

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) 29 NOV 1944

Received at London Office.....

Date of writing Report 16TH NOVEMBER 1944 When handed in at Local Office 19TH NOVEMBER 1944 Port of GLASGOW

No. in Survey held at PORT GLASGOW Date, First Survey 17 AUGUST Last Survey 24TH NOVEMBER 1944
Reg. Book. (Number of Visits.....)

on the 'NADIR' Tons { Gross 5497 Net 3007

Built at PORT GLASGOW By whom built MESSRS LITHGOWS Yard No. 1004 When built 1944

Owners ASIATIC STEAM NAVIGATION CO LTD Port belonging to LONDON

Electrical Installation fitted by MESSRS SUNDERLAND FORGE & ENGINEERING CO LTD Contract No. 1004 When fitted 1944

Is vessel fitted for carrying Petroleum in bulk..... Is vessel equipped with D.F. - E.S.D. - Gy.C. - Sub.Sig. -

Have plans been submitted and approved YES System of Distribution TWO WIRE Voltage of supply for Lighting 110

Heating Power 110 Direct or Alternating Current, Lighting D.C. Power D.C. If Alternating Current state periodicity - Prime Movers,

has the governing been tested and found as per Rule when full load is suddenly thrown on and off YES Are turbine emergency governors fitted with a trip switch as per Rule - Generators, are they compound wound YES, are they level compounded under working conditions YES

if not compound wound state distance between generators - and from switchboard - Where more than one generator is fitted are they arranged to run in parallel No, 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 - Have certificates of test for machines under 100 kw. been supplied YES and the results found as per rule YES Are the lubricating arrangements and the construction of the generators as per rule YES Position of Generators IN ENGINE-ROOM.

is the ventilation in way of generators satisfactory YES are they clear of inflammable material YES, if situated near unprotected combustible material state distance from same horizontally - and vertically - are the generators protected from mechanical injury and damage from water, steam and oil YES, are the bedplates and frames earthed YES and the prime movers and generators in metallic contact YES Switchboards, where are main switchboards placed IN ENGINE-ROOM NEAR GENERATORS.

are they in accessible positions, free from inflammable gases and acid fumes YES, are they protected from mechanical injury and damage from water, steam and oil YES, if situated near unprotected combustible material state distance from same horizontally - and vertically - what insulation material is used for the panels SINDANYO, 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 frame effectually earthed YES

Is the construction as per Rule YES, including accessibility of parts YES, absence of fuses on the back of the board YES, individual fuses to pilot and earth lamps, voltmeters, etc. YES locking of screws and nuts YES, labelling of apparatus and fuses YES, fuses on the "dead" side of switches YES Description of Main Switchgear for each generator and arrangement of equaliser switches.

200 AMP. D.P. KNIFE PATTERN SWITCH WITH TWO 200 AMP. FUSES.

2 20 110 152 750 STEAM ENGINE

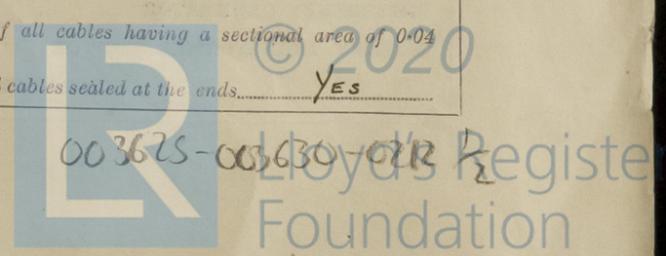
and for each outgoing circuit 60 OR 30 AMP. D.P. CHANGE-OVER SWITCHES WITH FUSES.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule YES Instruments on main switchboard 2

ammeters 2 voltmeters - synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the equaliser connection - Earth Testing, state means provided EARTH LAMPS.

Switches, Circuit Breakers and Fuses, are they as per Rule YES, are the fuses an approved type YES, are all fuses labelled as per Rule YES. If circuit breakers are provided for the generators, at what overload current did they open when tested - are the reversed current protection devices connected on the pole opposite to the equaliser connection - have they been tested under working conditions, and at what current did they operate - Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule YES

Cables, are they insulated and protected as per the appropriate Tables of the Rules 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 LIGHTING 4.6 VOLTS POWER 5.0 VOLTS, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets YES Are paper insulated and varnished cambric insulated cables sealed at the ends. YES



with insulating compound — or waterproof insulating tape 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 cables laid under machines or floorplates —, if so, are they adequately protected —. Are cables in machinery spaces, galleys, laundries, etc., lead covered YES or run in conduit —. State how the cables are supported and protected MAINS: H.R.B. CABLE IN STEEL PIPE.

