

Rpt. 13.

REPORT ON ELECTRICAL EQUIPMENT.

No. 31628

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report

19

When handed in at Local Office

17 MAY 1935

Received at London Office

18 MAY 1935

No. in Survey held at
Reg. Book. Supp.

Sunderland

Date, First Survey

Port of SUNDERLAND.

3 Apr '35

Last Survey

May 14 1935

89982 on the

M. V. "KIRRIEMOOR"

(Number of Visits... 9)

Tons { Gross 4979
Net 3032

Built at Sunderland

By whom built W. Daxford Sons Ltd.

Yard No. 614

When built 1935

Owners Lord Runciman Shipping Co Ltd

Port belonging to

London

Electric Light Installation fitted by

Messrs Campbell Iskerwood & Co

Contract No.

When fitted 1935

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

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 temperature rise

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

Have certificates of test results for machines under 100 kw. been submitted and

approved

enclosed herewith Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing

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

Engine room S. Side forward.

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

Engine room S. Side forward.

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

materials

yes

, is all insulation of high dielectric strength and of permanently high insulation resistance

yes

is it of an approved type

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

, is the non-hygroscopic insulating material of an approved

type

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

, temperature rise of

omnibus bars

yes

, individual fuses to voltmeter, pilot or earth lamp

yes

, are moving parts of switches alive in the

"off" position

yes

are all screws and nuts securing connections effectively locked

yes

are any fuses fitted on the live side of

switches

yes

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

SPS + fuses on dynamos, SP COS + DP fuses on each outgoing circuit

Are turbine driven generators fitted with emergency trip switch as per rule

Are cupboards or compartments containing switchboards composed of

fire-resisting material or lined with approved material

Instruments on main switchboard

2

ammeters

2

voltmeters

—synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection

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

E lamps coupled to X through SP switches + fuses

Switches, Circuit Breakers and Fusible Cut-outs,

do these comply with the requirements of the Rules

yes

are the fusible cutouts of an approved type

yes

have the reversed

current protection devices been tested under working conditions 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, V, X or XI of the Rules Yes

If the cables are insulated otherwise than as per Rule, are they of an approved type 3.5

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

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

Paper Insulated and Varnished Cambric Insulated Cables.

If conductors are paper or varnished cambric insulated, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound Yes, or waterproof insulating tape 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

Are cables in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered or run in conduit Yes

Support and Protection of Cables, state how the cables are supported and protected In tween decks V.I.R. lapped & braced in heavy gauge conduit Machinery Spaces 5". Acc" lead covered cables clipped up

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 VIII Yes

Refrigerated Chambers, 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 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 Yes

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 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 Yes

where are the controlling switches situated Yes

are all fittings suitably ventilated Yes, are all switches and lampholders constructed wholly of non-ignitable, non-absorbent materials Yes

Heating and Cooking Appliances, are they constructed and fitted as per Rule Yes, are air heaters constructed and fitted as per Rule Yes

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

Are Lamps, other than searchlight lamps, No. of Yes, 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 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 Yes

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

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing Yes

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 Yes

are all fuses of the filled cartridge type Yes are they of an approved type Yes

If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed type approved by the Home Office Yes

Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule Yes



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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	12.5	110	114	375	Steam engines		
AUXILIARY ...								
EMERGENCY ...								
ROTARY TRANSFORMER								

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	Circuit.	Rule.			
MAIN GENERATOR ...	1	.1009	19	.083	114	119 ✓	30	V.I.R	L.C.B
EQUALISER CONNECTIONS ...									
AUXILIARY GENERATOR ...									
EMERGENCY GENERATOR ...									
ROTARY TRANSFORMER } MOTOR GENERATOR...									
ENGINE ROOM ...									
BOILER ROOM ...	1	.01046	7	.044	17.5	31 ✓	75	50	in pipe
AUXILIARY SWITCHBOARDS ...									
ACCOMMODATION Midships	1	.01046	7	.044	14.9	31 ✓	90	50	50
Cargo raft	1	.01046	7	.044	12.6	31 ✓	90	50	50
WIRELESS ...	1	.01046	7	.044	12	31 ✓	175	50	50
SEARCHLIGHT ...	1	.00194	3	.029	14	7.8 ✓	400	50	50
MASTHEAD LIGHT ...	1	.00194	3	.029	14	7.8 ✓	60	50	L.C
SIDE LIGHTS ...	1	.00194	3	.029	14	7.8 ✓	20	50	50
COMPASS LIGHTS ...	1	.00194	3	.029	14	7.8 ✓	500	50	in pipe
STEER LIGHTS ...	1	.0017	40	.0076	2.4	5.0 ✓	120	50	Cat Tyre
CARGO LIGHTS ...									
ARC LAMPS ...									
HEATERS ...									

MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Nominal 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 ...	1	1	.007	7	.036	17.5	24 ✓	75	V.I.R	in heavy gauge cond.
VENTILATING FANS Bales.	1	1	.007	7	.036	20.2	24 ✓	75	50	50
Crane	1	1	.007	7	.036	19	24 ✓	75	50	50
Shovels	1	1	.01	7	.044	25.5	31 ✓	100	50	50



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All Conductors are of annealed copper conforming to British Standard Specification No. 7 (or International Electro-technical Commission Publication No. 28).

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 *W. H. H. H. H.*

Electrical Engineers.

Date *16th May 1935*

COMPASSES.

Distance between electric generators or motors and standard compass *70 feet*

Distance between electric generators or motors and steering compass *64 feet.*

The nearest cables to the compasses are as follows:—

A cable carrying *.4* Amperes *on the* feet from standard compass *6* feet from steering compass.

A cable carrying *.4* Amperes *6* feet from standard compass *on the* feet from steering compass.

A cable carrying Amperes 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.

WILLIAM DOXFORD & SONS, Limited.

A. Newell

Managing Director.

Builder's Signature.

Date *17 May 1935*

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 instⁿ has been fitted out under special survey. The materials & workmanship good. On completion the instⁿ was tested under working conditions & found to be satisfactory. Insulation resistance good. Eligible, in my opinion to have notation D.F.*

With notation D.F.

W.H.H.

L.H.

22/5/35.

AL

Total Capacity of Generators *25* Kilowatts.

The amount of Fee ... £ *20* : - : When applied for, *15.5.35*

Travelling Expenses (if any) £ : : When received, *17.5.19.35* *How.*

W. T. Badger

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 24 MAY 1935

Assigned

See Std. J.E. 31628

2m.534.—Transfer.
The Surveyors are requested not to write on or below the space for Committee's Minute.)



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