

REPORT ON ELECTRIC FITTINGS.

No. 7755

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

21 NOV 1927

Date of writing Report 12th Nov 1927 When handed in at Local Office 18th Nov 1927 Port of Trieste Received at London Office

No. in Survey held at Trieste Date, First Survey 17th March Last Survey 6th Oct 1927
Reg. Book. 42717 on the Motor Vessel "SUMATRA" (Number of Visits... 10)

Built at Trieste By whom built Cantieri San Rocco (S.T.T.) Yard No. 753. Tons { Gross 6126 Net 3801 When built 1927.

Owners Marittima Italiana Port belonging to Union

Electric Light Installation fitted by Stabilimenti Tecnici Sreestuis Contract No. When fitted 1927.

System of Distribution Two wire direct current ✓

Pressure of supply for Lighting 110 ✓ 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 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 3 of 66 KW. Yes. ✓, 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. ✓

Position of Generators Two on port side engine room - one on starboard side. One in thrust recess ✓

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 in engine room port 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 ✓ and ✓

are they constructed wholly of durable, non-ignitable non-absorbent materials Marble ✓, 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 micamite 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. ✓

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 Generators - two pole

Circuit breakers with overload and reverse current trips and with equalizer switches

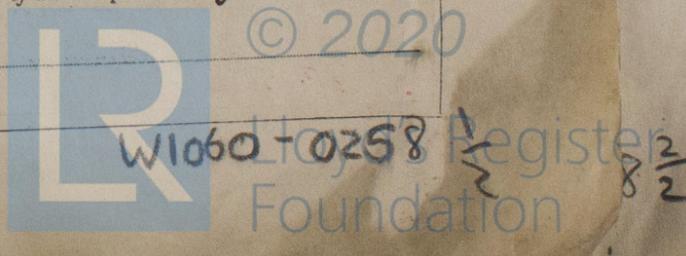
electrically arranged as per Rule. Outgoing circuits. two pole knife switches with quick release.

Instruments on main switchboard 3 ammeters 3 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 Lamps to earth.

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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Cables: Single, twin, concentric, or multicore *Single & twin* 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 *4-5 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 *supported by iron clips and protected by sheet iron when necessary.*

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 *wood*

Earthing Connections, state what earthing connections are fitted and their respective sectional areas *Switchboard frame is mass of iron and is in metallic contact with the ship's structure.*

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 *none.*

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *none.*

how are the cables led

where are the controlling switches situated

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

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 *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 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 *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

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	3	66	220	300	420	2 Cylinder Diesel engine	Diesel oil	Above 150°F.
AUXILIARY	1	37	220	168	500	Chari arm for thrust shaft with friction clutch		
EMERGENCY								
ROTARY TRANSFORMER	1	18	220-110	118	1400			

LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor Sq. MM.	COMPOSITION OF STRAND.		Total Maximum Current Ampères.	Approximate Length (Lead and Return) METRES.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR	1	324	61	2.6	300	30	India Rubber	Lead - Steel wire
	EQUALISER CONNECTIONS	1	99	37	1.85	168	30	do	do
	AUXILIARY GENERATOR	1	189			168		do	do
	EMERGENCY GENERATOR							do	do
	ROTARY TRANSFORMER	1	38	65	1.9	118	20	do	do
	AUXILIARY SWITCHBOARDS							do	do
	ENGINE ROOM	1	4.5	4	0.9	22	18	do	do
	BOILER ROOM							do	do
	ACCOMMODATION								
	Galley and bread room	1	14	4	1.6	448	10	"	do
		6	25	19	1.3	9.24	10	"	do
		5	25	19	1.3	22.52	78	"	Steel wire net.
		4	14	7	1.6	26.	40	"	do
	WIRELESS	1	6.7	4	1.1	6.8	88	do	do
	SEARCHLIGHT	1	25	19	1.3	45	180	do	Lead steel wire
	MASTHEAD LIGHT	1	2.5	1	1.8	1	96 FORWARD 180 AFT.		do
	SIDE LIGHTS	1	2.5	1	1.8	1	15		do
	COMPASS LIGHTS	1	2.5	1	1.8	1	12		do
	POOP LIGHTS	1	2	1	1.6	1	190		do
	CARGO LIGHTS	1	25	19	1.3	36	40		do
	ARC LAMPS								do
	HEATERS								do

