

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 19 APR 1950

Date of writing Report 6th February 1950. When handed in at Local Office 7th February 1950. Port of Leith

No. in Survey held at Leith. Date, First Survey 2.12.49. Last Survey 29.1.1950. Reg. Book. (No. of Visits Five)

40524 on the Twin screw Motor Vessel "MOMBASA" Tons (Gross 2213 Net 1090)

Built at Leith. By whom built Henry Robb Ltd. Yard No. 379. When built 1.50.

Owners British India Steam Navigation Co. Ltd. Port belonging to London

Installation fitted by Henry Robb, Ltd. When fitted 1.50.

Is vessel equipped for carrying Petroleum in bulk No. Is vessel equipped with D.F. Yes. E.S.D. Yes. Gy.C. - Sub. Sig. -

Plans, have they been submitted and approved Yes. System of Distribution Two wire Voltage of Lighting 220.

Heating 220 Power 220 D.C. or A.C., Lighting D.C. Power D.C. If A.C. state frequency -

Prime Movers, has the governing been found as per Rule when full load is thrown on and off Yes. Are turbine emergency governors fitted with a trip switch -

Generators, are they compound wound Yes, and level compounded under working conditions Yes.

if not compound wound state distance between generators - and from switchboard - Are the generators arranged to run in parallel Yes.

are shunt field regulators provided Yes. Is the compound winding connected to the negative or positive pole negative

Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing Yes. Have certificates of test for machines under 100 kw. been supplied Yes.

and the results found as per Rule Yes.

Position of Generators Two on Port Side and One on Starboard Side of Engine Room at Starting Platform Level. FF, PA & S.

is the ventilation in way of generators satisfactory Yes. are they clear of inflammable material and protected from mechanical injury and damage from water, steam and oil Yes.

Switchboards, where are main switchboards placed Engine Room Casings Aft.

are they in accessible positions, free from inflammable gases and acid fumes and protected from mechanical injury and damage from water, steam and oil Yes.

what insulation is used for the panels Air damped. if of synthetic insulating material is it an Approved Type Yes.

if of semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule -

Is the construction as per Rule, including locking of screws and nuts Yes. Description of Main Switchgear for each generator and arrangement of equaliser switches Double Pole Hand operated Air break circuit breakers with no volt, reverse current and time lagged overload releases. Third blade makes first and breaks last for equaliser.

and the switch and fuse gear (or circuit breakers) for each outgoing circuit Double pole, hand operated air break, time lagged overload circuit breakers for food winches & windlass. Double pole switches fuses for all other services.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes. Instruments on main switchboard 3.

ammeters 3 voltmeters - synchronising devices. For compound machines in parallel are the ammeters and reversed current protection devices connected on the pole opposite to the equaliser connection Yes.

Earth Testing, state means provided Two lamps in series, common connection earthed.

Switches, Circuit Breakers and Fuses, are they as per Rule Yes.

are the fuses an Approved Type Yes.

make of fuses "Artis" are all fuses labelled Yes.

If circuit breakers are provided for the generators, at what overload do they operate 50% approx (800 amps).

and at what current do the reversed current protective devices operate 80 amps.

Joint Boxes, Section Boards and Distribution Boards, is the construction as per Rule Yes.

Cables, are they insulated and protected as per Rule Yes.

if otherwise than as per Rule are they of an Approved Type -

state maximum fall of pressure between bus bars and any point under maximum load 8.8.

are the ends of all cables having a sectional area of 0.01 square inch and above provided with soldering sockets Yes.

Are all paper insulated and varnished cambric insulated cables sealed at the ends Yes.

Are all the cable runs in accessible positions, not exposed to drip or accumulation of water or oil, high temperatures or risk of mechanical damage Yes.

are any cables laid under machines or floorplates No.

if so, are they adequately protected -

Are cables in machinery spaces, galleys, laundries, etc., lead covered Yes or run in conduit -

or of the "HR" type -

State how the cables are supported or protected In engine room small wiring is steel wire armoured & braided; larger wiring is braided over lead. Cables are clipped to perforated tray plate or bulkheads & protected by sheet metal where necessary. Cables about weather decks are of "H.R." type in conduit.

Are all lead sheaths, armouring and conduits effectually bonded and earthed Yes.

Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands Yes.

where unarmoured cables pass through beams, etc., are the holes effectively bushed Yes.

Refrigerated chambers, are the cables and fittings as per Rule Yes.

Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule Yes.

Emergency Supply, state position Boat deck Starboard (Emergency Pet).

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Navigation Lamps, are they separately wired Yes controlled by separate double pole switches and fuses Yes. Are the switches and fuses in a position accessible only to the officers on watch Yes, is an automatic indicator fitted Yes. Is an alternative supply provided Yes.

