

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 10 JUN 1931

Date of writing Report 14. 5. 1931 When handed in at Local Office 8. 6. 1931 Port of GLASGOW.

No. in Survey held at GREENOCK. Date, First Survey 14-8-30 Last Survey 29-5-1931
Reg. Book. (Number of Visits 13)92012, on the DIESEL-ELECTRIC VESSEL "PERMIAN" Tons { Gross 8955
Net 5747

Built at GREENOCK. By whom built SCOTTS SHIPBUILDING & ENG. CO. LTD. No. 551 When built 1931

Owners ATLANTIC OIL SHIPPING CO. Port belonging to PANAMA.

Electric Light Installation fitted by SCOTTS SHIPBUILDING & ENG. CO. LTD. Contract No. 551 When fitted 1931.

Is the Vessel fitted for carrying Petroleum in bulk YES.

System of Distribution TWO WIRE - POWER. THREE WIRE - LIGHTING

Pressure of supply for Lighting 125 volts, Heating / volts, Power 250 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 /

Generators, do they comply with the requirements regarding rating YES, are they compound wound SHUNT & INTERPOLES

are they over compounded 5 per cent. /, if not compound wound state distance between each generator THREE FEET

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

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 BOTTOM PLATFORM MAIN ENGINE 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 NONE SO FITTED 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 ON SPECIAL SWITCHBOARD FLAT IN MAIN ENGINE 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 NONE SO FITTED 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 micanite 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 /, 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 FIVE D.P.D.T. SWITCHES FOR EXCITERS. FOUR T.P.D.T. SWITCHES FOR MAIN GENERATORS. ONE COUPLING SWITCH FOR BUS BARS ON SINGLE GENERATOR RUNNING. THREE D.P.S.T. & TWENTYONE D.P.D.T. SWITCHES FOR FEEDER CIRCUITS

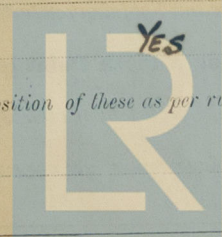
Instruments on main switchboard TWELVE ammeters THIRTEEN voltmeters ONE SPEED INDICATING device for RUNNING purposes.

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

TWO C.Z. 500V. VOLTMETERS, & TWO EARTH LAMPS WITH ALARM BELL

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



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Lloyd's Register Foundation

003138-003146-0133 '13

PARTICULARS OF GENERATING PLANT (PROPULSION)

DESCRIPTION	NUMBER	RATED	AT		WHERE DRIVEN BY I.C. ENGINE		
OF GENERATOR	OF	K.W.	VOLTS	AMPS.	R.P.M.	DRIVEN BY	FUEL USED
MAIN	4	600	250	2400	225	CARELS-INGERSOLL-RAND	
						DIESEL ENGINE	DIESEL OIL
EXCITER	4	75	250	300	225	EXCITER IS MOUNTED ON EXTENSION OF MAIN GENERATOR SHAFT	ABOVE 150°F

PROPULSION CONDUCTORS

DESCRIPTION	NUMBER OF CONDUCTORS PER POLE	AREA IN SQ. INS.	COMPOSITION OF STRAND NUMBER	DIA. INS.	MAX. CURRENT AMPS	APPROX. LENGTH L.R.R. FEET	INSULATION	PROTECTION
MAIN GENERATORS	4	2.974	91	.103	2400	60	CANBRIC	L.C.A.
EXCITERS	1	2.024	37	.103	300	90	"	"
PROPULSION MOTOR (DOUBLE UNIT)	4	2.974	91	.103	2230	102	"	"

