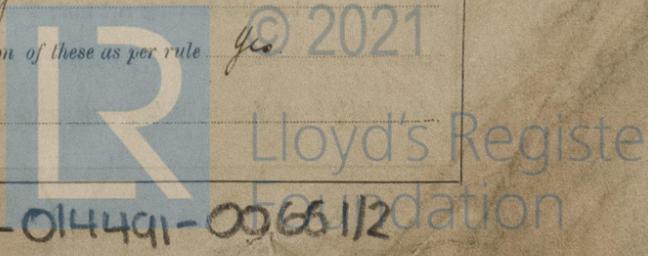
Instruments on main switchboard 1 ammeters 1 voltmeters — synchronising device for paralleling purposes.

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

connected through switches and fuses

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 Single are the cables insulated and protected as per Tables IV or V of the Rules Yes

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 2.0 volts

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 Yes

Support and Protection of Cables, state how the cables are supported and protected V.I.R. in Sealed Steel Conduit in Machinery Spaces & Holds, and Lead Covered Clipped up in Accommodation

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 None

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 —

—, are their connections made as per Rule —

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

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 None

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 Yes

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

—, how are the cables led —

where are the controlling switches situated —

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 —

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 —

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	45.5	325	S.C. Petter Oil Engine		
AUXILIARY								
EMERGENCY								
ROTARY TRANSFORMER								

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR	1	.0396	19	.052	45.5	64	26	V.I.R.	L.C., A. & Braided
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER									
ENGINE ROOM	1	.00299	3	.036	4.5	12	60	V.I.R.	Steel Pipe
AFT BOILER ROOM									
AUXILIARY SWITCHBOARDS									
ACCOMMODATION	1	.00299	3	.036	5	12	30	do	do
do	1	.00299	3	.036	2.5	12	80	do	do
WIRELESS									
SEARCHLIGHT									
MASTHEAD LIGHT	1	.00194	3	.029	.4	7.8	150	do	do
SIDE LIGHTS	1	.00194	3	.029	.4	7.8	40	V.I.R.	L.C.
COMPASS LIGHTS	1	.00194	3	.029	.4	7.8	10	do	do
STEER LIGHTS	1	.00194	3	.029	.4	7.8	120	V.I.R.	Steel Pipe
CARGO LIGHTS	1	.00194	3	.029	2.0	7.8	30	do	do
ARC LAMPS									
HEATERS									

MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
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.

CAMPBELL & ISHERWOOD, LTD

John Meade

Electrical Engineers.

Date *23rd Feb 1931*

COMPASSES.

Distance between electric generators or motors and standard compass *25 ft. Approx*

Distance between electric generators or motors and steering compass *20 ft. Approx*

The nearest cables to the compasses are as follows:—

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

A cable carrying *2.5* Ampères *6* feet from standard compass *6* 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 *any* course in the case of the standard compass, and *nil* degrees on *any* course in the case of the steering compass.

Builder's Signature. Date

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

The materials and workmanship were found to be good and sound.

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

See Report PA 11/3/31

Total Capacity of Generators *5* Kilowatts.

The amount of Fee ... £ *5 : 0 : 0* When applied for, **24 FEB 1931**

L.C. Clayton
Surveyor to Lloyd's Register of Shipping.

Travelling Expenses (if any) £ : : When received, *4/3/31*

Committee's Minute

Assigned

Elec Lt.



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Im. 8. 30. — Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)