

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

29 APR 1948

Received at London Office

Date of writing Report **24th March 48** When handed in at Local Office **24th March 48** Port of **MOBILE, ALABAMA**
 No. in Survey held at **Mobile, Alabama** Date, First Survey **17 Sept. 1947** Last Survey **18th March 1948**
 Reg. Book. (Number of Visits **-25-**)
 on the **S.S. "SOUTH AFRICA STAR" ex HMS "Reaper"** Tons { Gross **8015**
 Net **4635**
 Built at **Tacoma, Washington** By whom built **Seattle Tacoma Shipbldg. Co.** Yard No. **49** When built **1944**
 Owners **Blue Star Line, Ltd.** Port belonging to **London**
 Electric Light Installation fitted by **Gulf Shipbuilding Corp.** Contract No. **-** When fitted **1948**
 Is the Vessel fitted for carrying Petroleum in bulk **No**

System of Distribution **Two Wire D.C**
 Pressure of supply for Lighting **120** volts, Heating **None** volts, Power **230** 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 **A.B.S.**
 Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing **A.B.S.**
 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 **Stbd. side Eng. & Boiler Rm., 1st Platform**, is the ventilation in way of the generators satisfactory **Yes**
 are they clear of all inflammable material **Yes** if situated near unprotected **None** and **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 **Outboard of Generators, 1st Platform**
 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 **Yes** 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 **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 **A.I.E.E. 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 **Magnetic Overload and Reverse Current Trip Circuit Hgrs for Generators, Thermal Trip Circuit Hgrs for Outgoing circuits, and lever knife switches for Equalizer Circuits**
 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 **5** ammeters **6** volt-meters **0**
 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 **Indicator Lts. and Voltmeter**
 Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules **A.I.E.E.** are the fusible cutouts of an approved type **-** have the reversed



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 004745-004754-0078 1/2
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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 **Yes** are the cables insulated and protected as per Tables IV, V, X or XI of the Rules **A.I.E.E.**

If the cables are insulated otherwise than as per Rule, are they of an approved type **Yes** Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load **2.5% Ltg. 4% Power** 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 **No**

Support and Protection of Cables, state how the cables are supported and protected **By Hangers or Clips Welded to Deck and Protected by Steel Plate Where Necessary**

If cables are run in wood casings, are the casings and caps secured by screws **None**, 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 **A.I.E.E.**

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**

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 **Malleable Iron**

Earthing Connections, state what earthing connections are fitted and their respective sectional areas **Steel Supports Welded to Steel B'h'd. or Deck**

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 **Automatic and Manual Control from Emergency Switchboard. Diesel Power for Emergency Generator Located Stbd. Aft of Navigation Deck.**

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 **-**

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 **Steel Guards**

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected **Explosion Proof Fixtures** how are the cables led **Armored Cables clipped to Deck**

where are the controlling switches situated **Outside of Compartment**

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 **A.I.E.E.**, are air heaters constructed and fitted as per Rule **None**

Searchlight Lamps, No. of **One**, whether fixed or portable **Fixed**, 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 **None**

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

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing **Control Gear and Resistances**, are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule **A.I.E.E.** Lightning Conductors, where lightning conductors are required, are these fitted as per Rule **None** 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 **-** are all fuses of the filled cartridge type **-** are they of an approved type **-**

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

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.	Amperes.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.	
MAIN (Power)	3	250	240	1040	1200	Steam Turbine	-	-	
AUXILIARY (Ltg.)	2	35	120	292	1750	Electric Motor	-	-	
EMERGENCY ...	1	25	240/120	104	1450	Diesel Engine	Diesel	Above 150° F	
Inter-Communication	2	5	120 AC	42	3600	Electric Motor			
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. Cm.	No.	Diameter Ins.	In Circuit.	U.S.C.G.			
MAIN GENERATOR ...	2	829300	127	.081	1080	1294 1720	80'	Asbestos, Varnished Cambric, & Flammable	Braided Metal Armor
EQUALISER CONNECTIONS	1	829300	127	.081	260	647 245	80'	"	"
AUXILIARY GENERATOR Ltg. ...	1	413600	127	.057	292	414 530	70'	"	"
EMERGENCY GENERATOR...	1	124900	61	.045	104	133 248	40'	"	"
ROTARY MOTOR ...	1	22800	7	.057	28.7	46.5 72	30'	"	"
TRANSFORMER { GENERATOR...	1	30860	19	.040	42	54.5 6100	30'	"	"
ENGINE ROOM ...	1	38910	19	.045	52	63 700	40'	"	"
BOILER ROOM ...	1	49080	19	.051	57	74 176	168	"	"
AUXILIARY SWITCHBOARDS ...									
Fwd. Cargo		521600	127	.064	154	474 648	336	"	"
Aft Cargo	1	413600	127	.057	101	414 530	300	"	"
Fore's'le	1	124900	61	.045	45	133 248	440'	"	"
Capstan Rm.	1	124900	61	.045	31	133 248	440'	"	"
2nd Dk. Amidship	1	38910	19	.045	42	63 100	140	"	"
ACCOMMODATION ...									
Br. & Boat Dks.	1	124900	61	.045	77	133 248	194'	"	"
Pass. Dk.	1	157600	61	.457	129	155 289	166'	"	"
Shelt. Dk.	1	124900	61	.045	118	133 248	86'	"	"
WIRELESS ...	1	60090	37	.040	75	83 132	240'	"	"
SEARCHLIGHT ...	1	14340	7	.045	8.3	34.5 55	300'	"	"
MASTHEAD LIGHT ...	1	4110	7	.024	.5	11.5	450'	Rubber	Lead & Armor
SIDE LIGHTS ...	1	4110	7	.024	.5	11.5	100'	"	"
COMPASS LIGHTS ...	1	4110	7	.024	.3	11.5	50'	"	"
POOP LIGHTS ...	1	4110	7	.024	.5	11.5	600'	"	"
CARGO LIGHTS ...	1	4497	7	.025	2.5	15 20	100'	Asbestos, V.C. & Flammable	Armor
ARC LAMPS ...		None							
HEATERS ...		None							