PARTICULARS OF PROPULSION MOTOR

DESCRIPTION	B.H.P.	VOLTS	AMPS	R.P.M.	WINDING	RATING
B.T.H. DOUBLE UNIT TYPE	2800	1000	2230	95	SHUNT	CONTINUOUS

Cables: Single, twin, concentric, or multicore *SINGLE TWIN THREE* 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 *FIVE 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 *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 *IN ANGLE IRON STRONGBACKS BETWEEN GENERATORS & SWITCHBOARD, ELSEWHERE IN ENGINE ROOM ETC. CLIPPED TO SOLID S.I. TRAYS, OVER DECK IN CHANNEL IRON TROUGH WITH WOOD COVER.*

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, 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 *PORCELAIN CONNECTORS IN GASTIGHT C.I. BOXES*

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 *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 *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 *NONE SO FITTED*, are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *GASTIGHT FITTINGS*, how are the cables led *L.C.A. CABLES ON SOLID S.I. TRAYS*

where are the controlling switches situated *IN ENGINE ROOM*

Searchlight Lamps, No. of *ONE*, whether fixed or portable *FIXED*, 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 *GENERALLY*, 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 *NONE SO FITTED*, if not of this type, state distance of the combustible material horizontally or vertically above the motors *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*

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. (PROPULSION, POWER & LIGHTING)

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 ...	4	600	250	2400	225	CARELS-INGERSOL-RAND DIESEL ENG.	DIESEL OIL	ABOVE 150 F.
AUXILIARY ...	1	35	250	140	450	" " " " "	" "	" "
EMERGENCY ...								
EXCITERS	4	75	250	300	225	MOUNTED ON EXTENSION OF MAIN GENERATOR SHAFTS		
ROTARY BALANCER	1	7.5	250	50	1350			
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 Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR ...	4	2.914	91	.103	2400	2656	60	CAMBRIC	L.C. & A.
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR...	1	.4	19	.083	140	141	180	"	"
EMERGENCY GENERATOR									
ROTARY TRANSFORMER { MOTOR GENERATOR...									
ENGINE ROOM...	1	.003	3	.036	10	10.8	100	"	"
BOILER ROOM...									
AUXILIARY SWITCHBOARDS									
BALANCER	1	.04	19	.052	50	70	40	"	"
FORWARD POWER	1	.302	37	.103	212	346	900	"	" Phos. BRONZE
EXCITERS	1	.302	37	.103	300	346	144	"	"
ACCOMMODATION ...	1	.007	7	.036	9.4	23	264	"	"
WIRELESS ...	1	.01	7	.044	10	31.5	252	"	"
SEARCHLIGHT ...	1	.003	3	.036	4	10.8	44	"	"
MASTHEAD LIGHT ...	1	.003	3	.036	.32	10.8	192	"	"
SIDE LIGHTS ...	1	.003	3	.036	.32	10.8	192	"	"
COMPASS LIGHTS ...	1	.003	3	.036	.08	10.8	20	"	"
POOP LIGHTS ...									
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 Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP	1	1	.022	7	.064	25.7	54	132	CAMBRIC	L.C. & A.
PUMP ROOM BILGE PUMP AFT	1	1	.01	7	.044	7.8	28	174	"	"
MAIN BILGE LINE PUMPS	1	1	.022	7	.064	26.7	54	120	"	"
PUMP ROOM BILGE PUMP FWD	1	1	.12	37	.064	170	157	162	"	"
GENERAL SERVICE PUMP	1	1	.01	7	.044	8.98	28	114	"	"
CAPSTAN	1	1	.04	19	.052	30.9	70	150	"	"
EMERGENCY BILGE PUMP	1	1	.005	7	.029	2.5	16.2	60	"	"
SANITARY PUMP	2	1	.04	19	.052	31.5	70	162	"	"
CIRC. SEA WATER PUMPS	1	1	.005	7	.029	2.5	16.2	60	"	"
GYRO PILOT MOTOR	1	1	.003	3	.036	6.3	10.8	138	"	"
CIRC. FRESH WATER PUMPS	2	1	.04	19	.052	31.5	70	162	"	"
AIR COMPRESSOR	1	1	.003	3	.036	6.3	10.8	138	"	"
FRESH WATER PUMP	1	1	.003	3	.036	6	10.8	32	"	"
GYRO D.C. MOTOR	1	1	.003	3	.036	5	10.8	16	"	"
ENGINE TURNING GEAR	1	1	.003	3	.036	5	10.8	16	"	"
GYRO GENERATOR	1	1	.005	7	.029	12.8	16.2	198	"	"
ENGINE REVERSING GEAR	2	1	.003	3	.036	8.4	10.8	180	"	"
LUBRICATING OIL PUMPS	1	1	.12	37	.064	212	226 (WT)	160	"	"
OIL FUEL TRANSFER PUMP	2	1	.015	7	.052	35.5	37	240	"	"
WINDLASS	1	1	.007	7	.036	17.8	23	126	"	"
WINCHES, FORWARD	1	1	.015	7	.052	35.5	37	360	"	"
OIL FUEL TRANSFER PUMP FWD	1	1	.01	7	.044	18.2	28	126	"	"
WINCHES, AFT	1	1	.003	3	.036	4.5	10.8	48	"	"
REFRIGERATING MOTOR	1	1	.04	19	.052	31.6	70	186	"	"
STEERING GEAR—	1	1	.01	7	.044	18.5	28	186	"	"
SPERRY (a) MOTOR GENERATOR	1	1	.04	19	.052	31.6	70	186	"	"
(b) MAIN MOTOR	1	1	.01	7	.044	18.5	28	186	"	"
WORKSHOP MOTOR	1	1	.04	19	.052	44.5	70	60	"	"
VENTILATING FAN (PROPULSION MOTOR)	1	1	.076	19	.072	99	117	162	"	"
FIRE & STANDBY PUMP	2	1	.4	61	.093	400	417	174	"	"
CARGO PUMPS	1	1	.003	3	.036	5.5	10.8	184	"	"
VACUUM HEATING PUMP	1	1	.04	19	.052	33.4	70	58	"	"
DONKEY BOILER PUMP	1	1	.005	7	.029	14.6	16.2	72	"	"
WASTE HEAT " " FAN	1	1	.003	3	.036	6.4	10.8	78	"	"
SWITCHBOARD VENT	1	1	.003	3	.036	1.6	10.8	24	"	"