Secondary Batteries, are they constructed and fitted as per Rule Yes, are they adequately ventilated Yes.

state battery capacity in ampere hours 65.

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weather proof Yes.

Are any fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present No, if so, how are they protected -.

and where are the controlling switches fitted -. Are all fittings suitably ventilated Yes.

Searchlight Lamps, No. of -, whether fixed or portable -, are they of the carbon arc or of the filament type -.

Heating and Cooking, is the general construction as per Rule -, are the frames effectually earthed -, are heaters in the accommodation of the convection type -. Motors, are all motors constructed and installed as per Rule and placed in well-ventilated compartments in which inflammable gases cannot accumulate and protected from damage from water, steam and oil Yes.

Are motors coupled to oil fuel transfer and pressure pumps capable of being stopped from a position accessible in the event of fire in the pump compartment Yes. Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing Yes.

Have certificates of test for motors under 100 BHP intended for essential sea services been supplied and the results found as per Rule Yes.

Control Gear and Resistances, are they constructed and fitted as per Rule Yes. Lightning Conductors, where required are they fitted as per Rule -. Ships carrying Oil having a Flash Point less than 150° F. Have all the special requirements of the Rules for such ships been complied with Yes, are all fuses of an Approved Cartridge Type Yes, make of fuse -. Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships Yes. Are the cables lead covered as per Rule -.

E.S.D., if fitted state maker Mareconi location of transmitter Frames 95-96 Starboard and receiver Frames 41-42 Port.

Spare Gear, if the vessel is for open sea service have spares been provided as per Rule and suitably stored in dry situations Yes.

Insulation Tests, has the insulation resistance of all circuits and apparatus been tested and found satisfactory Yes.

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	MAKER.	RATED AT				PRIME MOVER.	
			Kilowatts per Generator.	Volts.	Ampères.	Revs. per Min.	TYPE.	MAKER.
MAIN	3	Lawrence Scott & Sons.	120	220.	545	600.	6 VCSZ Oil Engine	Ruston Hornsby Ltd.
EMERGENCY ROTARY TRANSFORMER	1	Lawrence Scott & Sons.	10.	220	45.5	1000	3VSHZ Oil Eng.	Ruston Hornsby Ltd.
	1	Power Equipment Co.		230	11	3000		

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
		No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR	120	2	34/.083	545	572		V.C.	Lead Covered Braided
" " EQUALISER		1	34/.083	-	-		"	" " "
EMERGENCY GENERATOR	10	1	4/.064	45.5	42		V.C.	Lead Covered Braided
ROTARY TRANSFORMER MOTOR		1	4/.029	10	88		V.I.R.	" " "
" " GENERATOR		1	3/.036	5	7		"	" " "

MAIN DISTRIBUTION CABLES (to Section Boards, Distribution Fuse Boards, etc.).

DESCRIPTION.							
Engine Room Auxiliaries	1	19/.083.	156	185	135	V.C.	Lead Covered Braided
Engineers Workshops.	1	4/.044	19	22	15	V.I.R.	" " "
Hold Ventilation	1	4/.029.	14	11	42	"	" " "
Refrigerating machinery Ventilation	1	3/.036				"	" " "
Refrigerating machinery main supply.	1	19/.052.	104	101	90.	V.C.	" " "
Refrigerating Pumps.	1	4/.064.	40	42	30.	"	" " "
Refrigerating Circulating Fans.	1	4/.064.		42	30.	"	" " "
Both Winches & Windlass.	1	34/.083.	242	286.	285	"	" " "
After Winches.	1	19/.083.	156	185.	300	"	" " "
Normal supply to Emergency Switchboard	1	19/.052	84.5	101.	165	"	" " "

LIGHTING, HEATING, WIRELESS, NAVIGATION LIGHTS, ETC., CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
Pantry Heating Mists	1	4/.044	16	22	135	V.I.R.	Lead Covered & Braided
After Lighting	1	4/.044	29	22	240	"	" " "
Boat Lighting	1	4/.036.	18.5	17	360	"	" " "
Unberthed Passenger Accommodation Lighting	1	4/.036.	18.5	17	120	"	" " "
Engineers Accommodation Lighting	1	4/.029	4	11	90	"	" " "
Officers Accommodation Lighting	1	4/.029	8.5	11	180	"	" " "
Second Class - Port Lighting	1	4/.029	13	11	120	"	" " "
Second Class - Starboard Lighting	1	4/.029	4.5	11	120	"	" " "
Third Class - Lighting	1	4/.029	15	11	180	"	" " "
Engine Room Lighting	1	4/.036	15	17	60	"	" " "
Miscellaneous Bridge Lighting etc.	1	4/.044	12	22	190	"	" " "
Navigation Lighting etc.	1	4/.036	10	17	90.	"	" " "
Emergency Lighting	1	4/.029	8	11	90	"	" " "
Winches	1	4/.036	15	17	90	"	" " "
Radar	1	4/.044	20	22	200	"	" " "