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor Sq. MM.	COMPOSITION OF STRAND.		Total Maximum Current Ampères.	Approximate Length (Lead and Return) METRES.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP	1	51	19	1.85	93	18	India Rubber	Lead - Steel wire
	MAIN BILGE LINE PUMPS	1	4.5	4	0.9	18.6	20.	do	do
	GENERAL SERVICE PUMP	1	14	4	1.6	372	12.	do	do
	EMERGENCY BILGE PUMP							do	do
	SANITARY PUMP							do	do
	CIRC. SEA WATER PUMPS	* 1	51	19	1.85	93	15	do	do
	CIRC. FRESH WATER PUMPS							do	do
	AIR COMPRESSOR							do	do
	FRESH WATER PUMP	1	2.5	1	1.8	7.44	16	do	do
	ENGINE TURNING GEAR	1	6.7	4	1.1	29.7	42.	do	do
	ENGINE REVERSING GEAR							do	do
	LUBRICATING OIL PUMPS	* 1	51	19	1.85	93	14.	do	do
	OIL FUEL TRANSFER PUMP	1	25	19	1.3	56.	3	do	do
	WINDLASS	1	129	37	2.1	205	130.	do	do
	WINCHES, FORWARD	1	159	37	2.35	274.6.	90	do	do
	WINCHES, AFT	1	159	37	2.35	274.6.	92.	do	do
	STEERING GEAR							do	do
	(a) MOTOR GENERATOR	1	51	19	1.85	78	142	do	do
	(b) MAIN MOTOR	1	51	19	1.85	91	12	do	do
	WORKSHOP MOTOR	1	4.5	4	0.9	12.76.	26.	do	do
	VENTILATING FANS							do	do

* One 25 HP motor drives a circulating sea water pumps and a lubricating oil pumps. A second 25 HP motor drives a lubricating oil pump alone.

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.

Ing. Massimo Venturini Electrical Engineers. Date *17-11-27*

COMPASSES.

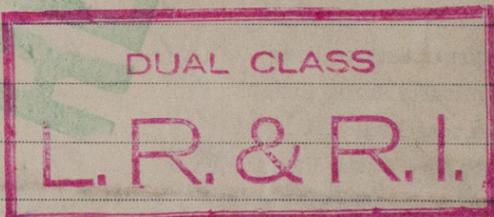
Distance between electric generators or motors and standard compass *35 m*
 Distance between electric generators or motors and steering compass *30 m*
 The nearest cables to the compasses are as follows:—
 A cable carrying *3* Ampères *4 m* net from standard compass *3.5 m* net from steering compass.
 A cable carrying *4* Ampères *4 m* net from standard compass *3.5 m* net from steering compass.
 A cable carrying *25* Ampères *5 m* net from standard compass *4.5 m* net 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 *none* degrees on *✓* course in the case of the standard compass, and *✓* degrees on *✓* course in the case of the steering compass.

Stabilimento Tecnico Triestino

Ing. Venturini Builder's Signature. Date *17-11-27*

Is this installation a duplicate of a previous case *no* If so, state name of vessel *Similar to Helas.*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The electric installation of this vessel has been fitted on board in accordance with the requirements of the Rules. The generators and motors were tested in the shops before being fitted on board, and on completion, the whole installation under full working conditions with satisfactory results.*
Unaltered fitted.



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

1m.127.—Transfer. (The Surveyor's fee requested not to a rate on or below the scale for Committee's Minute.)

Total Capacity of Generators *235* Kilowatts.

The amount of Fee ... *£ 3850.-* }
 Travelling Expenses (if any) £ : : }
 When applied for, *RI*
 When received, *26.3.28*

V. Lockroy
23/11/27

V. Lockroy
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 25 NOV 1927*
 Assigned *Elec. Lt.*