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. Cm.	No.	Diameter Ins.	In Circuit.	U.S.C.G.			
BALLAST PUMP ...	1	1	98820	61	.040	75	98 183	90'	Asbestos, Varnished Cambric, & Flammable	Braided Metal Armor
MAIN BILGE LINE PUMPS	1	1	98820	61	.040	75	98 183	70'	"	"
GENERAL SERVICE PUMP	2	1	521600	127	.064	357	474 648	80'	"	"
Fire PUMP	1	1	22800	7	.057	29	46.5 72	40'	"	"
Aux. Sea Circ. Pump	1	1	157600	61	.051	108	155 289	100'	"	"
CIRC. SEA WATER PUMPS	1	1	521600	127	.064	365	474 648	30'	"	"
CONDENSATE PUMPS...	2	1	98820	61	.040	75	98 183	50'	"	"
Aux. Condensate Pumps	2	1	22800	7	.064	29	46.5 72	50'	"	"
AIR COMPRESSOR ...	1	1	198700	61	.057	145	251 332	40'	"	"
FRESH WATER PUMP ...	2	1	4497	7	.025	3.3	15 20	40'	"	"
ENGINE TURNING GEAR ...	1	1	22800	7	.057	30	46.5 72	120'	"	"
Main Feed Pumps	2	1	198700	61	.057	145	182 332	80'	"	"
LUBRICATING OIL PUMPS ...	2	1	124900	61	.045	92	133 248	140'	"	"
OIL FUEL TRANSFER PUMP ...	1	1	75850	37	.045	55	98 155	100	"	"
WINDLASS ...	1	1	413600	127	.057	265	414 530	600'	"	"
WINCHES, FORWARD ...	12	1	198700	61	.057	180	251 332	40'	"	"
FORCED DRAUGHT	2	1	198700	61	.057	180	251 332	100'	"	"
WINCHES, AFT... ..	8	1	198700	61	.057	180	251 332	60'	"	"
Priming Pumps	2	1	4497	7	.025	8	15 20	90'	"	"
Hot Water Pump	1	1	4497	7	.025	2	15 20	100'	"	"
STEERING GEAR—										
(a) MOTOR GENERATOR ...	(None)									
(b) MAIN MOTOR ...	2	1	296400	91	.057	240	316 430	70'	"	"
WORKSHOP MOTOR. (Lathe).	1	1	14340	7	.045	19.8	34.5 55	70'	"	"
VENTILATING FANS. Toilets..	1	1	4497	7	.025	8	15 20	100'	"	"
Mach. Space Supply	4	1	14340	7	.045	23	34.5 55	140'	"	"
" " Exh.	1	1	4497	7	.025	6.3	15 20	230'	"	"
Qt's Supply	2	1	9030	7	.036	16	25.5 41	90'	"	"
Fuel Oil Service	1	1	22800	7	.057	29	46.5 72	100'	"	"
Lube Oil Purifier	1	1	4497	7	.025	8	15 20	120'	"	"
Ice Water Circ. Pump	1	1	4497	7	.025	3.3	15 20	110'	"	"

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.

Electrical Engineers.

Date

COMPASSES.

Distance between electric generators or motors and standard compass

Radio Generators & Motors 15'. Emergency Generator 50'

Distance between electric generators or motors and steering compass

10'. 40'

The nearest cables to the compasses are as follows:—

A cable carrying 0.10 Ampères Light ~~on~~ standard compass Light ~~on~~ steering compass.

A cable carrying 10.0 Ampères 18 feet from standard compass 15 feet from steering compass.

A cable carrying 2.0 Ampères 10 feet from standard compass 8 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 Steady course in the case of the standard compass, and Nil degrees on Steady course in the case of the steering compass.

Builder's Signature.

Date

March 1948

Is this installation a duplicate of a previous case Yes If so, state name of vessel S.S. "RIOUW" Mob.rpt.2522

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

The electrical installation, to the American Bureau of Shipping requirements has been examined throughout and found to be generally in accordance with the Rules. The materials and workmanship are good. The installation has been tested under full working conditions and found satisfactory and is, in my opinion, eligible to be classed with the machinery of this vessel.

Noted
R
12.5.48

Total Capacity of Generators 750 Kilowatts.

The amount of Fee ... £472.00

When applied for,

30 March 1948

When received,

19

Travelling Expenses (if any) £5.00

Committee's Minute

Assigned to be ...

NEW YORK APR 7 1948

Chapman
Surveyor to Lloyd's Register of Shipping.



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