

Rpt. 13.

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

No. 49292.

SEP 28 1938

Date of writing Report

When handed in at Local Office

26 SEP 1938

Port of

HULL

Date, First Survey

1.9.38

Last Survey

10.9.1938

(Number of Visits.....)

No. in Survey held at

Goole

Reg. Book.

83764

on the

M.V.

"SODALITY"

Tons

(Gross

851

Net

476

When built

1938.

Built at

Hullington

By whom built

R. Williamson

Yard No.

244

When fitted

1938

Owners

F. J. Edward &amp; Sons Ltd.

Port belonging to

Electric Light Installation fitted by

The Humber Electrical Engineering Co.

Contract No.

When fitted

1938

Is the Vessel fitted for carrying Petroleum in bulk

No.

System of Distribution

Parallel - Constant pressure - two wire.

Pressure of supply for Lighting

220

volts, Heating

volts, Power

220

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

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

Have certificates for generators under 100 kw. been supplied and approved

Certificates heretofore.

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. 40KW. Starboard - 18KW. Port.

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

Yes.

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 Port side adjacent to Generator

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.

is it of an approved type

Sondano

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.

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

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

No.

are all screws and nuts securing connections effectively locked

Yes.

are any fuses fitted on the live side of

switches

No.

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

Generators: - Double pole contact breaker with Overload trip.

Outgoing circuit. D.P. Switches &amp; fuses.

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

Yes.

Are cupboards or compartments containing switchboards composed of

fire-resisting material or lined with approved material

Yes.

Instruments on main switchboard

2

ammeters

1

volumeters

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

Earth lamps &amp; switches

Yes.

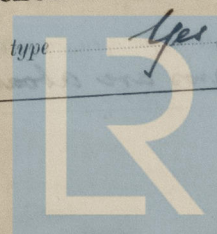
are the fusible cutouts of an approved type

Yes.

have the reversed

do these comply with the requirements of the Rules

Yes.



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of Fuel.

150°F.

ED.

w.

031



current protection devices been tested under working conditions *Yps* are all fuses labelled as per rule *Yps*

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

**Cables:** Single, twin, concentric, or multicore *Single* are the cables insulated and protected as per Tables IV, V, X, XI, XII or XIII of the Rules *Yps*

If the cables are insulated otherwise than as per Rule, are they of an approved type *Yps* **Fall of Pressure,** state maximum between bus bars and any point of the installation under maximum load *Light 2 volts Power 5 volts*

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

**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 *Yps*, or waterproof insulating tape *Yps*

**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 *Yps* are cables laid under machines or floorplates *Yps* if so, are they adequately protected *Yps*

Are cables in machinery spaces, galleys, lavatories, bathrooms and latrines lead covered or run in conduit *Yps*

**Support and Protection of Cables,** state how the cables are supported and protected *Clipped to steel work or run in conduit*

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

**Refrigerated Chambers,** are the cables and fittings in accordance with the special requirements *Yps*

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

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

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

**Earthing Connections,** state what earthing connections are fitted and their respective sectional areas *Yps* are their connections made as per Rule *Yps*

**Alternative Lighting,** are the groups of lights in the propelling machinery space arranged as per Rule *Yps* **Emergency Supply,** state position and method of control of the emergency supply and how the generator is driven *Yps*

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

has each navigation lamp an automatic indicator as per Rule *Yps* **Secondary Batteries,** are they constructed and fitted as per Rule *Yps* are they ventilated as per Rule *Yps*

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

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

where are the controlling switches situated *Yps*

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

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

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

**Motors,** are their working parts readily accessible *Yps* are the coils self-contained and readily removable for replacement *Yps* are the brushes, brush holders, terminals and lubricating arrangements as per Rule *Yps* are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material *Yps* are they protected from mechanical injury and damage from water, steam or oil *Yps* are their axes of rotation fore and aft *Yps* 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 *Yps* if not of this type, state distance of the combustible material horizontally or vertically above the motors *Yps* and *Yps*

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing *Yps* have certificates for all motors for essential services been supplied and approved *Yps* **Control Gear and Resistances,** are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule *Yps* **Lightning Conductors,** where lightning conductors are required, are these fitted as per Rule *Yps*

**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 *Yps* are all fuses of the fitted cartridge type *Yps* are they of an approved type *Yps*

If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed flameproof type approved for use in dangerous spaces *Yps*