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.

SCOTT'S SHIPBUILDING & ENGINEERING COMPANY, LIMITED

Electrical Engineers.

Date

June 2nd 1931

ELECTRICAL MANAGER

COMPASSES.

Distance between electric generators or motors and standard compass

TWENTY FEET

Distance between electric generators or motors and steering compass

FIFTEEN FEET

The nearest cables to the compasses are as follows:—

A cable carrying .08 Ampères IN feet from standard compass feet from steering compass.

A cable carrying .8 Ampères 7 feet from standard compass feet from steering compass.

A cable carrying .5 Ampères 7 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

degrees on

ALL

course in the case of the standard

compass, and

degrees on

course in the case of the steering compass.

SCOTT'S SHIPBUILDING & ENGINEERING COMPANY, LIMITED.

A. H. Elms

Builder's Signature.

Date

2/6/31

Director

Is this installation a duplicate of a previous case

Yes

If so, state name of vessel

"Brunswick"

General Remarks (State quality of workmanship, opinions as to class, &c.)

This installation has been fitted on board under special survey, tested under full working conditions and found satisfactory. The materials and workmanship were found to be good and sound.

Total Capacity of Generators

Kilowatts.

The amount of Fee

See General Report

Travelling Expenses (if any) £ 2 : 2 : 0

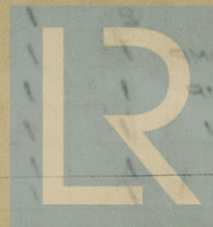
Committee's Minute

GLASGOW 9-JUN 1931

Assigned

Elec. Light

Surveyor to Lloyd's Register of Shipping.



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