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.					
Oil Pumps.	2	0.5	1	3/.036	2.6	7	80 V.I.R. Lead Covered & Braided.
Dual Oil Transfer Pump.	1	3	1	4/.029	13	11	100 " " "
Domestic Fresh Water Pump.	1	3	1	4/.029	13	11	45 " " "
Engine Turning Gear	2	5	1	4/.044	20	22	60 " " "
Generator S.W. Circulating Pump.	1	2.5	1	4/.029	11	11	100 " " "
Stand by Sub. Oil Pump.	1	6	1	4/.044	24	22	90 " " "
Stand by Fresh Water Circulating Pump.	1	4	1	4/.044	28	22	75 " " "
Sanitary Pump.	1	4	1	4/.044	28	22	60 " " "
Fresh Water Circulating Pump.	1	4	1	4/.044	28	22	60 " " "
Salt Water Circulating Pump.	1	4	1	4/.044	28	22	45 " " "
General Service Stand by G.W. Pump	1	11	1	4/.064	44	42	135 V.C. " " "
Bilge Ballast Pump.	1	11	1	4/.064	44	42	135 " " "
Air Compressor.	1	20	1	19/.052.	44	101.	90 " " "
Steering Gear	1	8	1	4/.064	32	42	240 " " "
Winches	4	31.	1	19/.064	124	130.	120 " " "
Refrigerating Compressor	2	8	1	4/.064	32	42	50 " " "
Refrigerating Water Pump.	2	2	1	3/.036	8	4	60 V.I.R. " " "
Refrigerating Brine Pump.	2	2	1	3/.036	8	4	60 " " "
Refrigerating Circulation Fans.	4	0.125	1	3/.036.	1	4	40. " " "
Windlass.	1	31	1	19/.064	116	130.	135 V.C. " " "
Emergency Diesel Bilge Pump.	1	10	1	4/.064	40	42	55 " " "
No 1 Hold - Vent Fan.	1	1.25	1	3/.036.	5.5	4	120 V.I.R. " " "
No 3 Hold - Vent Fan.	2	1.25	1	3/.036	5.5	4	150 " " "
Refrigerating Mach. Space-Vent Fan	2	0.5	1	3/.036.	2.5	4.	30 " " "
Engine Room Vent - Fans.	3	1.6	1	3/.036.	6.6	4.	45 " " "
Accommodation Vent Fans.	2	0.75	1	3/.036	4.5	4	120 " " "
" " "	3.	0.4	1	3/.036.	2	4	180 " " "
" " "	3	1.5	1	3/.036.	4	4	45 " " "
" " "	3	2.25	1	4/.029	10	11	180. " " "
Gas Oil Transfer Pump	1	1	1	3/.036	5	4	80 " " "
Winches	2	43	1	19/.083.	162	185.	75 V.C. " " "

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The Electrical Equipment is installed in accordance with the approved plans and the requirements of the Rules.

All Insulated Conductors are guaranteed to have been tested at the maker's works as specified in the Rules.

The foregoing is a correct description.

HENRY ROBB LIMITED

J. Sherriff

DIRECTOR Electrical Contractors.

Date *7 Feb 1950*

COMPASSES.

Have the compasses been adjusted under working conditions *Yes*.

HENRY ROBB LIMITED

J. Sherriff

Builder's Signature.

Date *7 Feb 1950*

DIRECTOR

Have the foregoing descriptions and schedules been verified and found correct *Yes*.

Is this installation a duplicate of a previous case *No*. If so, state name of vessel *-*

Plans. Are approved plans forwarded herewith *Yes*. If not, state date of approval *-*

Certificates. Are certificates of test for motors engaged on essential sea services and generators forwarded herewith *Yes*.

General Remarks. (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.)

This installation has been efficiently fitted on board in accordance with the Rules and approved plans.

The materials and workmanship have been found good.

On completion this installation was found satisfactory under full working conditions.

Noted ~~Ex~~ 5/5/50.

Total Capacity of Generators *370* Kilowatts.

The amount of Fee ... £ *95 : 10* ✓
Leith 4% { *47 : 15*
Glasgow 4% { *47 : 15*

When applied for, *7-2-1950*

When received, *19*

Travelling Expenses (if any) £ : : *19*

A. Campbell
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

GLASGOW 18 APR 1950

Assigned SEE ACCOMPANYING MACHINERY REPORT

Re: State

Impress. Transfer. (MADE AND PRINTED IN ENGLAND.)
(The Surveyors are requested not to write on or below the space for Committee's Minute.)

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