

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

MAY 10 1939

Date of writing Report

19

When handed in at Local Office

11: 4: 1039

Port of

Glasgow

No. in Survey held at

Dumbarton

Date, First Survey

13: 10: 38

Last Survey

20: 3: 1939

Reg. Book.

89828 on the

" ROYAL DAFFODIL "

(Number of Visits.....)

Tons

Gross

2060

Net

1046

Built at

Dumbarton

By whom built

Wm Deuny & Bros Ltd

Yard No.

1330

When built

1939

Owners

General Steam Nav. Co Ltd.

Port belonging to

London

Electric Light Installation fitted by

Wm Deuny & Bros Ltd

Contract No.

1330

When fitted

1939

Is the Vessel fitted for carrying Petroleum in bulk

no

System of Distribution

two wire

Pressure of supply for Lighting

220

volts, Heating

220

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

yes

, 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

yes

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

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

Are the lubricating arrangements of the generators as per Rule

yes

Position of Generators

in engine room

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

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

near generators

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

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

Sindampo

, 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

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

each generator controlled by T.P. Circuit breakers with O.L. and R.C. trips. Final lub. pump and aux air compressor controlled by S.P. overload C. Breakers on one pole and fuse on the other pole, remaining outgoing circuits controlled by D.P. switch and fuses.

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

yes

Instruments on main switchboard

3

ammeters

3

voltmeters

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

yes

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

earth lamps

Switches, Circuit Breakers and Fusible Cut-outs,

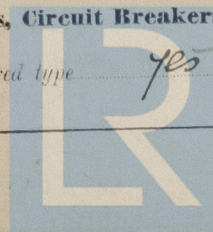
do these comply with the requirements of the Rules

yes

are the fusible cutouts of an approved type

yes

have the reversed



Lloyd's Register
Foundation

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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 twin 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 5.5 Volts. Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load yes. 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 Cables clipped.

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 none. 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 lead sheath efficiently earthed by means of clips or binding glands. 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 in special compartment controlled from its own switchboard generator driven by I.C. engine.

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 storeholds 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, how are the cables led 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 five 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 where possible, 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 fitted 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.

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	3	100	220	455	535	I.C. engine.	oil.	above 150°F.
AUXILIARY								
EMERGENCY	1	8	220	37	850	I.C. engine.	oil.	above 150°F.
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 Nominal Area per Pole Sq. Ins.	No.	Diameter.	Circuit.	Rule.			
MAIN GENERATOR	1	.75	91	.103	455	461	20	Rubber	L.C.B.
EQUALISER CONNECTIONS	1	.3	37	.103	-	240	10	"	"
AUXILIARY GENERATOR									
EMERGENCY GENERATOR	1	.0145	7	.052	37	37	30	"	L.C.
ROTARY TRANSFORMER									
ENGINE ROOM	1	.003	3	.036	7	12	60	"	L.C.B.
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
VENT. FANS. SECT. PANEL	1	.06	19	.064	65	83	244	"	L.C.
ENG. ROOM AUX "N"	1	.04	19	.052	52	64	100	"	L.C.B.
" " " "P"	1	.04	19	.052	58	64	80	"	"
NAVIGATION BRIDGE	1	.003	3	.036	8	12	70	"	L.C.
ACCOMMODATION FOR'D S.B.	1	.0145	7	.052	30	37	110	"	L.C.
AFT S.B.	1	.0045	7	.029	15	18.2	244	"	L.C.
FOR'D OFFICER'S ENG. LGT. CREW. AFT.	1	.003	3	.036	8	12	360	"	L.C.
	1	.003	3	.036	6	12	200	"	L.C.
WIRELESS	1	.0045	7	.029	12	18.2	140	"	L.C.
SEARCHLIGHT	1	.002	3	.029	18	7.8	300	"	L.C.
MASTHEAD LIGHT	1	.002	3	.029	18	7.8	60	"	L.C.
SIDE LIGHTS	1	.002	3	.029	1	7.8	15	"	L.C.
COMPASS LIGHTS	1	.15	37	.072	140	152	160	"	L.C.
CHILL ROOM S.B.	1	.25	37	.093	180	214	280	"	L.C.
SALOON PANTRY S.B.	1	.25	37	.093	190	214	160	"	L.C.
GALLEY UNITS S.B.									
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 Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP	1	1	.007	7	.044	31	31	140	Rubber	L.C.B.
MAIN BILGE LINE PUMPS	1	1	.007	7	.044	31	31	130	"	L.C.B.
GENERAL SERVICE PUMP	1	1	.01	7	.044	31	31	70	"	L.C.
EMERGENCY BILGE PUMP										
SANITARY PUMP										
CIRC. SEA WATER PUMPS	2	1	.06	19	.064	72.5	83	300	"	L.C.B.
CIRC. FRESH WATER PUMPS										
AIR COMPRESSOR	1	1	.25	37	.093	202	214	86	"	L.C.B.
FRESH WATER PUMP	1	1	.003	3	.036	10.5	12	170	"	L.C.B.
ENGINE TURNING GEAR	2	1	.007	7	.036	21	24	390	"	L.C.B.
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS	2	1	.12	37	.064	122	130	500	"	L.C.B.
OIL FUEL TRANSFER PUMP	2	1	.002	3	.029	4.6	7.8	230	"	L.C.B.
WINDLASS	1	1	.06	19	.064	79	83	320	"	L.C.
WINCHES, FORWARD CAPSTAN.	1	1	.06	19	.064	79	83	440	"	L.C.
WINCHES, AFT										
STEERING GEAR										
(a) MOTOR GENERATOR	1	1	.01	7	.044	29.6	31	440	"	L.C.
(b) MAIN MOTOR										
WORKSHOP MOTOR										
VENTILATING FANS										
OIL PURIFIERS	1	1	.003	3	.036	8.5	12	60	"	L.C.B.
LUB. OIL HEATERS	3	1	.0045	7	.029	16	18.2	186	"	L.C.B.
GALLEY RANGE	1	1	.3	37	.103	236	240	200	"	L.C.

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

For WILLIAM DENNY & BROTHERS Limited

W. Russell Director.

Electrical Engineers.

Date 5-4-39

COMPASSES.

Distance between electric generators or motors and ~~standard~~ compass

30 feet

Distance between electric generators or motors and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying 1 Ampères led into feet from ~~standard~~ compass — feet from steering compass.

A cable carrying 6 Ampères 6 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 any course in the case of the ~~standard~~ compass, and — degrees on — course in the case of the steering compass.

For WILLIAM DENNY & BROTHERS Limited

W. Russell Director.

Builder's Signature.

Date 5-4-39

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.)

The electrical equipment of this vessel has been fitted on board under special survey, tested under full working conditions and found satisfactory. The materials and workmanship are good.

Noted
19/5/39

RB

11/4/39

Total Capacity of Generators 308 Kilowatts.

The amount of Fee ... £ 47 : 18 :

(45 GLASGOW £ 38 : 6 : 5)
(15 LONDON £ 9 : 11 : 7)

Travelling Expenses (if any) £ 1 - 0 - 8 :

LONDON EXP.

When applied for, from
LONDON 18 MAY 1939

When received.

7. 6. 19 39 7/6.

R.I. Kurchishin. A. Gaffner
Surveyors to Lloyd's Register of Shipping.

Committee's Minute

GLASGOW 9 - MAY 1939

Assigned

SEE ACCOMPANYING MACHINERY REPORT



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