

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.....

Date of writing Report.....19..... When handed in at Local Office... 21. 8. 1944 Port of... NEWCASTLE-ON-TYNE.

No. in Survey held at... HIGH SHIELDS. Date, First Survey... (1941) May 31 Last Survey... Aug 4th 1944  
Reg. Book. (Number of Visits... 15)

on the... S/S "EMPIRE MOULMEIN." Tons {Gross 7047.49  
Net 4741.25

Built at... HIGH SHIELDS. By whom built... JOHN READHEAD & SONS LTD. Yard No... 540 When built... 1944

Owners..... Port belonging to.....

Electrical Installation fitted by... CLARK CHAPMAN & CO. LTD. Contract No... 540 When fitted... 1944

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

Have plans been submitted and approved... YES System of Distribution... TWO WIRE INSULATED 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... 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... 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... ENGINE ROOM STBD. NO. 1 INBOARD FWD. NO. 2 OUTBD. FWD.

NO. 3 INBD. AFT. 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... ENGINE ROOM STBD. ON AFT. BULKHEAD

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... INTEROHM, 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... 300 AMPERT T. P

CIRCUIT BREAKERS WITH OVERLOAD, NO VOLT. AND REVERSE CURRENT TRIPS.

and for each outgoing circuit... DOUBLE POLE Q. B. SWITCH AND DOUBLE POLE FUSE.

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 is the ammeter connected on the pole opposite to the

equaliser connection... YES Earth Testing, state means provided... EARTH LAMPS CONNECTED TO 'E' THROUGH SWITCHES AND FUSES

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... 40% are the reversed current

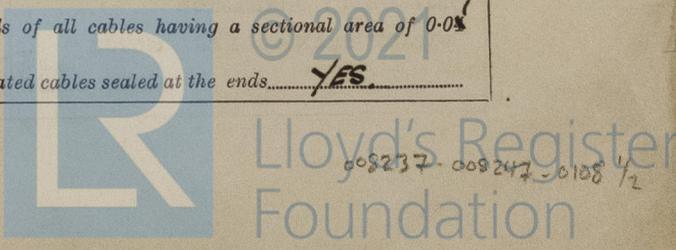
protection devices connected to the pole opposite to the equaliser connection... have they been tested under working conditions, and at what current

did they operate... 15% 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... 16 V. are the ends of all cables having a sectional area of 0.08

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 — or run in conduit YES. State how the cables are supported and protected. LEAD COVERED CABLES CLIPPED ON TRAY PLATES, AND ON WOODGROUNDS IN ACCOMMODATION V.I.R. CABLES IN CONDUIT AND WROUGHT IRON PIPES.

Are all lead sheaths, armouring and conduits effectually bonded and earthed YES. Refrigerated chambers, are the cables and fittings as per Rule 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 effectually bushed YES and with what material LEAD. 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 —, 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 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 —, 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 YES. 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.	Ampères.	Rev. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	3	30	110	273	600	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	3X30	1	61/093	273	289	70/30	V.I.R.	L.C.
" " EQUALISER		1	37/083				V.I.R.	L.C.
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 ...							
ENGINEERS AND AFT SECTION BOARD.	1	19/044	46	53	50	V.I.R.	CONDUIT.
SALOON AND FWD. " "	1	19/044	36	53	300	V.I.R.	"
No 2. HOLD SECTION BOARD.	1	37/072		152	350	V.I.R.	"
No 3. " " "	1	37/072		152	145	V.I.R.	"
No 5 " " "	1	37/072		152	100	V.I.R.	"

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	No.	Sectional Area or No. and Dia. of Strands, Sq. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
			In the Circuit.	Rule.			
WIRELESS	1	7/064	16	46	350	V.I.R.	CONDUIT.
NAVIGATION LIGHTS	1	7/036	9.1	24	350	V.I.R.	"
LIGHTING AND HEATING							ALTERNATE SUPPLY FROM SALOON LIGHTING. FUSE BOARD.
SALOON ACCOMM. LIGHTING DIS. BOARD	1	7/064	23	46	12	V.I.R.	CONDUIT
FWD " " "	1	7/036	3	24	300	V.I.R.	"
AFT " " "	1	7/064	22	46	150	V.I.R.	"
ENGINEERS " " "	1	7/064	20	46	10	V.I.R.	"
ENGINE ROOM " " "	1	7/036	14	24	24	V.I.R.	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	Sectional Area or No. and Dia. of Strands, Sq. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
				In the Circuit.	Rule.			
REFRIGERATOR	1		7/064	30	46	320	V.I.R.	CONDUIT
PORT. FAN MOTOR No 2 HOLD	1	8 1/4	19/064	55	83	20	V.I.R.	L.C.
BTB B " " "	1	8 1/4	19/064	55	83	20	V.I.R.	L.C.
PORT " No 3 "	1	8 1/4	19/064	55	83	20	V.I.R.	L.C.
STBD " " "	1	8 1/4	19/064	55	83	20	V.I.R.	L.C.
PORT " No 5 "	1	8 1/4	19/064	55	83	60	V.I.R.	L.C.
STBD " " "	1	8 1/4	19/064	55	83	12	V.I.R.	L.C.
SALT WATER PUMP	1	10	19/064	67.8	83	25	V.I.R.	L.C.

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.

For CLARKE, CHAPMAN & CO. LTD.

*V. M. M. M.* Secretary

Electrical Engineers.

Date 15 AUG 1944

COMPASSES.

Minimum distance between electric generators or motors and standard compass 38 FEET

Minimum distance between electric generators or motors and steering compass 32 FEET

The nearest cables to the compasses are as follows:—

A cable carrying .14 Ampères INSIDE standard compass INSIDE feet from steering compass.

A cable carrying .14 Ampères INSIDE feet from standard compass INSIDE 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 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 EVERY course in the case of the standard compass, and NIL degrees on EVERY course in the case of the steering compass.

FOR JOHN READHEAD & SONS LTD.

*John Readhead* Builder's Signature

Builder's Signature.

Date 17.8.44

MANAGING DIRECTOR.

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

Plans. Are approved plans forwarded herewith — If not, state date of approval 1-6-44

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

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 installed in conformity with the Society's Rules and Regulations, and the arrangements are in accordance with, or equal to those shown on the Approved Plans.*

*Materials used are of good quality and the workmanship is satisfactory. On completion, insulation resistance of all circuits was good, and the Generators and Motors operated under working conditions, with satisfactory results.*

*The equipment so installed is, in my opinion, suitable for a pleasure vessel.*

*Notes  
OK  
29.8.44*

Total Capacity of Generators 90 Kilowatts.

*Sunderland*  
 The amount of Fee ... £ 31 : 10 : 6  
 Travelling Expenses (if any) £ : :  
 When applied for, 22 AUG 1944  
 When received, .....

*A. A. Diment*  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute WED, 6 SEP 1944

Assigned see minute on J.E. Rpl.