**Spare Gear,** if the vessel is for open sea service have spares been supplied as per Rule *Yps* are they suitably stored in dry situations *Yps*

*Scotch 64 Spans are aboard remainder to be checked & Green fitted? - See letter dated 21-9-38.*

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 ...	Gne	40	230	182	1000	60 BHP. Chrysler Heavy Oil Engine	Heavy Oil.	Above 150° F.	
AUXILIARY ...	Gne	18	"	82	"	30 - - - - -	do	do	
EMERGENCY ...	✓	Lawrence Scott Dynamo's cross 77419 + 77420 respectively.							
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 ...	2	0.150	19	.072	182	194	110	V.I.R.	L.C.
EQUALISER CONNECTIONS ...	✓								
AUXILIARY GENERATOR ...	Gne	0.075	19	.072	82	97	36	do	Conduit.
EMERGENCY GENERATOR ...	✓								
ROTARY TRANSFORMER	✓								
MOTOR GENERATOR ...	✓								
ENGINE ROOM ...	Gne	0.0015	1	.044	2	6.1	60	do	L.C. & Arm.
BOILER ROOM ...	✓								
AUXILIARY SWITCHBOARDS									
Navigation	Gne	0.003	3	.036	2	12	270	do	Conduit.
ACCOMMODATION									
Forward	Gne	0.0045	7	.029	6	18.2	240	do	Conduit
Aft	Gne	0.01	7	.044	12	31	72	do	do
Small Sub Circuit	Gne	0.0015	1	.044	1	6.1	50	do	L.C.
WIRELESS	✓								
SEARCHLIGHT	✓								
MASTHEAD LIGHT	Gne	0.0015	1	.044	0.3	6.1	260	do	L.C. & Arm.
SIDE LIGHTS	Gne	"	1	.044	0.3	"	40	do	do
COMPASS LIGHTS	Gne	"	1	.044	0.3	"	24	do	do
POOP LIGHTS	Gne	"	1	.044	0.3	"	280	do	Conduit
CARGO LIGHTS	Gne	0.003	3	.036	Gne	12	30	do	L.C.
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 ...	Gne	Gne	0.075	19	.072	93	97	140	V.I.R.	L.C.
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	Gne	Gne	0.06	19	.064	68.5	83	420	V.I.R.	Conduit
WINCHES, FORWARD	Gne	Gne	0.06	"	"	64	"	390	"	"
WINCHES, AFT	Gne	"	"	"	"	"	"	120	"	"
STEERING GEAR—										
(a) MOTOR GENERATOR...	✓									
(b) MAIN MOTOR	Gne	Gne	0.01	7	.044	20	31	270	"	"
WORKSHOP MOTOR	✓									
VENTILATING FANS	✓									
Oil Separator	✓	Gne	0.01	7	.044	18	31	50	"	"
Motor	✓	Gne	0.002	3	.029	1.5	7.8	50	"	"
Capstan	✓	Gne	0.03	19	.044	52	53	65	"	"



The Electrical Equipment is installed in accordance with the approved plans.  
All Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.  
The foregoing is a correct description.

*W. E. Sturges*

Electrical Engineers.

Date

#### COMPASSES.

Minimum distance between electric generators or motors and standard compass

10 feet.

Minimum distance between electric generators or motors and steering compass

18 feet.

The nearest cables to the compasses are as follows:—

A cable carrying 2 Amperes feet from standard compass 15 feet from steering compass.

A cable carrying 2 Amperes feet from standard compass feet from steering compass.

A cable carrying 20 Amperes 10 feet from standard compass 18 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 No degrees on Any course in the case of the standard

compass, and No degrees on Any course in the case of the steering compass.

PER PRO

THE DOOLE SHIPBUILDING & REPAIRING CO. LTD.

*L. F. Briggs*

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, etc.)

This Electric installation has been fitted on board under Special Survey in accordance with the approved plans & the Rules. The workmanship & materials are good & when tested under full working conditions & subjected to the tests prescribed in the Rules it was found satisfactory in every respect. The Electrician's Spans require to be completed. It is stated these will be checked on board at Greenlith.

*Noted*

18/10/38.

Total Capacity of Generators 58 Kilowatts.

The amount of Fee ... £ 28: 6: 27 SEP 1938

When applied for.

When received.

Travelling Expenses (if any) £

Committee's Minute

Assigned

2m. 12. 38.—Transfer. The Surveyors are requested not to write on or below the space for Committee's Minute.)



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