MACHINERY SPACE: L.C. CABLE CLIPPED TO STEELWORK

ACCOMMODATION: V.C.L.C. CABLE CLIPPED TO WOODWORK.

Are all lead sheaths, armouring and conduits effectually bonded and earthed YES. Refrigerated chambers, are the cables and fittings as per Rule —.

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 effectually bushed YES and with what material FIBRE. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule YES. Emergency Supply, state position — and method of control —.

Navigation Lamps, are they separately wired YES controlled by separate double pole switches YES 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. Secondary Batteries, are they constructed and fitted as per Rule —, are they adequately ventilated — what is the battery capacity in ampere hours —.

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof YES. Are fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present —, if so, how are they protected — and where are the controlling switches fitted —, are all fittings suitably ventilated YES, are all fittings and accessories constructed and installed as per Rule YES. Searchlight Lamps, No. of —, whether fixed or portable —, are their fittings as per Rule —. 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 YES and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil YES, if situated near unprotected combustible material state minimum distance from same horizontally — and vertically —. Are motors coupled to oil fuel transfer and unit pressure pumps capable of being stopped from a position accessible in the event of fire in the pump compartment —. Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing —. Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule —. 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 —, are all fuses of the cartridge type — are they of an approved type —. Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships —. Are the cables lead covered as per Rule —. Spare Gear, if the vessel is for open sea service have spares been provided as per Rule YES, are they 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	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ...	2	20	110	182	750	STEAM ENGINE	-	
EMERGENCY ...								
ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
		No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR ...	20	1	19.083	182	191	60	V.C.	L.C.
" " EQUALISER ...								
EMERGENCY GENERATOR ...								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
	No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
AUX. SWITCHBOARDS AND SECTION BOARDS ...							
ENGINEER LIGHTING SECTION.	1	19.052	47.5	64	126	H.R.	IN PIPE
SALOON - NAVIGATION SECTION.	1	7.064	28.8	46	316	H.R.	IN PIPE
CREW FIT SECTION.	1	7.064	25.4	46	460	H.R.	IN PIPE

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS ...	1	7.064	15	46	400	H.R.	IN PIPE
NAVIGATION LIGHTS ...	1	7.036	9	24	100	H.R.	IN PIPE
LIGHTING AND HEATING ...							
CARGO LIGHTING BOARD	1	7.064	39.6	46	126	H.R.	IN PIPE
HEAT CARGO	1	7.064	12.7	46	200	H.R.	IN PIPE
FORWARD CARGO	1	7.064	12.7	46	430	H.R.	IN PIPE
CREW QRS LIGHTING BOARD	1	7.044	7.9	31	6	H.R.	-
ENGINE ROOM.	1	7.044	24	42	20	V.C.	L.C.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
DOMESTIC REFRIGERATOR	1	2	1	7.044	17.5	31	140	H.R. IN PIPE
CREW QRS VENT FAN	1	2	1	7.044	17.5	31	30	H.R. IN PIPE

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.

P. Pro. THE SUNDERLAND FORGE & ENGINEERING CO. LTD.

Electrical Engineers. Date 18/11/44

COMPASSES.

Minimum distance between electric generators or motors and standard compass THIRTY FEET.

Minimum distance between electric generators or motors and steering compass TWENTY-FIVE FEET.

The nearest cables to the compasses are as follows:-

A cable carrying 7 Ampères 8 feet from standard compass 6 feet from steering compass.

A cable carrying 16 Ampères LED INTO standard compass LED INTO 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 100 H.P. YES IN PIPE

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 9.6 degrees on 126 H.P. IN PIPE course in the case of the

FORWARD COMPASS, and NIL degrees on 46 H.P. IN PIPE course in the case of the steering compass.

CREW QRS LIGHTING BOARD ENGINE ROOM

LITHGOWS LIMITED. Secretary. Date 21/11/44

Is this installation a duplicate of a previous case YES If so, state name of vessel MALIKA

Plans. Are approved plans forwarded herewith NO If not, state date of approval 14/7/43

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

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

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

DOMESTIC REFRIGERATOR 1 2 1 17.5 31 140 H.P. IN PIPE

CREW QRS VENT FAN 1 2 1 17.5 31 30 H.P. IN PIPE

Notes Run 4.12.44

Total Capacity of Generators 40 Kilowatts.

The amount of Fee £ 25 - : When applied for, at £ 15

Travelling Expenses (if any) £ 1 : 10 : When received, 10

J. M. Gardiner. Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 28 NOV 1944

Assigned See F & E Report (Gra No. 22863)

5th, 4th, 3rd - Transfer. (MADE AND PRINTED IN ENGLAND.) (The Surveyors are requested not to write on or below the space for Committee's Minute.)

